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FOREWORD

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1. Grammatikakis, N., Lin, J.-H., Grammatikakis, A., Tsiichlis, P. N. and Cochran, B. H. (1999). p50^{cdc37} acting in concert with Hsp90 is required for Raf-1 function. *Mol. Cell Biol.* 19, 1661-1672.

2. Silverstein, A. M., Grammatikakis, N., Cochran, B. H., Chinkers, M. and Pratt, W. B. (1998). p50(cdc37) binds directly to the catalytic domain of Raf as well as to a site on hsp90 that is topologically adjacent to the tetratricopeptide repeat binding site. *J Biol Chem* 273, 20090-5.

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Expression Data from Gene array analysis of human breast cell lines

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Introduction

Cdc37 was initially discovered as a cell cycle gene in the yeast *Saccharomyces cerevisiae* (Reed, 1980). Its mammalian counterpart interacts with growth regulating kinases including CDK4, c-src, and Raf-1 (Dey et al., 1996; Stepanova et al., 1996; Perdew et al., 1997; Silverstein et al., 1998). It is co-expressed with cyclin D1 during mammary epithelial cell proliferation. Since cyclin D is an important gene often amplified in breast cancer (Buckley et al., 1993), this proposal seeks to understand the function of cdc37 and its possible in breast cancer.

We have found that cdc37 targets HSP90 to Raf-1 and is required for Raf activation (Grammatikakis et al., 1999). It is commonly thought that the role of cdc37 is to target HSP90 to specific protein kinases like Raf-1, CDK4 and c-src (Stepanova et al., 1996; Hunter and Poon, 1997). Our work has shown that most of cdc37 is in a constitutive complex with the chaperone protein HSP90 (Grammatikakis et al., 1999). Work in both yeast and *Drosophila* indicates that cdc37 can regulate cell growth (Cutforth and Rubin, 1994; Gerber et al., 1995). To this end, we have examined breast cancer cell lines for indications of genetic alterations of the cdc37 gene and attempted to inhibit cdc37 function with geldanamycin, antisense oligos, and a dominant negative cdc37. We have found that at least one human breast cancer cell line has an amplification of the cdc37 gene. Moreover, consistent with our original hypothesis, the Stepanova et al (2000) have shown that cdc37 causes breast cancer in transgenic mice (Stepanova et al., 2000).

Body

Amplification of the cdc37 locus in a breast cancer cell line (task 2)

We have screened six different breast cancer cell lines (both estrogen-dependent and estrogen-independent) for amplifications and rearrangements in the cdc37 genetic locus. DNA was isolated from the six cell lines and primary human diploid fibroblast cell line as a control and digested with EcoR1. The resulting DNA was southern blotted and probed with a 32P labeled cdc37 cDNA as a control. From Figure 1 it can be seen that one of the cell lines MDA-MB-468 shows a significant amplification of the largest fragment. Quantitative analysis by phosphorimager reveals that this band is amplified 3.5 fold relative to the same band in normal human fibroblasts. Other than these changes in band intensities, no other changes in the structure of the gene were apparent. The structure of the human cdc37 has not been determined, but the chicken gene contains 8 exons that span 8.5 kb of DNA (Huang et al., 1998). Thus, we cannot determine from these data if the entire coding sequence or only a portion of it has been amplified. However, these data represent the first demonstration of a genetic alteration of the cdc37 locus in a human tumor and suggest that cdc37 does play a role in the etiology of human breast cancer.

Enhanced expression of cdc37 in human breast cancer cell lines (tasks 3 and 4)

Since we had an indication of amplification of the cdc37 gene in at least one breast cancer cell line and we have shown that overexpression of cdc37 can lead to Raf activation, we decided to evaluate the levels of cdc37 protein expression in human breast cancer cells. (originally we were planning to look at RNA expression and will still do this, but protein expression is functionally more important). 100 ug of total cellular protein from each of three breast cancer cell lines and the growing IMR-90 fibroblast control was electrophoresed through SDS-PAGE gels and processed for Western blotting with anti-cdc37 antibody. The results are shown in Figure 2. As we have seen before, a doublet band of cdc37 is detected. We believe that the lower band is results from an alternatively

spliced form of the *cdc37* mRNA, but we have not ruled out that it may result from differential phosphorylation. We favor the former since transfection of a cDNA expression vector for *cdc37* only shows a single 50Kd form. Nevertheless, from the blot it can be seen that the cell lines with DNA amplification, MDA-MB-468 expresses 3 fold more *cdc37* than the two other metastatic cell lines. These data are interesting in that data from murine mammary tissue suggest that *cdc37* is only expressed in lactating breast tissue (Stepanova et al., 1996).

Expression of p50Cdc37 in MCF-7 cells (Task 4,5)

To determine if the effects of *cdc37* on the MAP kinase pathway extend to breast cancer cells, we examined the role of *cdc37* in the response to estrogen in the MCF-7 human breast cancer cell line. First we sought to determine whether p50cdc37 is expressed in these cells. Previously it was reported that during lactation in mice there is a strong regulation of p50cdc37 in breast tissue in vivo (Stepanova et al., 1996). We have begun to determine whether this phenomenon can be recapitulated in breast cells in culture. To this end, MCF-7 human breast cancer cells were incubated in the presence of estrogen and various times after estrogen addition cell lysates were analyzed for the expression of *cdc37* mRNA and protein. Results are shown in Fig. 3. Northern blot analysis indicates that there is constitutive expression of the *CDC37* mRNA with a slight increase after estrogen addition. However, analysis of protein expression by Western blotting indicates that there is a several fold increase in p50cdc37 protein expression by 24 hours. Thus there may be post translational regulation of *CDC37* expression in these cells. Also from these experiments, it appears that there is no gross structural alteration of the *Cdc37* mRNA or protein.

Involvement of cdc37 in Raf-1 activation (tasks 7-10)

A major accomplishment of our work has been the demonstration the *cdc37* is required for Raf-1 activation in mammalian cells. This is the first demonstration of a function for *cdc37* in mammalian cells. Moreover, we have shown that *cdc37* does these in part by recruiting HSP90 to Raf-1. This provides a basis for the understanding of how *cdc37* can function as an oncogene. This work has been published (Silverstein et al., 1998; Grammatikakis et al., 1999) and the papers are included in the appendix.

Geldanamycin inhibits the growth of the MCF-7 breast cancer cell line (Task 12)

There are currently no available small molecule inhibitors of *cdc37*. However, the drug geldanamycin is a specific inhibitor of the *cdc37* binding protein HSP90 (Stebbins et al., 1997). In so far as the role of *cdc37* is to target HSP90 to protein kinases such as CDK4 and Raf-1, then it would be expected that geldanamycin would inhibit the function of the *cdc37*/HSP90 complex. Geldanamycin has previously been found to have anti-tumor as well as anti-fungal properties (DeBoer et al., 1970; Whitesell et al., 1992; Scheibel and Buchner, 1998). Thus as a first step toward validating the *cdc37*/HSP90 complex as a potential target for anti-tumor therapy, we examined the effect of geldanamycin on the growth of the estrogen dependent MCF-7 cell line. As can be seen from the growth curve, in figure 4, 2 ug/ml of geldanamycin which is the dose effective in inhibiting Raf-1 activation completely inhibited the growth of the MCF-7 cell line.

Use of antisense oligos to inhibit cdc37 expression (task 11)

Geldanamycin inhibits HSP90 which effects many cellular processes beyond those of cdc37. In addition, Geldanamycin exhibits significant liver toxicity *in vivo* which limits its use as a therapeutic agent. In principal, agents that would inhibit cdc37 function should have similar growth inhibitory properties, but be less detrimental to other cellular functions. Thus, cdc37 inhibitors would likely be less toxic and have fewer side effects than cdc37 inhibitors. Thus, to validate this in culture, we have sought to inhibit cdc37 function with antisense oligos and with a dominant negative version of the protein. Two different phosphorothioate antisense oligos were synthesized that spanned the initiator ATG of the human cdc37 mRNA. As controls, sense counterparts of these oligonucleotides were synthesized as well. Each of these oligos, was introduced into MCF-7 cells using Lipofectin according to the manufacturers recommendations at 200 ng/ml. After 24 hours of culture, the cells were harvested and processed for cdc37 expression by western blotting. As can be seen from figure 5, the antisense oligos failed to reduce the level of expression of cdc37 protein relative to the sense controls. At this time, we are not sure if the antisense oligos failed to inhibit the translation of cdc37 or whether they inhibited translation, but that the preexisting cdc37 protein is so stable that very little was degraded over the course of this experiment. Based on other experiments, we think the later is the case. Pulse chase experiments will be done to determine this more precisely. However, if cdc37 is a relatively stable protein, then the antisense oligo approach is likely not to be an effective method for inhibiting cdc37 expression.

Overexpression of wildtype and dominant negative cdc37 in MCF-7 cells (tasks 6,13, 14)

To examine the effects of cdc37 on breast cancer cell growth, we have expressed both the wildtype and dominant negative cdc37 in the MCF-7 breast cell line and determined the effects of this on the cell cycle of these cells. We have found that HSP90 interacts with the C-terminal domain of cdc37 and that in the case of Raf-1, expression of a C-terminally truncated form of cdc37 (p36) inhibits HSP90 accumulation onto Raf-1 and Raf-1 activation (Grammatikakis et al., 1999). Thus, this form of cdc37 is a dominant negative at least with regard to Raf-1 activation and most likely for other cdc37 regulated kinases. Thus, wildtype and p36cdc37 were co-transfected into MCF-7 cells with a green florescent protein expression plasmid as a marker gene for transfected cells. After 48 hours, the cells were harvested, stained with propidium iodide and GFP+ cells were analyzed by FACS for cell cycle distribution based on DNA content. The results are shown in Table 1. In this experiment, neither the wildtype or dominant negative cdc37 had a significant effect on the MCF-7 cells. As a positive control, a plasmid that drives the expression of the CDK4 inhibitor p16 was transfected into these cells, and this plasmid was found to decrease the proportion of cell in S-phase and increase the percentage of cell in G1. Thus, we could have detected growth inhibition in this experiment.

There are several possible explanations as to why this experiment failed to show an effect. With regard to the wildtype cdc37, it may be the case that these cells are already growing at such a robust rate that that it may be hard to induce them to grow any faster. In the future, we will examine the effect of cdc37 overexpression in non-transformed breast cell lines which may grow at a slower pace to begin with. Another distinct possibility is that that expression from the transfected plasmids is weak in this cell line. However, the data in Table 1 are the results with cdc37 expressed from the strong elongation factor-1 promoter. A similar experiment with cdc37 driven from the SV40 promoter also showed no effect. Clearly we were able to get expression of GFP and p16 in these experiments, but the level of dominant negative cdc37 may not have been high enough to exert an effect since this is a relatively abundant protein. An alternate possibility is that the MCF-7 cell line is not sensitive to inhibitors of cdc37 despite the fact that it is sensitive to geldanamycin. We will test other breast cancer cell lines to determine whether a subset of them are sensitive to the

dominant negative cdc37. It will be especially interesting to test the MDA-MB-468 which has the amplified cdc37 gene.

The effect of CDC37 on estrogen receptor responses. (task 15)

Estrogen plays a key role in the regulation of breast cancer cell growth. The CDC37 partner Hsp90 has long been implicated in steroid receptor responses (Picard et al., 1990; Pratt, 1993). Recently, CDC37 has also been implicated in response of some steroid receptors (Fliss et al., 1997). In addition, there is evidence that estrogen activates the Raf-1/MAP kinase pathway in these cells (Migliaccio et al., 1996). Therefore, we sought to examine the effects of CDC37 on estrogen receptor activity.

For this purpose, we examined the response of the ERE-luciferase reporter gene in the MCF-7 human breast cancer cell line. The results are shown in Fig. 6. In this cell line in the absence of estrogen, p50^{cdc37} has little or no effect on the expression of reporter gene. In the presence of estrogen, cotransfection of the p50^{cdc37} gives a slight enhancement of expression of the reporter gene. In these cells, as expected, estrogen results in a significant 40 fold increase in the expression of reporter gene by itself. Interestingly, cotransfection of the dominant negative p50^{cdc37}ΔC in this cell line, has a dramatic effect on the response to estrogen. Though p50^{cdc37}ΔC had little effect by itself, it was able to decrease the response to estradiol by approximately tenfold. This experiment suggests that CDC37 is required for estrogen receptor response in breast cancer cell line. One caveat to this experiment is that we have failed to see p50^{cdc37}ΔC inhibition of the estrogen response when the estrogen receptor is co-transfected with p50^{cdc37}ΔC. This may indicate a stoichiometric relationship between cdc37 and the estrogen receptor.

To examine the effects of p50^{cdc37} on estrogen regulation of MAP kinase in MCF-7 cells, we have used a reporter gene assay that is sensitive and specific for the MAP kinase pathway. This assay uses the C-terminal domain of Elk-1 fused to a GAL4 DNA binding domain. Elk 1 binds to and is phosphorylated by MAP kinase. Upon phosphorylation, this fusion gene then transactivates a GAL4 UAS containing reporter gene (Marais et al., 1993). When the reporter gene and GAL4 Elk fusion are cotransfected into MCF-7 cells, robust activation of reporter gene is given by the addition of estradiol. (fig. 6B) This confirms the MAP kinase pathway is activated by estradiol. Cotransfection in addition with wild type p50^{cdc37} slightly increases the stimulation, although cotransfection of p50^{cdc37} in the absence of estradiol has little effect. Strikingly, cotransfection of the dominant negative p50^{cdc37}ΔC almost entirely abolished activation of the MAP kinase specific reporter gene. This result indicates that estrogen dependent activation of MAP kinase in human MCF-7 cells requires Cdc37.

Activation of STAT3 in breast cancer cell lines (supplemental task)

It has recently become clear that STAT3 is an oncogene and is constitutively activated in some breast cancers (Bromberg et al., 1998; Turkson et al., 1998; Bromberg et al., 1999). This activation is subsequent to c-src activation which is another cdc37 target kinase. Thus, we have examined several breast cancer cell lines for activation of STAT3 by DNA bandshift analysis. From figure 7, it can be seen that 3 of the cell lines do have constitutively active STAT3. Interestingly, MDA-MB-468, which has amplified and overexpressed cdc37, shows the highest degree of STAT3 activation. In the future, we will determine whether dominant negative cdc37 can inhibit this activation of STAT3.

Gene Array profiling (supplemental task, modification of task 1)

The genome project has led to the development of new technologies for the analysis of gene expression since the submission of the original proposal. Since it has now been shown that *cdc37* overexpression causes breast cancer in mice and we have found amplification and overexpression of *cdc37* in a human breast cancer cell line, we thought it would be informative to perform gene array expression profiling on this cell line relative to other breast cancer cell lines MB-MDA-231 and ZR-75 as well as to primary human breast epithelial cells (75n) and a p53 immortalized derivative of these cells (MB1) (Delmolino et al., 1993; Gao et al., 1996). To initiate this analysis, we expression profiled these cell lines against a gene array of approximately 5000 known human genes (Research Genetics, GeneFilters GF211). (Additional funds to do this analysis were kindly provided by the New England Medical Center Breast Cancer Center). 33P-labeled cDNA probes were generated against RNA isolated from these cell lines and hybridized to the gene array filters as per the manufacturers protocols (http://www.researchgenetics.com/products/GF200_protocol.php3). After the filters were washed, they were quantitatively imaged on a Molecular Dynamics phosphorimager and then quantitative data was determined for each gene on the filter with the Research Genetics pathways software. The relative intensity of each spot was compared to the 76n normal human breast epithelial primary cells (Delmolino et al., 1993). Genes that showed two fold or greater changes either positively (red) or negatively (green) were further analyzed for expression patterns by cluster analysis (Eisen et al., 1998). The overall cluster pattern is displayed graphically in figure 6. The log ratios of expression for all the genes analyzed are given in the appendix and are available as an electronic spreadsheet file online at <http://www.cochranlab.org/cluster/breastcells.htm>. With the exception of MDA-MB-231, the gross patterns of expression are similar for all cell lines examined probably reflecting their common mammary origins. (It is unclear why MDA-MB-231 has a different pattern). Interestingly, there is a clear cluster of genes which are specifically expressed primarily in the MB-MDA-468 cells that have amplified *cdc37*. A closeup of this cluster region with the identified genes is also shown in Figure 8. While it is clear that these genes do not have obviously similar functions, there are several genes of interest including signaling proteins and transcription factors. One of the upregulated genes is SMAD1 of the TGF-beta signaling pathway. Growth inhibition of breast cancer cells is correlated with estrogen independent growth. It would be interesting to determine if these cells have altered sensitivity to TGF-beta. Since the STAT transcription factors are activated in this cell line, we would expect that some of the upregulated genes would be regulated by STATs. Consistent with this is the finding that the interferon-gamma regulated gene IP-30 is in this cluster. While these data are promising in terms of pointing to clues for *cdc37* function, they are also just a beginning of the analysis. It remains to be seen whether *cdc37* overexpression is causative for the induction of these genes. For this, cluster analysis will need to be performed on cells that overexpress *cdc37*. Moreover, *cdc37* may be contributing to the expression of many genes in the non-overexpressed breast cell lines as detectable amounts of *cdc37* expression in all breast cell lines that we have examined. For this analysis, effective inhibitors of *cdc37* function need to be developed.

Key research accomplishments

- HSP90 associates with cdc37 and is targeted to Raf-1 by it (Silverstein et al., 1998; Grammatikakis et al., 1999)
- Cdc37 can activate Raf-1 as well as Ras in co-transfection experiments (Grammatikakis et al., 1999)
- A cdc37 mutant that fails to bind to HSP90 functions as a dominant negative (Grammatikakis et al., 1999).
- Dominant negative cdc37 inhibits estrogen receptor function in MCF-7 cells.
- The HSP90 inhibitor geldanamycin inhibits the growth of the MCF-7 cell line.
- The MDA-MB-468 breast cancer cell line has an amplified cdc37 gene and overexpresses the protein.

Reportable Outcomes

1. Grammatikakis, N., Lin, J.-H., Grammatikakis, A., Tsiichlis, P. N. and Cochran, B. H. (1999). p50^{cdc37} acting in concert with Hsp90 is required for Raf-1 function. *Mol. Cell Biol.* 19, 1661-1672.
2. Silverstein, A. M., Grammatikakis, N., Cochran, B. H., Chinkers, M. and Pratt, W. B. (1998). p50(cdc37) binds directly to the catalytic domain of Raf as well as to a site on hsp90 that is topologically adjacent to the tetratricopeptide repeat binding site. *J Biol Chem* 273, 20090-5.
3. Database of gene expression in various breast cell lines. Available in the appendix and online at <http://www.cochranlab.org/cluster/breastcells.htm>.

Conclusions

Our finding that *cdc37* is required for Raf-1 activation is the first characterization of a function for *cdc37* in mammalian cells. Surprisingly we found that *cdc37* could activate Raf-1 as well as the Ras oncogene when co-expressed in insect cells. Moreover, our data indicate that *cdc37* functions to recruit HSP90 to Raf-1. These data are consistent with the general hypothesis for *cdc37* function that it serves a chaperone for specific protein kinases involved in signaling processes (Hunter and Poon, 1997). These data on their own indicate that *cdc37* is a critical protein for growth factor signaling and suggest that it could be a good target for intervention in tumor cell growth. This data is further bolstered by the recent findings that overexpression of *cdc37* in mice can lead to breast cancer (Stepanova et al., 2000).

Our finding that the *cdc37* genetic locus is amplified in at least one human breast cancer cell line provides the first direct connection between *cdc37* and human cancer. Our finding that the HSP90 inhibitor geldanamycin inhibits the growth of the MCF-7 cell line indicates that the *cdc37*/HSP90 complex is likely to be an effective target for therapy of some breast tumors. The toxicity of geldanamycin limits its clinical use (Supko et al., 1995), but other HSP90 inhibitors or *cdc37* inhibitors may prove to be less toxic.

As yet our attempts to inhibit breast cancer cell growth with antisense and dominant negative *cdc37* have been unsuccessful. This is likely due to technical problems having to do with the stability of the *cdc37* protein and the expression of the dominant negative *cdc37*. Alternatively, we will try to inhibit the growth of the breast cancer cell lines by introducing an anti-*cdc37* antibody into the cells. We have now done this successfully in fibroblasts. Further reason to believe that inhibition of *cdc37* will inhibit MCF-7 growth is our observation the dominant negative *cdc37* will inhibit activation of an estrogen responsive reporter gene in these cells and MCF-7 cells require estrogen for growth. Ultimately, specific small molecule inhibitors of HSP90 need to be developed as has been done for HSP90. Such molecules could be useful both experimentally and clinically.

The recent findings that STAT3 is an oncogene and is activated in some breast cancers is an important new avenue for breast cancer research and *cdc37* could likely play a role here (Watson and Miller, 1995; Garcia et al., 1997). STAT3 is believed to be activated by src in breast cancer cells (Garcia et al., 1997). *Cdc37* interacts with Src and affects its activity (Dey et al., 1996; Perdew et al., 1997). We have found that STAT3 is constitutively activated by src in several metastatic breast cancer cell lines and that the cell line with amplified *cdc37* has the greatest amount of STAT3 activation. Consistent with the finding of STAT3 activation, we have performed initial gene expression profiling of several breast cell lines including the MDA-MB-468 cell line that has amplified *cdc37* and activated STAT3. While more cell lines need to be profiled in this way, our initial analysis indicates a cluster of co-regulated genes in the MDA-MB-468 cell line. This cluster of genes will provide new avenues of investigation for *cdc37* function and could eventually have diagnostic value if found to be correlated with prognosis or therapeutic outcome.

Our findings have opened the door to the investigation of *cdc37* as a new target for breast cancer therapy. The recent finding that *cdc37* causes breast cancer in mice by the Harper lab reinforces our findings. We are only at the beginning of the quest to understand this gene and unfortunately very few labs are working on this clearly important gene. We hope that our work will stimulate further interest in *cdc37* gene and its role in breast cancer.

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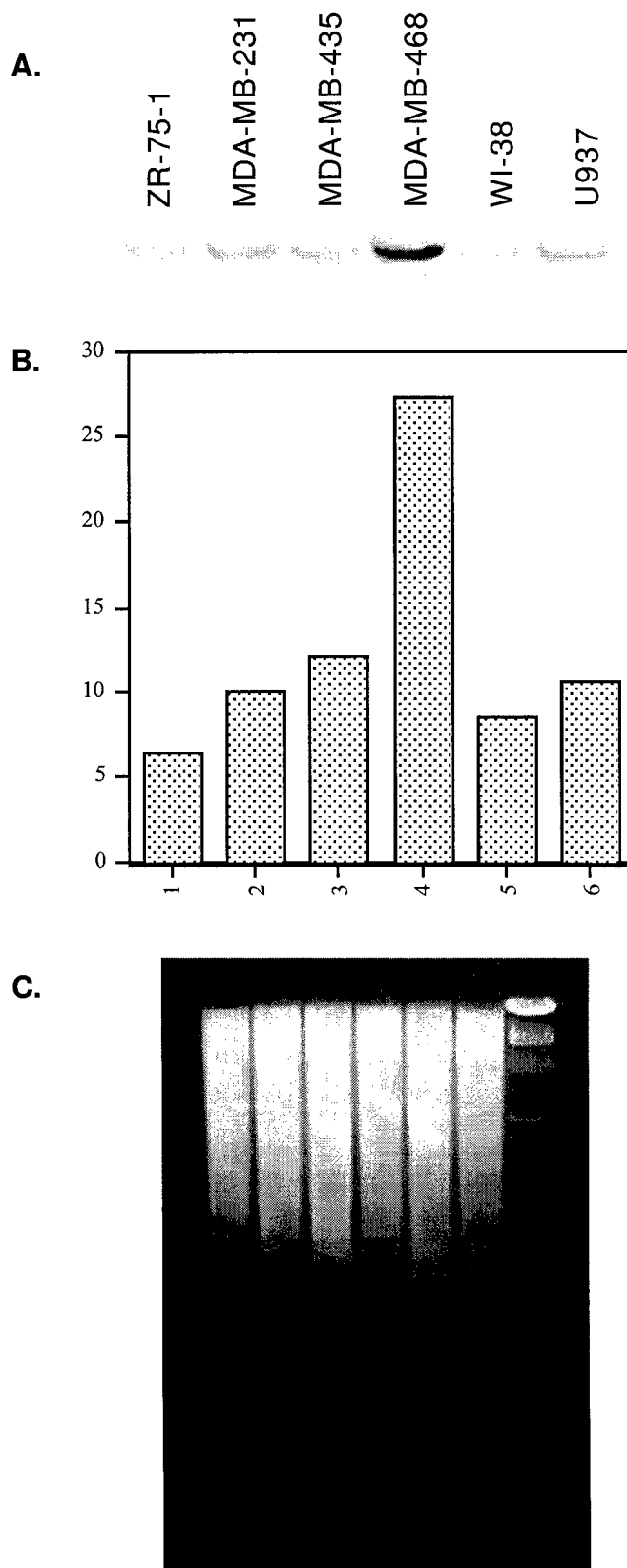
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Fig 1. Amplification of the *cdc37* locus in a breast cancer cell line.

DNA was isolated from the indicated breast cancer cell lines and the human primary diploid fibroblast cell line IMR90 and digested with *Eco*R1 and separated on a 0.8 % agarose gel and blotted onto Genescreen. A. Full length *cdc37* cDNA was labelled with 32p and hybridized to the immobilized DNA on nitrocellulose and exposed to X-ray film. B. Graph showing quantitation of the band on the phosphorimager. C. Ethidium bromide stain of the gel to show equal loading.



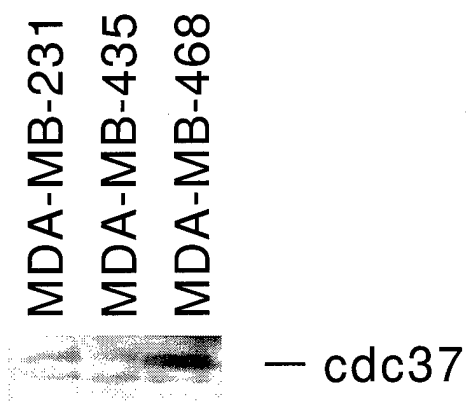
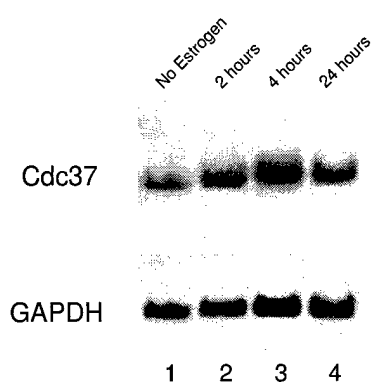


Fig. 2. Cdc37 expression in breast cancer cell lines. Extract were prepared from the indicated breast cancer cell lines and electrophoresed through SDS-PAGE gels and processed for Western blotting with anti-cdc37 antisera.

A. Northern Blot



B. Western Blot

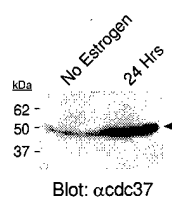


Fig. 3. Expression of CDC37 mRNA and protein in MCF-7 cells.

A. Confluent MCF-7 cells were serum starved overnight in serum-free/phenol-red free DMEM and treated with 10 nM estradiol for an indicated amount of time. Total cell RNA was analyzed by Northern. For Cdc37, a internal coding sequence of cdc37 (SmaI fragments) were used as probes. B. Similar as in A, but cells were directly lysed in SDS-PAGE sample buffer and then processed for Western Blotting using the anti-p50cdc37 antibody.

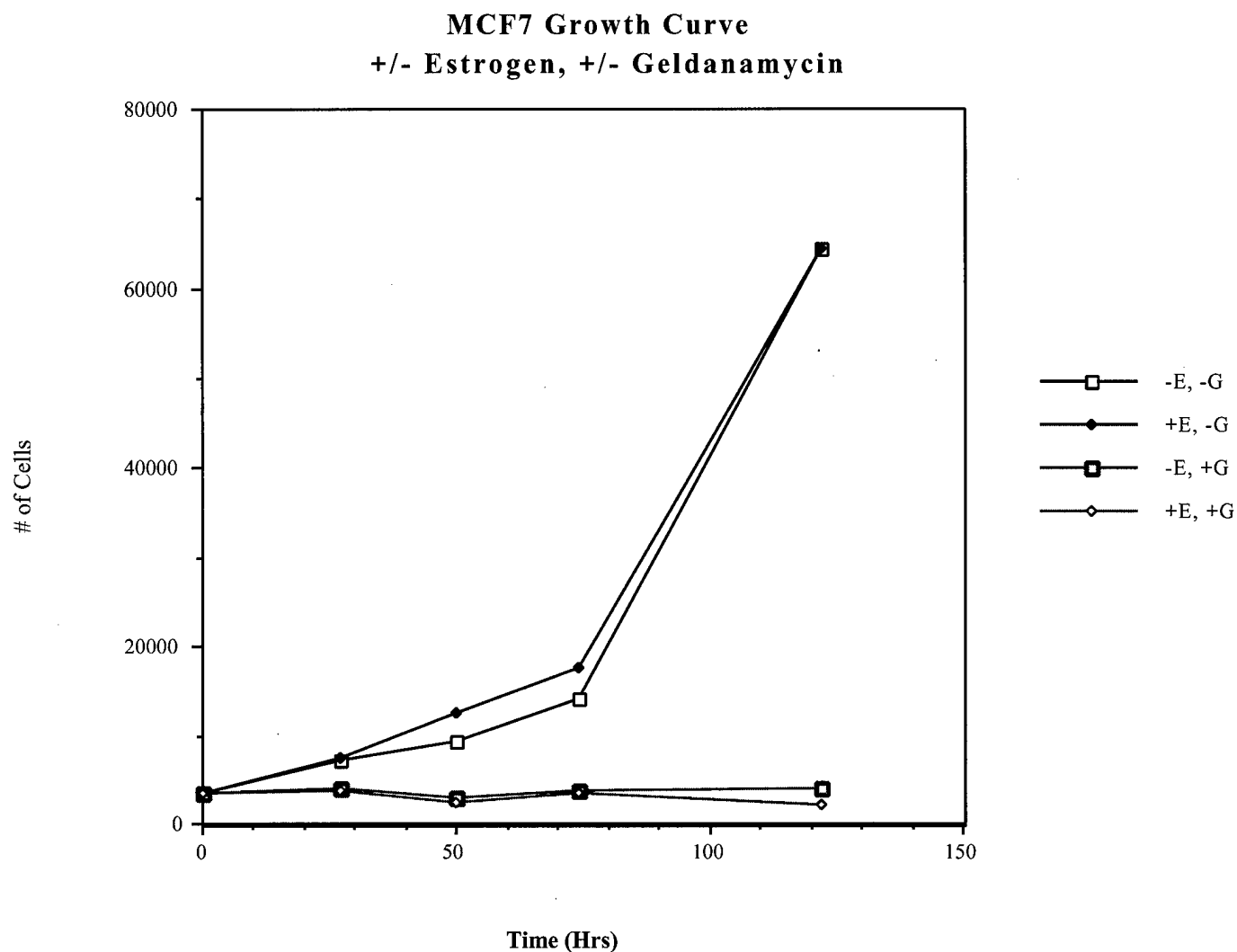


Fig. 4. Inhibition of MCF-7 growth by geldanamycin. Identical parallel cultures of MCF-7 cells in the presence or absence of additional 10 nm estradiol (E) were grown in the presence or absence of 2 ug/ml geldanamycin (G) for the indicated times and cells counted. Note: The basal growth medium contained estrogen in this experiment.

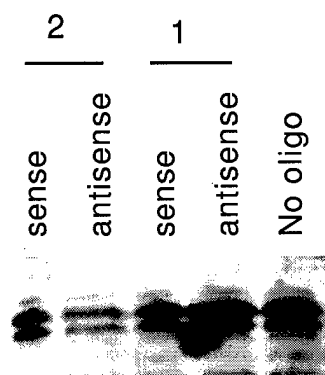


Figure 5. Effect of antisense oligos on *cdc37* expression. Phosphorothiate oligos directed toward the ATG codon of human *cdc37* were introduced into growing MCF-7 cells at a concentration of 200 nM using lipofectamine. Extracts were prepared 24 hours later and processed for Western blotting with anti-*cdc37* antiserum. Complementary sense oligonucleotides were used as controls for non-specific effects. The sequences of the oligos were as follow: antisense 1: CCACACGCTGTAGTCCACCATCTT, sense 1: AAGATGGTGGACTACAGCGTGTGG, antisense 2: CGTCATTTAAGACATGCAGACTCAT, sense 2: ATGAGTCTGCATGTCTTAAATGACG.

plasmid	Cell cycle Distribution of GFP positive cells [%]		
	G ₀ G ₁	S	G ₂ M
cdc37 (p50)	62	33	6
cdc37 Δ C (p36)	61	31	9
p16	69	24	8
pEBG vector	61	35	5

Table 1. Cell cycle analysis by flow cytometry of breast cancer MCF7 cell line transiently overexpressing cdc37 (p50) and cdc37 Δ C (p36) protein forms. Cdk inhibitor, p16, was used as control cell cycle inhibitor.

MCF7 cells were split from a confluent culture 1:5 to equal density and cotransfected on the next day with Eugene 6 (Boehringer) mixed with 14 μ g of indicated plasmid DNA and 2 μ g of EGFPF (Clontech) used as a marker of transfection for each 60-mm dish. Transfections were performed in duplicates. After 16 hours, the cells were washed with phosphate buffered saline (PBS) and grown for additional 48 hours in fresh Dulbecco's minimum essential medium (DMEM) with 10% fetal bovine serum (FBS). Then, cells were harvested by mild trypsinization followed by 5 minutes incubation in 2 ml DMEM with 10% FBS in room temperature, washed with 5 ml PBS. Pelleted cells were fixed with methanol for 8 minutes on ice, washed with PBS and incubated in 50 μ g/ml propidium iodide (PI), prepared afresh from 20 x stock, and 100 μ g/ml DNA-free RNase A in 37°C for 15 min. and for additional 30 min on ice. Flow cytometry analysis of cell samples was performed on a Becton Dickinson FACScan and acquired data were analysed using ModFit software for cell cycle profile as represented by PI signal in FL3 channel measuring DNA content. For identification of transfected cells, GFP-positive cells were gated as at least 20 times brighter in FL1 channel than the GFP-negative untransfected cells in the same sample. Percentages of cells in G₀G₁, S and G₂M cell cycle phases in least 10,000 GFP-positive cells within samples transfected with insert-containing vectors were compared to corresponding percentage values of GFP-negative cells within the same sample. The difference was compared to the difference obtained for vector-alone transfected controls and the resulting values are presented in a table above.

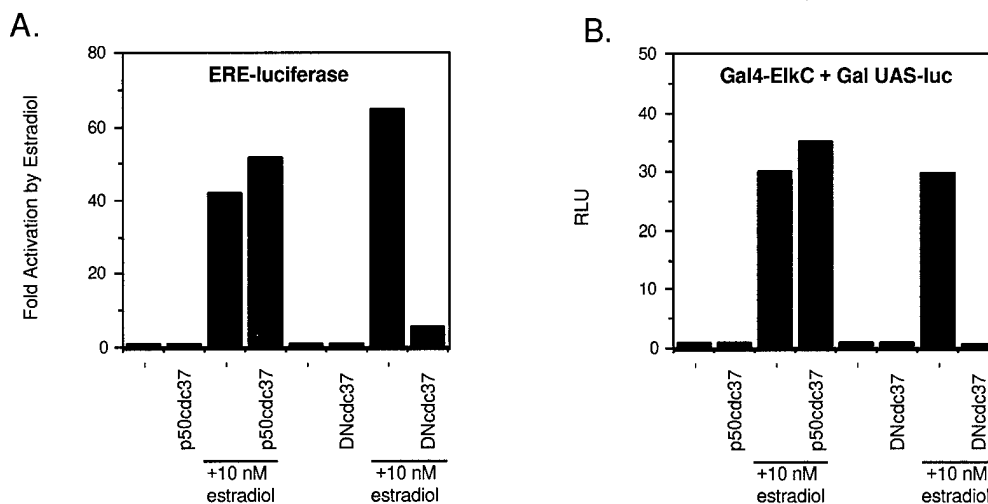


Fig. 6. Inhibition of estrogen action in MCF-7 cells by dominant negative Cdc37.

A. MCF-7 cells in phenol-free DMEM were transfected with 50 ng ERE-luciferase and the indicated p50cdc37 expression plasmid per well (24-well plate) using Fugene-6 (Boehringer-Mannheim). Next day, estrogen was added, and cells were incubated for 24 additional hours until lysis and measurement of luciferase activity. TK-Renilla luciferase activity was used as transfection efficiency control.

B. Similar to A except that the detection system used is the Stratagene Path Detect system for Elk1. This consists of a Gal4 DNA binding domain fused to the Elk-1 C-terminal activation domain and a Gal4 UAS driving a luciferase reporter gene. DNcdc37 is the dominant negative p50cdc37 Δ C.

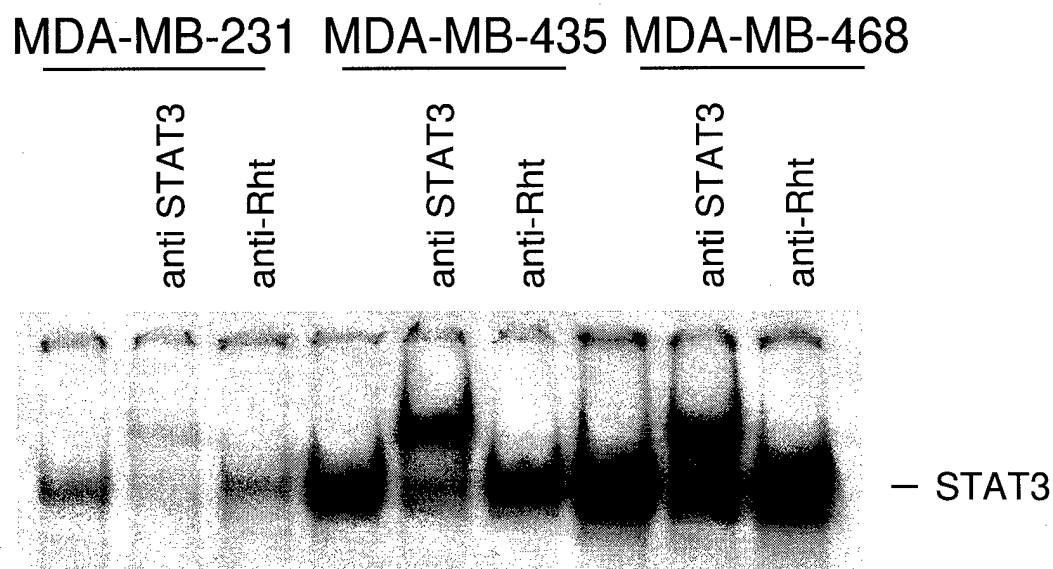


Figure 7. Activation of STAT3 in breast cancer cell lines. Nuclear extracts were prepared from the indicated breast cancer cell lines and incubated with the ^{32} -P labelled high affinity SIE probe derived from the c-fos gene. To the indicated binding reactions were added antisera to either STAT3 or the unrelated Rht protein as a control for nonspecific interaction. The binding reaction was electrophoresed through 0.5X TBE gels and exposed to X-ray film.

Figure 8. Gene expression cluster analysis of mammary epithelial and breast cancer cell lines. 33P-labeled cDNA probes were generated against RNA isolated from the indicated cell lines and hybridized to the named human gene filters (GF211) as per the manufacturers protocols (http://www.researchgenetics.com/products/GF200_protocol.php3). After the filters were washed, they were quantitatively imaged on a Molecular Dynamics phosphorimager and then quantitative data was determined for each gene on the filter with the Research Genetics pathways software. The relative intensity of each spot was compared to the 76n normal human breast epithelial primary cells (Delmolino et al., 1993). Genes that showed two fold or greater changes either positively (red) or negatively (green) were further analyzed for expression patterns by cluster analysis using the Stanford cluster software (Eisen et al., 1998). The brightness of the color reflects the relative induction or repression of each gene. The lefthand panel shows the entire profile of The log ratios of expression for all the genes analyzed are given in the appendix and are available as an electronic spreadsheet file online at <http://www.cochranlab.org/cluster/breastcells.htm>. YY1 is a neomycin resistant subclone of ZR75 and YY3 is an estrogen independent subclone ZR75 that expressed the AND1 gene (Supplied by L. Fieg). MP1 is a p53 immortalized derivative of 76n and 468 and 231 are the estrogen independent breast cancer cell lines MDA-MB-468 and MDA-MB-231 respectively (Supplied by V. Band).

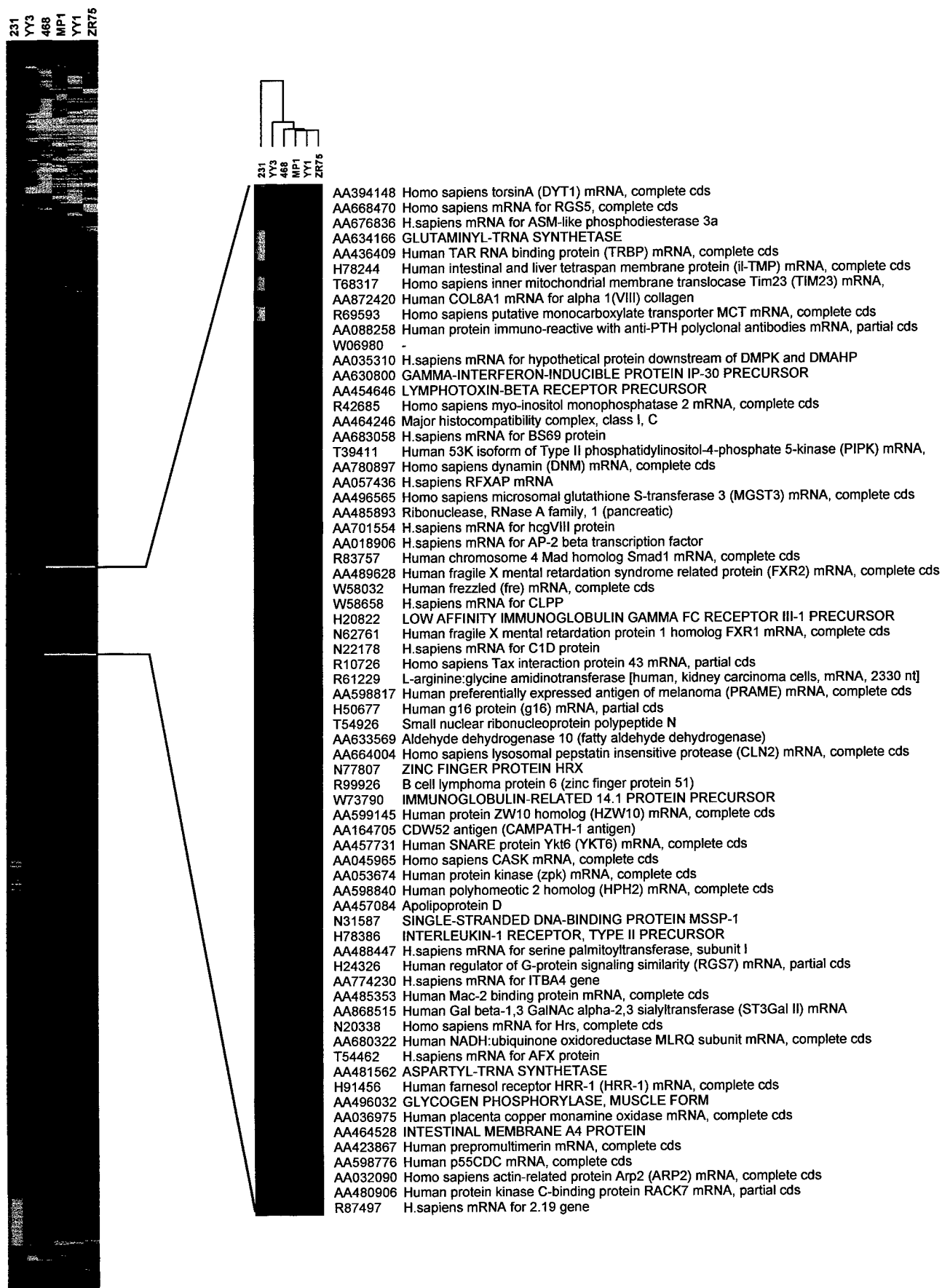


Figure 6. Cluster analysis of gene expression in breast cell lines

p50^{cdc37} Acting in Concert with Hsp90 Is Required for Raf-1 Function†

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Genetic screens in *Drosophila* have identified p50^{cdc37} to be an essential component of the sevenless receptor/mitogen-activated kinase protein (MAPK) signaling pathway, but neither the function nor the target of p50^{cdc37} in this pathway has been defined. In this study, we examined the role of p50^{cdc37} and its Hsp90 chaperone partner in Raf/Mek/MAPK signaling biochemically. We found that coexpression of wild-type p50^{cdc37} with Raf-1 resulted in robust and dose-dependent activation of Raf-1 in Sf9 cells. In addition, p50^{cdc37} greatly potentiated v-Src-mediated Raf-1 activation. Moreover, we found that p50^{cdc37} is the primary determinant of Hsp90 recruitment to Raf-1. Overexpression of a p50^{cdc37} mutant which is unable to recruit Hsp90 into the Raf-1 complex inhibited Raf-1 and MAPK activation by growth factors. Similarly, pretreatment with geldanamycin (GA), an Hsp90-specific inhibitor, prevented both the association of Raf-1 with the p50^{cdc37}-Hsp90 heterodimer and Raf-1 kinase activation by serum. Activation of Raf-1 via baculovirus coexpression with oncogenic Src or Ras in Sf9 cells was also strongly inhibited by dominant negative p50^{cdc37} or by GA. Thus, formation of a ternary Raf-1-p50^{cdc37}-Hsp90 complex is crucial for Raf-1 activity and MAPK pathway signaling. These results provide the first biochemical evidence for the requirement of the p50^{cdc37}-Hsp90 complex in protein kinase regulation and for Raf-1 function in particular.

The mitogen-activated protein kinase (MAPK) phosphorylation cascade, composed of Raf kinase, Mek (MAPK kinase), and Erk (MAPK) itself, relays proliferative and differentiative signals from the plasma membrane to the transcriptional and cell cycle progression machinery (38). Although it is established that Ras-GTP is required to tether Raf-1 to the plasma membrane (reviewed in reference 1), the subsequent events that lead to Raf-1 activation are poorly understood. The major reasons for this are (i) only a small fraction (~3%) of the total Raf-1 cytoplasmic pool needs to become activated for effective signaling (23) and (ii) the entire process of Raf-1 plasma membrane recruitment and activation is rapid and transient (for reviews, see references 37 and 45). Thus, identification of both crucial intermediates and the causative relationships in Raf-1 activation has been difficult. However, it is clear that the N-terminal domain of Raf-1 acts to repress the activity of the C-terminal kinase domain and that its deletion results in constitutive activation of the kinase (25, 68). Phosphorylation of Raf-1 and association with other proteins in response to receptor activation most likely leads to a conformational change in Raf-1 that relieves this repression (37, 45).

Raf-1 fractionated from various cell types exists in large (300- to 500-kDa) multiprotein complexes (78). Known Raf-1-associated proteins include 14-3-3, Hsp90, and pp50, a 50-kDa Hsp90-associated protein (45, 78). 14-3-3 is required for Raf-1 function but probably is not directly involved in the Raf-1 activation process (37, 42, 44). The function of the pp50-Hsp90 complex in Raf-1 activation has yet to be addressed. pp50 had previously been widely found in Hsp90-containing kinase complexes, notably involving v-Src (reviewed in reference 4), and

with both cytoplasmic and membrane localized Raf-1 (66, 78). Hsp90-associated pp50 has recently been identified immunologically and by peptide mapping to be the 50-kDa gene product of the mammalian Cdc37 homologue p50^{cdc37} (51).

Cdc37 was originally identified in yeast as a cell cycle mutant that gives a G₁ cell cycle arrest phenotype (56). Cutforth and Rubin (8) subsequently isolated an allele of *Drosophila* Cdc37 (Dcdc37) that functioned as a dominant enhancer of the *sevenless* phenotype in the *Drosophila* eye. However, these genetic experiments have not identified where and how Dcdc37 functions in the *sevenless* mitogen-activated protein kinase (MAPK) pathway. Vertebrate Cdc37 was cloned first from chicks (21, 27) and subsequently from mammals (20, 33, 50, 51, 69). The structure of Cdc37 reveals no significant homologies to proteins of known function. The yeast protein is homologous to mammalian and Dcdc37 through only the first 30 amino acids and diverges significantly thereafter. Despite this limited homology, Dcdc37 will complement the yeast gene (8). The cell cycle phenotype of *cdc37* appears to be due to a diminished capacity of G₁ cyclins and the cyclin-dependent kinase Cdc28 to associate (19). Subsequent work by ourselves and others has found that mammalian p50^{cdc37} interacts with Cdk4 and accumulates Hsp90 to it (9, 20, 33, 69). Though p50^{cdc37} has been found to interact with diverse kinase families, its interactions are selective in that, for instance, among cyclin-dependent kinases, it interacts with Cdk4 and the closely related Cdk6 but not with Cdk2 (9, 28, 69). Thus, from genetic studies, Cdc37 appears to operate in both the cell cycle and the Ras/Raf/MAPK pathway in close cooperation with its Hsp90 chaperone partner (28).

Hsp90 is an abundant and highly conserved protein (54) that is essential in yeast and *Drosophila* (2, 8). Unlike the more general Hsp70 and Hsp60 chaperones, Hsp90 appears to have substrate-specific folding activity (30, 47, 54). It has been best characterized for its essential role in steroid hormone receptor signaling, where it interacts with and modulates receptor func-

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† N.G. dedicates this paper to John, George, and Bill.

tion through a dynamic and regulated series of interactions with a defined set of chaperone cofactors (54, 65). Hsp90's conformation and activity have been proposed to be regulated by nucleotide binding, and its associations and activity can be inhibited by geldanamycin (GA) an Hsp90-specific antibiotic which competes for ATP binding to Hsp90 (22, 55). It has been further proposed that p50^{cdc37} may serve to target Hsp90 to a subset of protein kinases and thereby help them achieve an active conformation (28, 53). However, the distantly related yeast Cdc37p by itself has been shown to have chaperone activity in vitro (32).

The available mammalian association data (63, 66, 78), although not informative about the functional significance of Raf-1 association with Hsp90 and p50^{cdc37}, nevertheless are complemented by genetic evidence from *Drosophila*. Cutforth and Rubin (8) found that Hsp90 mutations enhance the *sevenless* phenotype in the *Drosophila* eye as does Dcdc37 and thus also functions in the MAPK pathway. Subsequently, van der Straten et al. (76) identified Hsp90 alleles that suppress the multiple R7 phenotype caused by the constitutive high-level activation of a membrane-targeted D-Raf kinase domain (Raf^{torY9}). In fact, the two Hsp90 point mutations recovered in this screen were the strongest dominant suppressors of the multiple R7 photoreceptor cell phenotype caused by the Ras-independent, activated Torso RTK-Raf chimeric protein. Importantly, the mutant Hsp90 proteins identified in these genetic screens exhibited reduced binding to D-Raf-1 and correlated with diminished Raf kinase activity (76). Thus, neither deletion of the N-terminal suppression domain nor membrane anchoring bypasses the requirement of D-Raf-1 for Hsp90 association.

Here, we have addressed directly the biochemical role of p50^{cdc37} and its partner, Hsp90, during Raf-1 activation and signaling to Mek and Erk. We found that p50^{cdc37} and Hsp90 each interact directly with Raf-1 but that p50^{cdc37} is the main determinant of the assembly of heterotrimeric complex. Disruption of the Raf-1-p50^{cdc37}-Hsp90 ternary complex with the Hsp90 inhibitor GA or with a dominant negative p50^{cdc37} inhibits Raf-1 activity. Serum stimulation promotes Raf-1-p50^{cdc37}-Hsp90 complex formation and coexpression of p50^{cdc37} with Raf-1 in insect cells is sufficient to activate Raf-1. Moreover, p50^{cdc37} synergizes with Src for Raf-1 activation. Our data, coupled with the aforementioned genetic studies, indicate that p50^{cdc37} and Hsp90 are critical components of the MAPK cascade and of the Raf-1 activation complex in particular.

MATERIALS AND METHODS

Cell culture and transfections. Cos-1 cells were maintained in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% fetal bovine serum (FBS) and 0.1 µg of penicillin and streptomycin per ml. Freshly plated cells were transfected at 70 to 80% confluence with a total of 7.5 µg of DNAs per 100-mm-diameter dish, using Lipofectamine (Life Technologies) or Targefect (Targeting Systems, San Diego, Calif.). In experiments requiring replicate transfected cultures, cells were split 24 h after the start of transfection into appropriate smaller dishes so that 20 to 24 h later cultures would have achieved confluence. At this point, cells were serum starved for an additional 16 to 18 h. For stimulations, serum (at 20%) or epidermal growth factor (EGF; 100 ng/ml) was directly added for 5 more min before cells were lysed. A 2-mg/ml stock solution of geldanamycin GA in dimethyl sulfoxide (DMSO) or DMSO alone was diluted 1:1,000 in the culture media for the times indicated before cells were either lysed directly or serum stimulated. Solubilized cell extracts were then quantitated for protein content by the Bradford assay and analyzed by direct Western blotting or by protein purification using antibodies or, for overexpressed glutathione S-transferase (GST) fusion proteins, by glutathione (GSH)-Sepharose chromatography, followed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and immunoblotting. Baculovirus infection and culture of *Spodoptera frugiperda* Sf9 cells was performed essentially as described by Morrison (43). Unless otherwise indicated, all baculoviruses were infected at comparable levels of multiplicity of infection (MOI).

Antibody reagents. The anti-p50^{cdc37} antibodies were raised in rabbits against the chick (pNG13 clone [21]) or human GST-p50^{cdc37} protein. Anti-epitope tag antibodies obtained from Boehringer (antihemagglutinin [anti-HA] 12CA5 and anti-Myc 9E10) or from Kodak (anti-FLAG M5). Santa Cruz Biotechnology was the supplier for additional antibodies, including ones against Raf-1 (C-12) and GST (Z-5). Monoclonal antibodies against Raf-1 and p50^{cdc37}, used in the experiment described in Fig. 1B, were purchased from Transduction Laboratories. Anti-active MAPK polyclonal antibody V6671 was obtained from Promega, and antibodies directed against Hsp90 (SPA-830 and SPA-771) and recombinant human Hsp90 purified from *Escherichia coli* (SPP-771) were obtained from Stressgen.

Cloning and constructs. For eukaryotic expression, the complete open reading frame for the human p50^{cdc37} cDNA was subcloned by PCR into the *EcoRI* sites of pMT3 and pSG5 vectors and in frame with N-terminal HA and FLAG, respectively, peptide epitopes. Similarly, GST-p50^{cdc37} constructs were placed by PCR into the *BamHI*-*NorI* sites of the pBEG eukaryotic (57) and pGEX2T (Pharmacia) prokaryotic expression vectors. For expression in insect (*S. frugiperda* Sf9) cells, the entire open reading frame for the FLAG-p50^{cdc37} fusion protein was subcloned from the pSG5 constructs into the *EcoRI*/*NorI* sites of the pFASTBAC1 (Life Technologies) baculovirus vector. Deleted versions of the FLAG-p50^{cdc37} fusion protein were produced by using appropriate enzyme digestion of the full-length inserts in pSG5, followed by agarose gel electrophoresis and DNA religation and further subcloned into pFASTBAC1 by the same approach. Cloned inserts were verified by DNA sequencing. Expression plasmids for Raf-1, Ras, and v-Src used in this study have been described previously (14, 35, 46, 63).

In vitro synthesis of radiolabeled p50^{cdc37}. Different full-length and deletion forms of p50^{cdc37} were transcribed and translated in vitro from the pSG5 expression constructs in the presence of 20 µCi of [³⁵S]methionine (EXPRESS protein labeling mix; NEN), using the coupled rabbit reticulocyte lysate and T7 RNA polymerase system (Promega).

Metabolic labeling. Nontransfected or transfected cells 48 to 60 h posttransfection were initially incubated for 2 h in methionine-free medium containing 2% dialyzed fetal serum and then labeled for 4 h with [³⁵S]methionine (NEN) in fresh medium. Cells were then lysed, and equal amounts (counts per minute) of labeled lysate were immunoprecipitated, as described below for nonlabeled lysates, and analyzed by SDS-PAGE and fluorography.

Immunoprecipitation and immunoblotting. Cells were harvested 48 to 60 h after transfection and extracted in Nonidet P-40 lysis buffer (NP-40 LB; 0.5% NP-40, 20 mM HEPES [pH 7.5], 0.1 M NaCl, 2 mM EGTA, 10% glycerol, 50 mM glycerophosphate, 2 mM dithiothreitol [DTT]) containing protease and phosphatase inhibitors (2 mM sodium vanadate, 1 mM NaF, 0.2 mM phenylmethylsulfonyl fluoride, 10 µg each of leupeptin and aprotinin per ml). For measuring Raf-1 kinase activity in Sf9 cells in the experiments represented in Fig. 4, 5B, and C, and 6A, NP-40 LB was substituted with radioimmunoprecipitation assay (RIPA) buffer (20 mM Tris [pH 8.0], 137 mM NaCl, 10% [vol/vol] glycerol, 1% [vol/vol] NP-40, 0.1% [wt/wt] SDS, 0.5% sodium deoxycholate, 2 mM EDTA). Cell lysates were cleared by centrifugation at 4°C for 15 min. The protein concentration was measured with a kit from Bio-Rad and normalized for all samples in each individual total Western or immunoprecipitation (IP) experiment. Equivalent aliquots of cleared supernatants were mixed with Laemmli SDS-loading buffer (25 mM Tris [pH 6.8], 1% SDS, 2.5% β-mercaptoethanol, 0.5 mg of bromophenol blue per ml, 5% glycerol), separated by SDS-PAGE, and transferred to a Hybond-ECL membrane (Amersham). Following preclearing, IP was performed for 2 h at 4°C, using 0.5 µg of purified anti-FLAG, anti-c-Myc, anti-HA monoclonal antibody or indicated purified rabbit polyclonal antisera. Immune complexes were then recovered by binding to GammaBind-Plus Sepharose (Pharmacia). Alternatively, GST fusion proteins were purified using pre-equilibrated GSH-Sepharose (Pharmacia) as described elsewhere (64). After three washes with 50 volumes lysis buffer, GSH-Sepharose-bound proteins and immunocomplexes were processed for electrophoresis as described above. The entire protein purification procedure was done at 4°C. Immunoblot detection was performed with specified antibodies in 5% dried milk in phosphate-buffered saline and developed as described by the manufacturer of the enhanced chemiluminescence (ECL) system (Amersham). For reblotting, membranes were incubated in 20 mM DTT-1% SDS in phosphate-buffered saline for 10 min at ambient temperature.

Protein purification and in vitro association assays. GST fusion proteins were produced and purified by GSH-Sepharose affinity chromatography in NETN buffer (20 mM Tris, [pH 8.0], 0.1 M NaCl, 1 mM EDTA, 0.5% NP-40) supplemented with proteinase and phosphatase inhibitors as previously described (64). Kinase-defective bacterial His₆-Mek-1 (K97M) was similarly prepared, using a kit from Qiagen. FLAG-p50^{cdc37} was immunoaffinity purified by agarose-cross-linked anti-FLAG monoclonal antibody M2 (Kodak) according to the supplier's instructions. For studying in vitro associations, GSH-Sepharose-bound GST fusion proteins were then directly incubated with either purified or in vitro-translated proteins in NETN buffer for 2 h at 4°C. Bound complexes were subsequently washed three times in 50 volumes of prechilled NETN buffer, and after SDS-PAGE they were either immunoblotted or, for [³⁵S]methionine-labeled proteins, directly analyzed by fluorography.

Protein kinase assays. For kinase reactions, GSH-Sepharose-bound GST fusion proteins or immunocomplexes, prepared as described above, were addition-

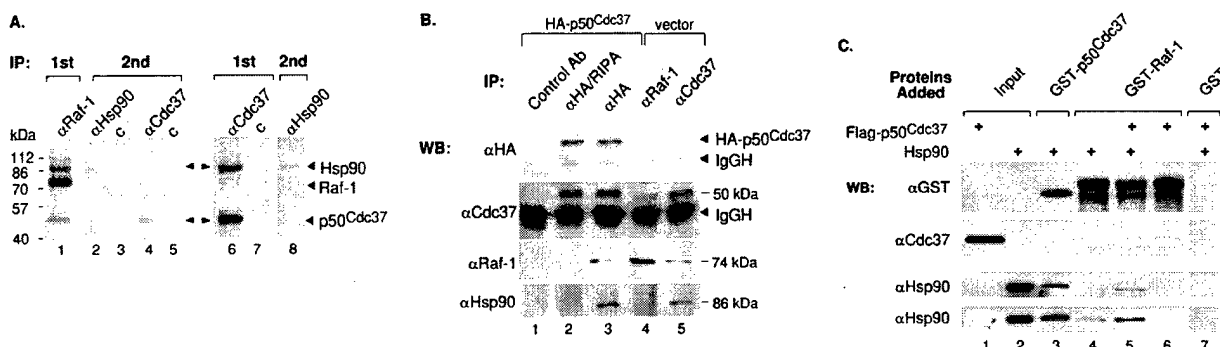


FIG. 1. Association of p50^{cdc37}, Hsp90, and Raf-1 in vivo and in vitro. (A) Lane 1, anti-Raf-1 IP from [³⁵S]methionine-labeled Cos-1 cells. Lanes 2 to 5, after the primary anti-Raf IP was boiled for 2 min in the presence of 0.5% SDS, a second IP was carried out with anti-Hsp90 or control (c) antibody (lanes 2 and 3) or with polyclonal anti-p50^{cdc37} or nonimmune rabbit (c) antibody (lanes 4 and 5, respectively). Lanes 6 and 7, anti-p50^{cdc37} primary IPs and nonimmune rabbit serum IPs, respectively, from [³⁵S]methionine-labeled Cos-1 cells. A second IP with anti-Hsp90 antibody (lane 8) was performed with a fraction of the anti-p50^{cdc37} primary immunoprecipitate identical to that run in lane 6. The relative migration of molecular weight marker proteins is indicated. (B) Plasmids pMT3-HA-p50^{cdc37} and pMT3-HA were transiently transfected into Cos-1 cells, and extracts were immunoprecipitated with anti-FLAG antibody (Ab) M5 as a control (lane 1) or anti-HA monoclonal antibody 12CA5 under either denaturing or mild conditions (RIPA or NP-40 LB buffer; lanes 2 and 3, respectively) or, to purify endogenous Raf-1 and p50^{cdc37} proteins, with anti-Raf-1 (lane 4) and anti-p50^{cdc37} (lane 5) monoclonal antibodies. Immunoprecipitated proteins were examined by Western blotting (WB) and ECL for the presence of transfected HA-p50^{cdc37} with anti-HA antibody or for the presence of both transfected and endogenous p50^{cdc37} with anti-p50^{cdc37} rabbit antisera. Endogenous Raf-1 and Hsp90 proteins were detected with rabbit anti-Raf-1 antibodies and rat anti-Hsp90, respectively (top to bottom panels). IgGH, precipitating IgG antibody heavy chains. (C) FLAG-p50^{cdc37} (immunoaffinity purified from baculovirus-infected Sf9 cells) and Hsp90 (recombinant *E. coli*; Stressgen) were assayed in vitro for binding to bacterially produced GST-Raf-1, GST-p50^{cdc37}, or GST alone as indicated by GSH-Sepharose pull-down assays and Western blotting (WB) with the indicated antibodies as described in Materials and Methods. Anti-Hsp90 immunoblotting performed with two distinct Hsp90-specific antibodies (SPA-830 and SPA-771) is shown (bottom two panels). The first two lanes indicate the input amounts of purified proteins added. The arrowhead denotes the position of the full-length GST-Raf-1 above the breakdown products.

ally washed in 50 volumes of kinase buffer (25 mM HEPES [pH 7.5], 10 mM MgCl₂, 10 mM MnCl₂, 1 mM DTT), drained, and incubated for 15 min at 30°C in 30 μl of fresh kinase buffer containing 20 μM ATP, 5 μCi of [^γ-³²P]ATP (6,000 Ci/mmol; NEN), and 0.5 μg of recombinant kinase-defective His₆-Mek-1(K97M). Assays were terminated by the addition of Laemmli SDS-loading buffer, the boiled samples were resolved by SDS-PAGE, and phosphorylated substrate proteins were quantitated by phosphorimager analysis and autoradiography.

RESULTS

p50^{cdc37} bridges Hsp90 to Raf-1. Previously Hsp90 and p50^{cdc37} were detected by immunological methods in a complex with Raf-1 (51, 66, 78). Here we have used cloned p50^{cdc37} and Raf-1 proteins to reconstitute and further characterize the precise interactions among p50^{cdc37}, Hsp90, and Raf-1. Cos-1 cells express Raf-1, which is the principal Raf isoform (16), and both Hsp90 and p50^{cdc37}. In accordance with previous findings for other tissues (11, 12, 34, 78), two proteins of approximately 90 and 50 kDa coprecipitate with endogenous Raf-1 in Cos-1 cells (Fig. 1A). Subsequent disruption of the complex and a second round of IP with anti-Hsp90 and anti-p50^{cdc37} antisera indicates that these two coprecipitating proteins are immunologically related to Hsp90 and p50^{cdc37}, respectively (Fig. 1A, lanes 1 to 5). The converse experiment precipitating first with anti-p50^{cdc37} antibodies shows stoichiometric coimmunoprecipitation with Hsp90 but reveals only a faint Raf-1 band at the expected 74-kDa range (lanes 6 to 8). This is probably due to the fact that although a significant proportion of Raf-1 protein is bound to p50^{cdc37} and Hsp90 (19a, 34, 60, 78), only a fraction of p50^{cdc37}, which is present in excess over Raf-1 (not shown) and Hsp90 (1 to 2% of total cytosolic protein), is in a complex with the kinase. Our findings with [³⁵S]methionine-labeled proteins (Fig. 1A, lanes 6 to 8) and by silver staining (not shown) indicate that Hsp90 copurifies in approximately equimolar quantities with p50^{cdc37} and that the p50^{cdc37}-Hsp90 interaction also occurs in vitro in the absence of other proteins (63).

That the cloned p50^{cdc37} protein indeed associates with

Raf-1 is further supported by the experiments presented in Fig. 1B. HA-p50^{cdc37} or vector plasmids were transiently transfected into Cos-1 cells, and extracts were immunoprecipitated with anti-FLAG antibody M5 as a control (lane 1) or anti-HA monoclonal antibody 12CA5 under either denaturing or mild conditions (RIPA or NP-40 LB buffer; lanes 2 and 3, respectively) or, to purify endogenous Raf-1 and p50^{cdc37} proteins, with anti-Raf-1 (lane 4) or anti-p50^{cdc37} (lane 5) monoclonal antibodies. Immunoprecipitated proteins were then examined by Western blotting and ECL for the presence of transfected HA-p50^{cdc37} or endogenous p50^{cdc37} with anti-HA antibody and anti-p50^{cdc37} rabbit antisera, respectively. Endogenous Hsp90 or Raf-1 proteins were detected with rat anti-Hsp90 and rabbit anti-Raf-1 antibodies. In both situations, 50-kDa proteins were found in complex with endogenous Raf-1 and Hsp90. p50^{cdc37}'s associations were sensitive to RIPA buffer (lane 2) and were specific, in that no Hsp90 or Raf-1 could be observed in control antibody IPs (lane 1). Conversely, anti-Raf-1 IPs, followed by Western blotting analysis, identified both p50^{cdc37} and Hsp90 at lower levels, but in a reproducible manner, to copurify with endogenous Raf-1. Thus, by its size and characteristics of its interaction with Raf-1 and Hsp90, cloned p50^{cdc37} is most likely pp50, the previously described 50-kDa Hsp90 partner present in the Raf-1 IPs along with Hsp90.

Similar conclusions were reached in vitro, using combinations of purified Hsp90 and p50^{cdc37} proteins to reconstitute these associations (Fig. 1C). To test whether posttranslationally unmodified Raf-1 can bind to Hsp90 and p50^{cdc37}, GSH-Sepharose-bound GST-Raf-1 that had been produced in *E. coli* was allowed to associate either with p50^{cdc37} or Hsp90 alone or with a mixture of the two proteins. Both p50^{cdc37} and Hsp90 (purified to apparent homogeneity, as judged by silver staining) were found to interact directly and independently with recombinant Raf-1 in vitro (Fig. 1C, bottom panel). Notably, Hsp90's association with Raf-1 greatly increased when p50^{cdc37} was present. This result suggests that Hsp90's associ-

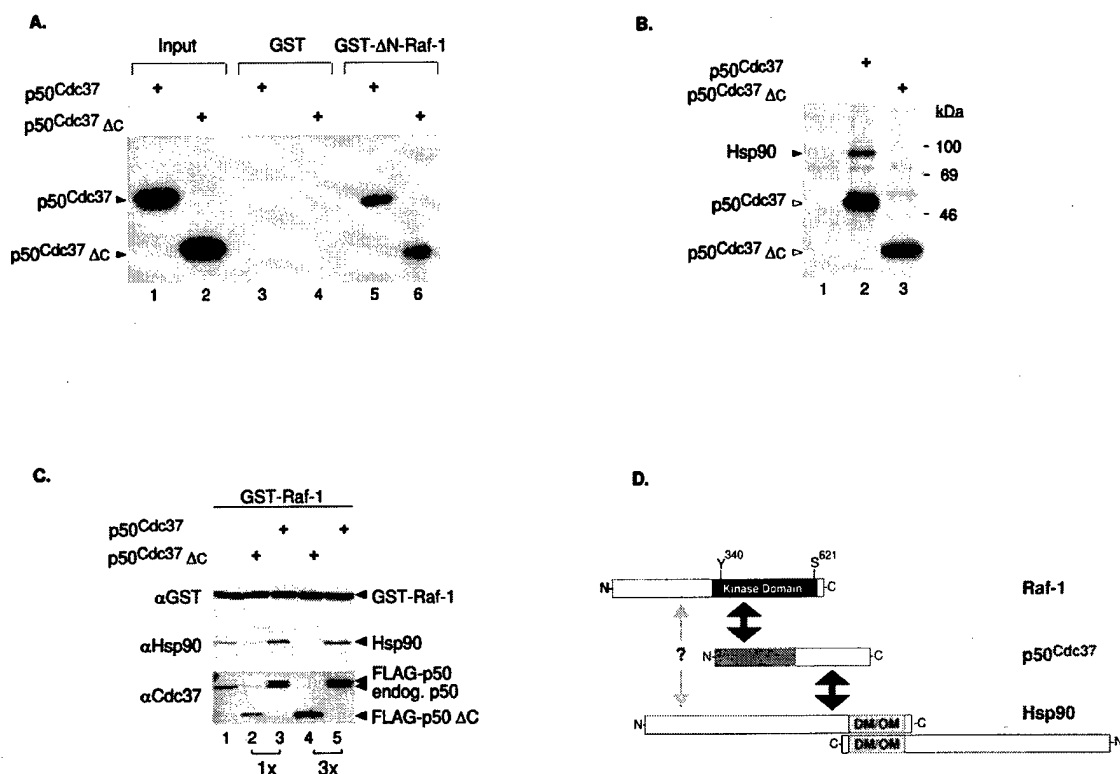


FIG. 2. The N-terminal half of p50^{cdc37} mediates association with the catalytic domain of Raf-1 but is impaired for Hsp90 interaction and accumulation to Raf-1. (A) Plasmids pSG5-p50^{cdc37} and pSG5-p50^{cdc37}ΔC were transcribed and translated in vitro, using T7 RNA polymerase and a reticulocyte lysate system (Promega); 5 μl of each reaction mixture was either analyzed directly (input lanes) or assayed in vitro for binding to either GST or bacterially purified GST-ΔN-Raf-1 (Δ26-309) and visualized by SDS-PAGE and fluorography. Comparable results were obtained with full-length GST-Raf-1 (not shown). (B) Cos-1 cells transfected with pSG5-FLAG vector, pSG5-FLAG-p50^{cdc37}, and pSG5-FLAG-p50^{cdc37}ΔC were [³⁵S]methionine labeled, and anti-FLAG IPs in NP-40 LB of each transfected sample were analyzed by SDS-PAGE and fluorography (lanes 1 to 3, respectively). Proteins at the sizes predicted for overexpressed FLAG-p50^{cdc37} proteins or associated endogenous Hsp90 are also indicated. (C) Two micrograms of pEBG-GST-Raf-1 was cotransfected with 5 μg of pSG5-FLAG vector (lane 1), pSG5-FLAG-p50^{cdc37} (lanes 2 and 3), or pSG5-FLAG-p50^{cdc37}ΔC (lanes 4 and 5) at 5 or 15 μg as indicated. After 48 h in DMEM-FBS, all five cultures were harvested and lysed in NP-40 LB, and GST-Raf-1 was GSH-Sepharose purified and tested for associated p50^{cdc37} or Hsp90 proteins with rabbit anti-p50^{cdc37} or rat anti-Hsp90 antibody. A control anti-GST immunoblot was also included to detect overexpressed GST-Raf-1 (top panel). (D) Diagram indicating regions of interaction between p50^{cdc37}, Raf-1, and Hsp90. The N-terminal half of p50^{cdc37} (gray area) which corresponds to p50^{cdc37}ΔC is sufficient for interacting with the C-terminal kinase domain of Raf-1, while its C-terminal half mediates Hsp90 interaction (indicated by black arrows). A distinct weak interaction of Raf-1 directly with Hsp90 through as yet unidentified domains is also proposed and is indicated by the gray arrow. Relative positions of the Y340 and S621 phosphorylation sites present on Raf-1 are also indicated. Since Hsp90 can both homodimerize and form oligomers through its C terminus (DM/OM) (41, 48, 49), higher-order complexes of p50^{cdc37}-Raf-1-Hsp90 can also be envisioned.

ation with Raf-1 is induced by a p50^{cdc37}-mediated Raf-1 conformational change or that, more likely, the enhanced association between Raf-1 and Hsp90 (lane 5) is mediated by p50^{cdc37} acting directly to recruit Hsp90 to Raf-1. In the latter scenario, the existence of two distinct sites on Hsp90, one for associating with the Raf-1 bound p50^{cdc37} and a second for directly binding to Raf-1, can be envisioned (Fig. 2D). These experiments demonstrate that recombinant p50^{cdc37} and Hsp90 associate directly and stably with Raf-1, confirming earlier conclusions reached by immunological means (51, 60, 66, 78). Notably, relative to the *in vivo* situation, Raf-1 association with p50^{cdc37} Raf-1 association with p50^{cdc37} is rather modest, suggesting that modifications such as phosphorylation or association with other proteins may regulate the Raf-1 interaction with p50^{cdc37} and Hsp90 as is the case for its association with 14-3-3 (42).

Since the catalytic C-terminal half of Raf-1 has been reported to be sufficient for interaction with pp50 (66), we tested whether recombinant p50^{cdc37} binds to the same Raf-1 region. *In vitro*-translated p50^{cdc37} bound efficiently to immobilized GST-ΔN-Raf-1, a viral Raf form-like construct (3, 63), but not

to GST alone (Fig. 2A) or to the N-terminal Raf-1 regulatory domain alone (not shown). This interaction of p50^{cdc37} with Raf-1 occurs via the N-terminal half of p50^{cdc37}, as a deletion mutant (p50^{cdc37}ΔC) truncated at Met164 to half the original size is sufficient to interact strongly with GST-ΔN-Raf-1. Interestingly, p50^{cdc37}ΔC is severely compromised in its ability to associate with Hsp90 in transfected Cos-1 cells (Fig. 2B) compared with full-length p50^{cdc37} which readily associates with its chaperone partner.

We then sought to determine whether this mutant could disrupt the Hsp90-Raf-1 association in a dominant fashion. When p50^{cdc37}ΔC was further coexpressed in Cos-1 cells with GST-tagged Raf-1, endogenous Hsp90 association to Raf-1 was strongly inhibited in a dose-dependent manner, with increasing amounts of p50^{cdc37}ΔC binding to the kinase (Fig. 2C). In contrast, overexpressed wild-type p50^{cdc37} not only binds to Raf-1 but also recruits Hsp90 to the complex, in agreement with results of the *in vitro* experiment shown in Fig. 1C. A likely interpretation of this observation is that overexpressed p50^{cdc37}ΔC competes with endogenous p50^{cdc37} for binding to Raf-1 and that the subsequent Hsp90 association

with GST-Raf-1, which largely depends on intact p50^{cdc37}, is prevented (Fig. 2C; compare lanes 1, 3, and 5). Thus, although some direct Hsp90 binding to Raf-1 cannot be ruled out (Fig. 1C, lane 4), we conclude that the p50^{cdc37} greatly potentiates Hsp90 accumulation into the Raf-1 complex (Fig. 2D) most likely by bridging Hsp90 to Raf-1. This result also suggests that p50^{cdc37}ΔC might interfere with the function of Hsp90 in the Raf-1 complex and potentially acts as a dominant negative allele of p50^{cdc37} in functional assays (described below).

Inability of Raf-1 to respond to serum activation correlates with its inability to complex with p50^{cdc37}-Hsp90 heterodimers. GA, a benzoquinone ansamycin (10), was originally described as a protein kinase inhibitor (74). However, subsequent examination has shown that its effects on kinases are indirect and that it specifically binds to and inhibits the action of Hsp90 (80, 81). GA has been established to be a specific reagent for assessing Hsp90's role in various signaling systems, including v-Src (80), Raf-1 (60, 61), Lck (24), heme-regulated eukaryotic initiation factor 2α kinase (75), and steroid nuclear receptors (31, 65) (reviewed in references 52 and 58). GA competitively displaces ATP and locks Hsp90 into its ADP-specific inactive conformation, disrupting a dynamic equilibrium in which unliganded steroid receptor complexes alternate among various chaperone heterocomplex intermediates (22, 31, 55, 65). GA-bound Hsp90 is then unable to form productive complexes with its steroid receptor and kinase targets, which subsequently results in their degradation upon prolonged *in vivo* GA treatment (59, 60, 62, 80). In an attempt to define the roles of p50^{cdc37} and Hsp90 in Raf-1 kinase heterocomplex formation and activity, we used GA to abrogate Hsp90-Raf-1 association and Raf-1 activation as has been shown by Schulte et al. (60, 61). However, to directly correlate Raf-1's ability to interact with p50^{cdc37} and Hsp90 with its kinase activity, we have designed our experiments to assess the effects of GA on Raf-1 at a stage prior to the time when Raf-1 is depleted from the cells due to prolonged GA treatment. In addition, to improve the detection of associated proteins, we have alternatively used GST fusion cDNAs of Raf-1 or p50^{cdc37} transiently transfected in mammalian cells. GSH-Sepharose-purified GST-Raf-1 and GST-p50^{cdc37} were then analyzed both for associated proteins and for kinase activity (57, 64).

Cos-1 cells were transfected with either GST-Raf-1 or GST-p50^{cdc37} and replated into three identical cultures. After these cultures were serum starved overnight, two of the replicate transfections were stimulated with 20% serum with or without a 6-h preincubation with GA, as indicated, while the third plate was left untreated. The resulting cellular extracts were analyzed for overall protein expression and protein association with each purified GST-protein. Further, the purified GST-Raf-1 complexes were examined for *in vitro* kinase activity, using a recombinant kinase-inactive form of Mek-1 as a substrate (Fig. 3A). Western blotting of total cell extracts revealed that expression of the transfected GST-fusion proteins was approximately three times the level of the corresponding endogenous p50^{cdc37} and Raf-1 proteins (not shown) and that under these conditions GA treatment slightly reduced the levels of Raf-1 expression but had no apparent effect on p50^{cdc37} and Hsp90 steady-state levels. From this experiment, the following observations can be made. Consistent with the existing literature, transfected GST-Raf-1 kinase activities was induced by serum but not after GA pretreatment (Fig. 3A). Accordingly, serum stimulation results in small but reproducible enhancement of associations of endogenous p50^{cdc37} and Hsp90 with GST-Raf-1 (Fig. 3B lanes 1 and 2). In contrast, GA pretreatment abolished activation of Raf-1 by serum and almost entirely eliminated this association (Fig. 3B, lanes 3 and

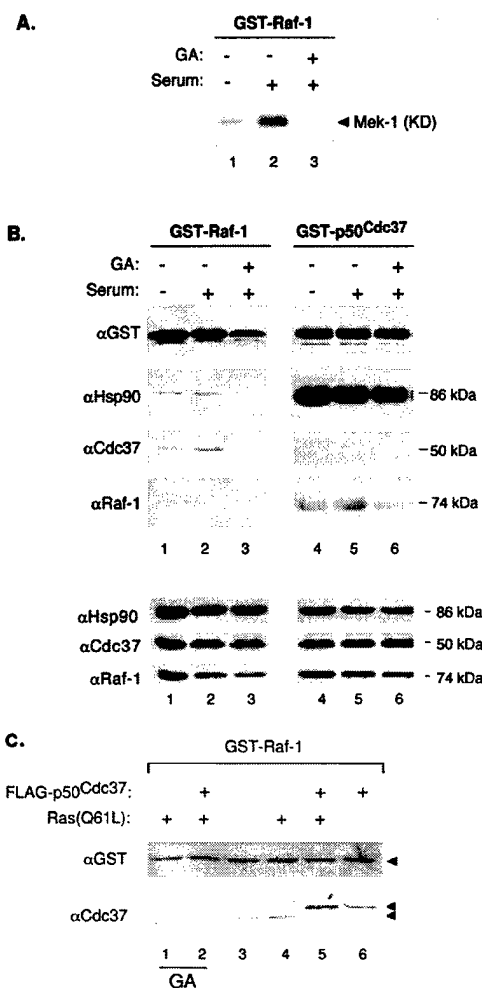


FIG. 3. (A and B) Association of p50^{cdc37} and Hsp90 with Raf-1 correlates closely with Raf-1 kinase activity. Two micrograms each of pEBG-GST-Raf and pEBG-p50^{cdc37} were transfected into subconfluent Cos-1 cells, and next day each of the transfected 150-mm-diameter plates was further split into three 100-mm-diameter plates; 16 h later, cultures were fed with serum-free medium for an additional 16 h. GA or only DMSO diluent was then added, followed by serum stimulation as indicated, and the three replicate cultures of each transfection were harvested and solubilized in NP-40 LB. (B, top panels) GST fusion proteins were then purified by GSH affinity chromatography as described in Materials and Methods and analyzed for associated proteins by SDS-PAGE and immunoblotting with the indicated antibodies; (A) 0.2-volume extract portions were similarly processed and tested for GST-Raf-1 kinase activity toward recombinant kinase-defective (KD) Mek-1. (B, bottom panels) Control immunoblots of total cell extracts. Control transfections with empty pEBG vector, followed by GSH pull-down assays and Western blotting, showed that no p50^{cdc37}, Hsp90, or Raf-1 associated with the GST propeptide alone (not shown). (C) pEBG-GST-Raf-1 was transfected into Cos-1 cells alone or with pMT2-Ras(Q61L) and pSG5-FLAG-p50^{cdc37} as indicated; 48 h later, GST-Raf-1 was isolated from NP-40 LB-solubilized cell extracts and tested by Western blotting and ECL for associated endogenous and overexpressed p50^{cdc37}, using anti-Cdc37 antiserum (bottom). Anti-GST blotting was performed to verify levels of GST-Raf-1 expression and recovery. For lanes 1 and 2, GA (2 μg/ml) was included in the growth medium for 6 h before harvest.

6). Importantly, Raf-1's association with p50^{cdc37}-Hsp90 correlates closely with its activity (Fig. 3B, lanes 1 to 3). Previously, GA was shown to decrease Raf-1 activity and expression in NIH 3T3 cells by destabilizing the protein (60, 61). Note that in this experiment, by assaying Raf-1 levels after a much

shorter treatment of Cos-1 cells with GA, GST-Raf-1 expression is only modestly reduced at this time (Fig. 3B, lanes 3), but both Hsp90 and p50^{cdc37} associations with GST-Raf-1 are nearly abolished. Thus, disruption of the Raf-1-p50^{cdc37}-Hsp90 complex by GA occurs prior to Raf-1 degradation and correlates with the inability of Raf-1 to be activated by serum growth factors even though it remains present in the cell at substantial concentrations. Our results with the p50^{cdc37}ΔC further confirm the requirement for Hsp90 association with Raf-1 independently of effects on Raf-1 protein degradation (see below).

Interestingly, overexpressed GST-p50^{cdc37} remained sequestered with endogenous Hsp90, and no changes in the association of Hsp90 with GST-p50^{cdc37} were observed under all experimental conditions, including GA pretreatment. Thus, the locking of Hsp90 into the ADP-bound conformation by GA effects the ability of the Hsp90-p50^{cdc37} complex to remain associated with Raf-1. Since p50^{cdc37}ΔC does not bind Hsp90 but can nevertheless still bind to Raf-1, this finding implies that the GA-bound conformation of Hsp90 inhibits the ability of bound p50^{cdc37} to associate with Raf-1 through either steric hindrance, allosteric regulation, or an indirect mechanism. p50^{cdc37} and Hsp90's respective associations with endogenous Raf-1 also showed small but reproducible serum-mediated enhancement and almost complete elimination by GA (Fig. 3B lanes 4 to 6). Thus, during serum activation of Raf-1, there is a stabilization of p50^{cdc37}-Hsp90-Raf-1 complex formation. A weak associated MAPKKK activity could be detected in GST-p50^{cdc37} pull-down-in vitro kinase assays from cells coexpressing exogenous Raf-1 (not shown), consistent with both our observation that the bulk of p50^{cdc37} is not Raf-1 associated (Fig. 1A) and the fact that only a small fraction of Raf-1 kinase actually becomes activated during signaling (23, 37, 45). A previous related study (78) using standard antibody-based Raf-1 purification found no changes in endogenous p50^{cdc37} and Hsp90 coprecipitating with active and inactive transfected Raf-1. The availability of cloned p50^{cdc37}, including a new array of Cdc37-specific antibodies, enabled us to perform reciprocal GST-p50^{cdc37} and GST-Raf-1 pull-down assays. Further, the antibody-free method of isolation allowed us to use higher-stringency GST-protein purification for more accurate assessment of changes in endogenous Raf-1 and p50^{cdc37} complexed with GST-p50^{cdc37} and GST-Raf-1, respectively. This, especially in the case of p50^{cdc37}, which on SDS-PAGE migrates closely with immunoprecipitating antibodies, is, as we also find, technically difficult. We have also observed that coexpression of one GST-tagged protein with a non-GST-tagged version of the other improves further the detection of an increase in Raf-1-p50^{cdc37} association during serum Raf-1 activation (not shown; see Fig. 3C).

In addition to its effects on serum activation of Raf-1, in experiments similar to the one shown in Fig. 3A, we found that GA also inhibits Raf-1 activity driven by cotransfected Ras(Q61L), a constitutively active Ras mutant (not shown). This result indicates that inhibition of Raf-1 by GA occurs downstream of Ras, in agreement with the original observations of Schulte et al. (60, 61), who found that GA had no effect on Ras levels and on Raf-1-Ras-GTP interaction. We have further observed that as with serum induction, activated Ras potentiates Raf-1 association with the p50^{cdc37} complex (Fig. 3C; compare lanes 3 and 4 and lanes 5 and 6), but in the presence of GA, this association is entirely abolished (lanes 1 and 2) although the p50^{cdc37}-Hsp90 association again remained unaffected (not shown). Altogether, the above results suggest that Raf-1's ability to respond to upstream activating

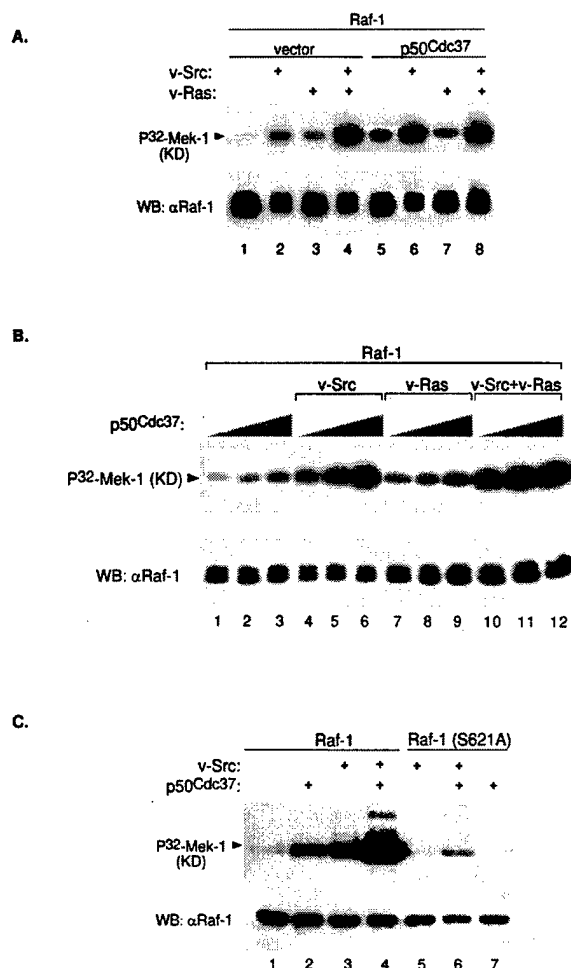


FIG. 4. Sf9 cell coinfection with p50^{cdc37} results in Raf-1 activation. (A) Baculoviruses encoding Raf-1, v-Src, v-Ras, or p50^{cdc37} were infected in Sf9 cells in the combinations indicated; 48 h postinfection, Raf-1 was immunoprecipitated with anti-Raf-1 polyclonal antibody C-12 in RIPA buffer and tested for its ability to phosphorylate recombinant kinase-defective (KD) Mek-1 as described in Materials and Methods (top). As controls, kinase assay reactions were also Western blotted (WB) with the same anti-Raf-1 antibody (bottom). (B) Baculovirus coinfection followed by Raf-1 kinase assay (top) and Western blot (bottom) were performed as for panel A. In each set, increasing amounts of p50^{cdc37} baculovirus (at 1, 3, and 9×) were added as indicated. (C) Wild-type Raf-1 and Raf-1(S621A) were either expressed alone or coexpressed with indicated v-Src or p50^{cdc37} baculovirus constructs, immunoprecipitated, and assayed for in vitro kinase activity as for panel A.

stimuli correlates with its ability to form heterotrimeric complexes with p50^{cdc37} and Hsp90.

Activation of Raf-1 by p50^{cdc37} overexpression. The Sf9 insect cell-baculovirus expression system is currently the most widely used in vivo system for evaluating potential Raf-1 activators (reviewed in references 43 and 44). Therefore, we used this system to further analyze the possible involvement of p50^{cdc37} in the Raf-1 activation process. Baculoviruses expressing full-length p50^{cdc37} and Raf-1, together or in triple combinations with v-Src- or v-Ras-expressing baculoviruses (Fig. 4A), were used to coinfect Sf9 cells. At 48 h postinfection, Raf-1 was immunoprecipitated from Sf9 cells in RIPA buffer and subsequently assayed for its ability to phosphorylate inac-

tive recombinant Mek-1. Consistent with previous reports (reviewed in reference 44), v-Src and, to a lesser extent, v-Ras both activate Raf-1, an effect most prominent when the two oncoproteins are coexpressed (Fig. 4A, lanes 1 to 4). Surprisingly, p50^{cdc37}, a unique protein with no apparent kinase or other recognizable enzymatic domain, by itself strongly activated Raf-1 to an even greater extent than v-Ras and almost as well as, although never better than, v-Src. In coinfecting combinations, the p50^{cdc37}-v-Src effect was synergistic (compare lanes 2, 5, and 6), but only modest cooperation was observed between p50^{cdc37} and v-Ras (lanes 3 and 7). The cooperation of p50^{cdc37} with v-Src and its dose-dependent activation of Raf-1 are shown even more clearly in the dose-response experiment shown in Fig. 4B.

Ser621 of Raf-1 is an indispensable major phosphorylation site whose deletion (25) or substitution by either alanine or even negatively charged aspartate inactivates the protein (17, 46), possibly by compromising the activation-competent conformation of the Raf-1 catalytic domain (44). Neither v-Src nor p50^{cdc37} could substantially induce Raf-1(S621A) activation compared with the strong positive effect of each on wild-type Raf-1 (Fig. 4C, lanes 5 to 7). Interestingly, however, p50^{cdc37} also enhanced the weak effect of v-Src on the Raf-1 mutant as it did for wild-type Raf-1 (lanes 4 and 6). This result suggests that p50^{cdc37}, in conjunction with its more abundant partner Hsp90, may be rate limiting in insect cells under these conditions and act as a chaperone by increasing the proportion of Raf-1 which is in the active conformation.

Inhibition of Raf-1 activation by dominant negative p50^{cdc37} and GA. Since the deletion mutant p50^{cdc37}ΔC fails to bind to both mammalian and insect Hsp90, we sought to determine whether this mutant might interfere with Raf-1 activity by displacing the wild-type insect p50^{cdc37}-Hsp90 complex from Raf-1 since it retains the ability to bind to Raf-1 (Fig. 2). In the experiment shown in Fig. 5A, we attempted to correlate the effects of p50^{cdc37}ΔC on Raf-1 activity with its aforementioned ability to displace the full-length p50^{cdc37} protein upon overexpression (Fig. 2C). Previously it has been found that endogenous insect Hsp90 and p50^{cdc37} associate with overexpressed mammalian Raf-1 in Sf9 cells (11, 12). However, since our p50^{cdc37} antibodies fail to recognize p50^{cdc37} from insect cells, Sf9 cells were coinfecting with baculoviruses expressing mammalian p50^{cdc37} and Raf-1 alone or with increasing amounts of a baculovirus expressing p50^{cdc37}ΔC. Extracts of infected cells were then immunoprecipitated with anti-Raf-1 and analyzed for associated mammalian p50^{cdc37} proteins and Hsp83, the endogenous insect homologue of Hsp90 (8), as well as for Raf-1 kinase activity. Figure 5A shows that, as we had previously observed in mammalian cells (Fig. 2C), p50^{cdc37}ΔC efficiently and in a dose-dependent manner displaced its full-length counterpart from Raf-1 in coinfecting Sf9 cells and strongly reduced the association of insect Hsp90 with Raf-1. The dissociation of p50^{cdc37} and Hsp90 from Raf-1 correlated closely with the reduction of Raf-1 activation to basal levels (Fig. 5A, top). A control Western blot of total cellular extracts from this experiment indicates that this effect was not due to decreased expression of wild-type p50^{cdc37}, endogenous Hsp90, or Raf-1 kinase (Fig. 5A). We conclude that p50^{cdc37}ΔC functions as a dominant negative for the p50^{cdc37}-mediated Raf-1-p50^{cdc37}-Hsp90 complex formation and subsequent Raf-1 kinase activation.

We also examined whether p50^{cdc37}ΔC could inhibit Raf-1 activation by Ras and v-Src and again found that overexpression of p50^{cdc37}ΔC in insect cells abrogated Raf-1 activation by oncogenic Src and Ras (Fig. 5B). Thus, activation of Raf-1 by

both v-Src and v-Ras in Sf9 cells is dependent on the ability of p50^{cdc37} and Hsp90 to form a productive complex with Raf-1 kinase. To gain more insight into the mechanism of p50^{cdc37}-dependent Raf-1 activation, we assessed the effects of wild-type and dominant negative p50^{cdc37} on the activity of Raf-1 catalytic domain site mutants by coinfection of Sf9 cells. As expected, Raf-1(K375M), which is kinase inactive (14), could not be stimulated by p50^{cdc37} or Src (not shown). Tyr340 and to a lesser extent Tyr341 have previously shown to be important regulatory sites, whose phosphorylation by tyrosine kinases presumably activates Raf-1 by interfering with negative regulation of the catalytic domain by the amino terminus of the protein (14). Since, as shown above, p50^{cdc37} binds both in vivo and in vitro to the catalytic half of the Raf-1 protein and interacts also both physically and functionally with Src kinases (references 4 and 13 and data not shown), we reasoned that p50^{cdc37}'s role might be auxiliary to tyrosine kinase function, i.e., by facilitating or promoting Raf-1 tyrosine phosphorylation or by preserving the active Raf-1 conformation. To test this, we coexpressed in Sf9 cells p50^{cdc37} along with Raf-1(Y340D), a constitutively active mutant (14). Indeed, p50^{cdc37}'s coexpression with Raf-1(Y340D) (Fig. 5C), even at the highest possible amounts (not shown), failed to further superinduce the already high basal activity of this mutant, consistent with the above-hypothesized role for p50^{cdc37}. However, when we also tested the effect of p50^{cdc37}ΔC on Raf-1(Y340D), we found again the previously noted strong inhibition of Raf-1 activity (Fig. 5C). Consistent with this, we have found that both p50^{cdc37} and p50^{cdc37}ΔC associate with Raf-1(Y340D), as judged by examination of the coexpressed proteins (not shown). The above results argue strongly for a potential dual role of p50^{cdc37} and its Hsp90 chaperone cofactor in the Raf-1 activation process: one where p50^{cdc37}-Hsp90 might be involved both in the efficient activation of Raf-1 and a second involving maintenance of the active kinase conformation, once relief from repression by the N-terminal domain is achieved either through tyrosine phosphorylation by v-Src (Fig. 4) or by activation of amino acid mutations (Fig. 5C).

Using a complementary experimental approach, we then tested whether GA-mediated inhibition of insect cell Hsp90 would abrogate baculovirus Raf-1 activation as we had observed in Cos-1 cells. Indeed, GA treatment of Sf9 cells coinfecting with Raf-1 and viruses expressing v-Src, v-Ras, or p50^{cdc37} resulted in dramatic decreases in Raf-1 activity (Fig. 6A) that correlated with a substantial loss of endogenous Hsp90 binding to Raf-1 in all tested combinations (Fig. 6B and data not shown). It is of note that under the conditions used, GA resulted in only slight depletion in Raf-1 protein, which, interestingly, exhibited a noticeable mobility up-shift during SDS-PAGE. Thus, the dramatic reduction in Raf-1 kinase activity cannot be accounted for by changes in levels of Raf-1 protein expression (control anti-Raf-1 immunoblot in Fig. 6A). As we have additionally observed, coexpression of Raf-1 with Hsp90 deletion constructs also abrogate Raf-1 activation without causing Raf-1 protein degradation (data not shown). Thus, Raf-1 activation by coexpression with p50^{cdc37}, v-Src, or v-Ras is dependent in each case on functional endogenous insect Hsp90.

We then examined whether, as previously found for Cos-1 cells, the GA inhibitory effect in Sf9 cells could be due to disruption of complex formation between Raf-1 and p50^{cdc37}-Hsp90. In agreement with both in vitro (Fig. 1C) and in vivo reconstitution data for Cos-1 cells (Fig. 2C), the results in Fig. 6B show that coexpression of mammalian p50^{cdc37} with Raf-1 in Sf9 cells results in strong p50^{cdc37}-Raf-1 complex formation and enhanced recruitment of endogenous Hsp90 into the ki-

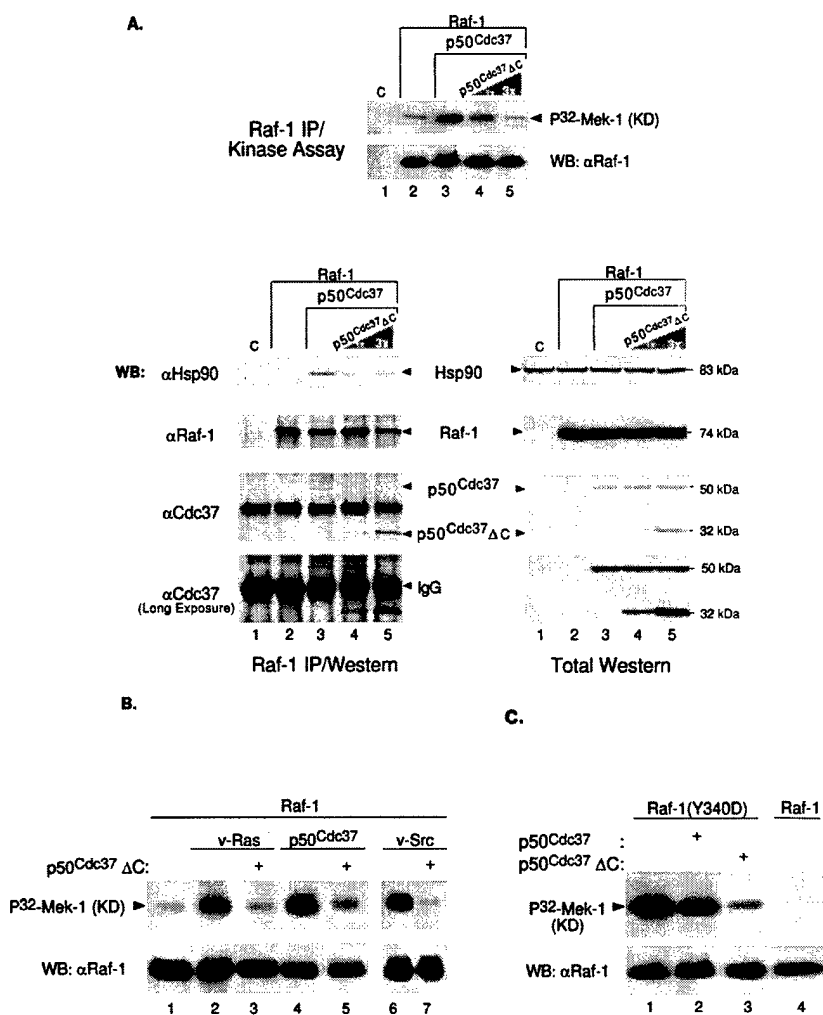


FIG. 5. $p50^{cdc37}\Delta C$ disrupts Raf-1- $p50^{cdc37}$ -Hsp90 complex formation and abrogates $p50^{cdc37}$ -mediated Raf-1 activation. (A) A baculovirus encoding $p50^{cdc37}\Delta C$ mutant was coinfecting at the same MOI or a threefold greater excess MOI with $p50^{cdc37}$ (lanes 4 and 5) and Raf-1. Control Sf9 cultures included an empty-vector baculovirus infection (C; lane 1) and cultures infected with Raf-1 alone or in combination with $p50^{cdc37}$ (lanes 2 and 3, respectively); 48 h postinfection, cells were solubilized in NP-40 LB, and a portion of each of the five extracted cultures was harvested, subjected to anti-Raf-1 IPs under nondenaturing conditions using NP-40 LB (see Materials and Methods), and analyzed either for Raf-1 kinase activity toward kinase-defective (KD) recombinant Mek-1 (top) or for $p50^{cdc37}$ and Hsp90-associated proteins. For assessment of protein expression, control Western blots (WB) of total cellular extracts are shown on the right. (B and C) $p50^{cdc37}\Delta C$ inhibits v-Src and v-Ras activation of Raf-1. (B) Raf-1 was immunoprecipitated and analyzed for its activity toward recombinant inactive Mek-1 from Sf9 cells coinfecting with the indicated baculoviruses as described for Fig. 4A. The effect of v-Src (lanes 6 and 7) was examined in a separate experiment involving a shorter kinase assay exposure. (C) The effect of $p50^{cdc37}\Delta C$ on the constitutively active Raf-1(Y340D) mutant was examined as described above. For comparison, wild-type Raf-1 was subjected to similar analysis and is shown in lane 4.

nase complex (compare lanes 1 and 3). This correlates well with $p50^{cdc37}$ -mediated Raf-1 activation as evidenced by the in vitro kinase activity of immunoprecipitated Raf-1 in a parallel assay (Fig. 6B, top panel). However, in GA-treated replicate cultures, both of these effects were almost entirely eliminated. We conclude, therefore, that under all conditions tested in both mammalian and insect cells, Raf-1 must be able to efficiently complex with both $p50^{cdc37}$ and Hsp90 in order to achieve and/or maintain its activated state.

$p50^{cdc37}$ contributes to the transduction of EGF signals that activate the MAPK cascade via Raf-1. Activated Raf-1 transduces signals to multiple pathways. The best-studied of these is the MAPK pathway. If, therefore, the association of the $p50^{cdc37}$ -Hsp90 complex with Raf-1 contributes to the activa-

tion of Raf-1, the dominant negative mutant $p50^{cdc37}\Delta C$, which disrupts this complex, would be expected to interfere with the transduction of physiological signals from Raf-1 to the MAPK cascade. To test this hypothesis, we overexpressed $p50^{cdc37}\Delta C$ or its full-length $p50^{cdc37}$ counterpart in combination with Raf-1 in Cos-1 cells, using the Targetfect high-efficiency transfection system. Duplicate serum-starved cultures were harvested with or without EGF stimulation, and solubilized cell extracts were then examined by Western blotting with an antibody against activated phospho-MAPK or with control antibodies against transfected Raf-1 or $p50^{cdc37}$ (Fig. 7). The results revealed that in contrast to the wild-type protein (Fig. 7, lanes 3 and 4), transfected $p50^{cdc37}\Delta C$ inhibited EGF-stimulated Raf-1 activation as judged by Raf-1 kinase assay (not

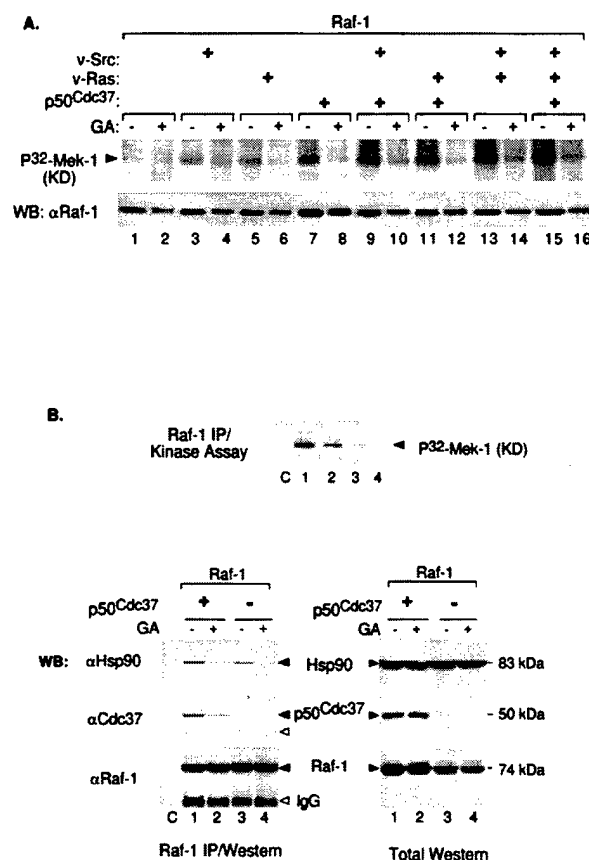


FIG. 6. GA inhibits Raf-1 activation in Sf9 cells by disrupting Raf-1-Hsp90-p50^{cdc37} complex formation. (A) Raf-1 alone or in combination with v-Src, v-Ras, or p50^{cdc37} was expressed in Sf9 cells, incubated for 48 h, immunoprecipitated with anti-Raf-1 polyclonal antisera in RIPA buffer, and tested for in vitro kinase activity. Even-numbered lanes represent parallel cultures treated with GA (2 μg/ml) for 4 h before being harvested and analyzed similarly. Blotted kinase reactions (top panel) were tested for immunoprecipitated Raf-1 protein levels, using rabbit anti-Raf-1 Western blotting (WB) (bottom). Note that GA-treated Raf-1 migrates slower than nontreated samples (bottom) and is severely deficient in phosphorylating recombinant kinase-defective (KD) Mek-1 (top panel). (B) Sf9 cell cultures coinfecting with Raf-1 and p50^{cdc37} or empty-vector baculovirus were each split into two replicate cultures 24 h postinfection; 24 h later, one replicate culture was treated with GA (2 μg/ml) for 2 h while the other was similarly treated with only DMSO diluent as indicated. Cell extracts in NP-40 LB were subjected to Raf-1 IP followed by Raf-1 kinase assay (top panel) or Western blot analysis (bottom left) or, additionally, directly analyzed for respective Raf-1, p50^{cdc37}, or Hsp90 protein expression (lane C is like lane 3 except that immunoprecipitating Raf-1 antibody was omitted). Open arrowheads denote positions of immunoprecipitating anti-Raf-1 antibodies.

shown) and subsequent MAPK activation as determined by detection of dually phosphorylated endogenous Erk-2 with anti-phospho-Erk antibodies (lanes 5 and 6). Thus, not only is the p50^{cdc37} C-terminal mutant unable to support Raf-1 activation, but it also prevents Raf-1-mediated downstream signaling through the MAPK pathway. Thus, GA and p50^{cdc37} ΔC, which target the Hsp90 and p50^{cdc37} components of the Raf-1 activation complex, respectively, produce similar adverse effects: disruption of the native Raf-1 heterocomplex, inhibition of Raf-1 activation, and interruption of signaling to downstream Raf-1 effectors. These findings show that the p50^{cdc37}-Hsp90 complex contributes to the activation of Raf-1 by growth fac-

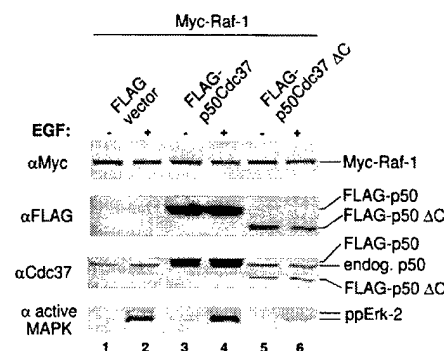


FIG. 7. Dominant negative p50^{cdc37} inhibits MAPK activation. Cos-1 cells transiently transfected by using Targetfect with pMT2-Raf-1 and p50^{cdc37} or p50^{cdc37} ΔC, or with vector alone, were split; one set of duplicates was serum starved, while the other was stimulated with EGF. Solubilized extracts were then analyzed either with anti-active-Erk rabbit antiserum (bottom) or for levels of expression with the indicated antibodies (top three panels).

tors and plays a critical role in the transduction of growth factor-generated Raf-1 signals to the MAPK pathway.

DISCUSSION

Based on observations that both Hsp90 and p50^{cdc37} copurify with various protein kinases, it has been proposed that these two proteins comprise a complex that regulates kinase conformation and activity (4, 28, 53). However, this hypothesis has yet to be examined biochemically. The recent cloning of p50^{cdc37} has allowed us to directly investigate the role of the p50^{cdc37}-Hsp90 complex in the regulation of the Raf-1. We have found that coexpression of p50^{cdc37} with Raf-1 leads to Raf-1 activation and that disruption of the p50^{cdc37}-Hsp90 heterodimer interaction with Raf-1 by either p50^{cdc37} ΔC or GA inhibits Raf-1 activation and signaling through Erk. These results indicate that the concerted action of p50^{cdc37} and Hsp90 on Raf-1 plays a critical role in cell signaling via the Raf-1/Mek/Erk pathway.

Although it has previously been hypothesized that Hsp90 brings p50^{cdc37} into a complex with Raf and Src (29, 67, 79), our analysis indicates that Raf-1-Hsp90 association is for the most part p50^{cdc37} dependent and that p50^{cdc37} is the factor which primarily mediates the Raf-1-p50^{cdc37}-Hsp90 complex formation. More specifically, p50^{cdc37} binds to the catalytic domain of Raf-1 through its N terminus and tethers Hsp90 to Raf-1 through a second domain located at its C-terminal half (Fig. 2D). This finding is consistent with the observation of Stepanova et al. (69) that p50^{cdc37} accumulates Hsp90 to Cdk4, although in this case there were no clear effects on kinase activity. Further support for our conclusion stated above is given by the observation that p50^{cdc37} ΔC associates with Raf-1 even though it cannot bind to Hsp90. Moreover, this mutant prevents the accumulation of Hsp90 into the complex by displacing its endogenous full-length counterpart from Raf-1.

Surprisingly, however, GA disrupts the association of the Hsp90-p50^{cdc37} complex with Raf-1 even though it is known to bind only Hsp90 and fails to dissociate the Hsp90-p50^{cdc37} complex itself. This could be explained in several ways. GA is known to competitively displace ATP and, by binding tightly to Hsp90, to lock the chaperone into its ADP-specific inactive conformation (7, 22, 55, 72). This conformation may prevent complex binding by steric hindrance, since most of p50^{cdc37} is bound to Hsp90. p50^{cdc37} ΔC, in contrast, being unable to bind

Hsp90, would be free to associate with Raf-1. Alternatively, p50^{cdc37} may bind to the GA-Hsp90 complex in such a way that it is no longer able to bind to Raf-1. Thus, both Hsp90 and p50^{cdc37} must be in a functional complex in order to form a productive heterotrimeric complex with Raf-1. In general, however, these results validate experimentally the earlier proposal that Hsp90's specific associations might be mediated through Hsp90-associated cofactors and that pp50, in particular, might function in targeting Hsp90 to v-Src and Raf-1 kinases (6, 52, 53). It is notable that Hsp90 and p50^{cdc37} can sometimes function independently of each other. p50^{cdc37} has not been detected in steroid receptor complexes (54), and we have found that Mek-1 forms a tight complex with p50^{cdc37} that is characteristically devoid of Hsp90 (19a).

Several lines of evidence indicate that p50^{cdc37}-Hsp90 association with Raf-1 is necessary for the Raf-1 kinase activity. First, overexpressed p50^{cdc37}ΔC reduces both Hsp90 association with Raf-1 and Raf-1 kinase activity by competitively displacing wild-type p50^{cdc37} from the Raf-1 complex. Second, GA, an Hsp90-specific inhibitor, blunted Raf-1 activation by serum (Fig. 3), and this inhibition correlated with a dramatic loss of p50^{cdc37}-Hsp90 heterodimers from the kinase. That occupation of the ATP/ADP binding pocket of Hsp90 by GA results in dissociation of the protein from Raf-1 is consistent with the notion that alternating cycles of ATP and ADP binding regulate Hsp90 conformation and, in turn, its ability to mediate the formation of productive signaling heterocomplexes (7, 22, 55, 72). The inhibition by GA was also observed with BXB-Raf-1, a constitutively active N-terminal Raf-1 deletion mutant (3), which consistently binds to p50^{cdc37} and Hsp90 even more strongly than its full-length counterpart (19a). Coupled with our findings that the vast majority of cytoplasmic p50^{cdc37} is sequestered in heterodimeric complexes by Hsp90 and that it is primarily responsible for bringing Hsp90 into the Raf-1 complex, these results suggest that the interface of p50^{cdc37}-Raf-1 interaction is a target of GA action and that GA-induced conformational alteration of the Hsp90-p50^{cdc37} heterodimer either leads to the release of the heterodimer as a whole from Raf-1 or prevents it from rebinding to Raf-1. Freed Raf-1 then becomes subject to accelerated degradation as previously observed by Schulte et al. (60). Interestingly, p50^{cdc37}ΔC binding to Raf-1 excludes Hsp90 from the complex but does not lead, as GA treatment does, to Raf-1 degradation. p50^{cdc37}ΔC further inhibits Raf-1 activation, which also suggests that Hsp90 and p50^{cdc37} play an active and positive role in Raf-1 signaling rather than merely serving to stabilize the kinase.

Strikingly, we have found that p50^{cdc37} itself, upon coinfection in insect cells with Raf-1, results in strong dose-dependent Raf-1 catalytic activity. This activation is even stronger than that observed with v-Ras and only slightly weaker than v-Src-mediated Raf-1 activation. Moreover, p50^{cdc37} was able to enhance the weak v-Src-mediated activation of Raf-1(S621A), a well-characterized conformation-compromised, and thus inactive, Raf-1 mutant. Given that Hsp90, p50^{cdc37}'s partner, is a highly abundant protein, these results suggest that p50^{cdc37} may be a rate-limiting component under conditions of Raf-1 overexpression and may contribute to the formation or stabilization of the active Raf-1 conformational state. As with v-Src and v-Ras, this effect requires phosphorylatable Ser621 for function (46). In contrast, p50^{cdc37} failed to induce further the already high constitutive activity of Raf-1(Y340D), an N-terminal repression-relieved activated Raf-1 mutant (14). One possible interpretation of this result is that p50^{cdc37} enhances Src-mediated phosphorylation and activation of Raf-1, a notion supported by the observed physical and functional inter-

actions between Src kinases and p50^{cdc37} (reference 4 and unpublished results), including their strong synergistic effect on activating Raf-1 activation (Fig. 4). However, our finding that the dominant negative p50^{cdc37} deletion also down-regulates Raf-1(Y340D) (Fig. 5) in a dose-dependent fashion (not shown) indicates that some of the effects of p50^{cdc37}-Hsp90 complex are independent of tyrosine phosphorylation as well. Thus, it is likely that the p50^{cdc37}-Hsp90 complex is further required to maintain the activated Raf-1 kinase in its active conformation. This latter interpretation would be consistent as well with the findings that activated Ras-independent *Drosophila* Raf alleles still require Hsp90 association for constitutive function at the membrane (76). It is not yet known whether the *Drosophila* cdc37 mutation can also suppress this activated Raf allele. This genetic result also indicates that Hsp90 affects Raf-1 activity independently of Raf-1 translocation to the plasma membrane.

Mere addition of purified p50^{cdc37} and Hsp90 to Raf-1 does not activate the kinase in vitro (unpublished observation). Furthermore, it is worth noting that under commonly used kinase assay conditions, Raf-1, precipitated in RIPA buffer and thus presumably stripped of bound p50^{cdc37} and Hsp90, remains active. This finding suggests that p50^{cdc37} and Hsp90 exert their activation role in vivo in conjunction with additional Raf-1 activation factors and do not need to stay associated with Raf-1 in vitro in order for the kinase to remain active; it also argues against a strictly structural role for the p50^{cdc37}-Hsp90 complex in maintaining Raf-1 activity. This observation may also explain why we can detect only a relatively weak associated MAPKKK activity in p50^{cdc37} immunoprecipitates. As with other chaperone proteins, the p50^{cdc37}-Hsp90 complex may interact with Raf-1 in a transient manner and release after catalyzing conformational changes in Raf-1.

Previous work in Raf-1 overexpression systems has suggested that there may be a limiting cytosolic factor which is required for maximal Raf-1 activation (5, 26, 36, 70, 78). Our results suggest that p50^{cdc37} could well be a component of this activity. However, since p50^{cdc37} is more abundant than Raf-1, the ability of p50^{cdc37} overexpression alone to activate endogenous Raf-1 is modest relative to its marked ability to activate coexpressed Raf-1. This finding suggests that in unstimulated cells there may be a stoichiometric inhibitor of Raf-1 signaling whose effects are partially overcome by overexpression of Raf-1. Conceivably, under these conditions, the p50^{cdc37}-Hsp90 complex becomes limiting and overexpressed p50^{cdc37} complexes with the already abundant Hsp90 to reconstitute the Raf-1-p50^{cdc37}-Hsp90 complex and allow activation of the kinase. That the Hsp90-p50^{cdc37} complex would be limiting in these experiments would also be consistent with a model in which the complex serves as a scaffold for Raf-1 oligomerization. There is evidence both that oligomerization can lead to Raf-1 activation (15, 35) and that Hsp90 forms homodimers and oligomers (40, 41, 48, 49). In further support, most of native Raf-1 is found in large (300- to 500-kDa) complexes with p50^{cdc37} and Hsp90, and it is this form of Raf-1 that becomes membrane activated (78).

An important remaining question is whether the associations or the activity of the p50^{cdc37}-Hsp90 complex are subject to regulation. First, we have found increased formation of the Raf-1-p50^{cdc37}-Hsp90 ternary complex after serum stimulation and in response to activated Ras. It is possible that this contributes to the activation of the small fraction of Raf-1 that is reportedly sufficient for effective signaling. This would be consistent as well with our finding that coexpression of p50^{cdc37} with Raf-1 accumulates Hsp90 and activates Raf-1 in a dose-dependent manner. Analogously, Garcia-Cardena et al. (18)

have recently found that extracellular regulators of endothelial nitric oxide synthase induce the rapid recruitment of Hsp90 to the enzyme, resulting in its membrane activation. It is also possible that changes in protein association or modifications of preexisting Raf-1-Hsp90-p50^{cdc37} trimeric complexes are sufficient to cause Raf-1 activation or derepression during cell stimulation. Since both p50^{cdc37} and Hsp90 are phosphoproteins (4, 34, 78, 79), their protein associations within the Raf-1 signalsome could in turn be modulated by phosphorylation. Indeed, phosphorylation-dependent interactions appear to be involved in the regulatory interaction of other kinases with Hsp90, including v-Src (39), Lck (24), and HRI (73, 75). In addition, serum regulation of the phosphorylation state of the Hsp90-p50^{cdc37} complex could play an important role in Raf-1 activation. Alternatively, serum might regulate the nucleotide binding state and conformation of Hsp90 (22, 55, 72) that is associated with p50^{cdc37} and Raf-1 and thereby allosterically regulate its effects on Raf-1. This may occur either through assisting Raf-1 in the conformational transition to the activated state or by allowing it to achieve a configuration where it is competent to respond to upstream activators.

In summary, our findings complement and extend genetic data for *Drosophila* and indicate that the p50^{cdc37}-Hsp90 chaperone complex is essential for signaling through the MAPK pathway at the level of Raf-1. Interestingly, the fact that Raf-1 (71, 77), Hsp90 (54), and, as verified by both mRNA and protein analyses (8, 19a), p50^{cdc37} all involve ubiquitously expressed proteins points to a potentially universal Raf-1-Hsp90-p50^{cdc37} signaling complex. Future experiments will address both the exact nature of Raf-1 regulation by the p50^{cdc37}-Hsp90 heterodimer and whether additional kinases are similarly modulated.

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p50^{cdc37} Binds Directly to the Catalytic Domain of Raf as Well as to a Site on hsp90 That Is Topologically Adjacent to the Tetratricopeptide Repeat Binding Site*

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Several protein kinases (e.g. pp60^{src}, v-Raf) exist in heterocomplexes with hsp90 and a 50-kDa protein that is the mammalian homolog of the yeast cell cycle control protein Cdc37. In contrast, unliganded steroid receptors exist in heterocomplexes with hsp90 and a tetratricopeptide repeat (TPR) domain protein, such as an immunophilin. Although p50^{cdc37} and TPR domain proteins bind directly to hsp90, p50^{cdc37} is not present in native steroid receptor-hsp90 heterocomplexes. To obtain some insight as to how v-Raf selects predominantly hsp90-p50^{cdc37} heterocomplexes, rather than hsp90-TPR protein heterocomplexes, we have examined the binding of p50^{cdc37} to hsp90 and to Raf. We show that p50^{cdc37} exists in separate hsp90 heterocomplexes from the TPR domain proteins and that intact TPR proteins compete for p50^{cdc37} binding to hsp90 but a protein fragment containing a TPR domain does not. This suggests that the binding site for p50^{cdc37} lies topologically adjacent to the TPR acceptor site on the surface of hsp90. Also, we show that p50^{cdc37} binds directly to v-Raf, with the catalytic domain of Raf being sufficient. We propose that the combination of exclusive binding of p50^{cdc37} versus a TPR domain protein to hsp90 plus direct binding of p50^{cdc37} to Raf allows the protein kinase to select for the dominant hsp90-p50^{cdc37} composition that is observed with a variety of protein kinase heterocomplexes immunoadsorbed from cytosols.

A variety of transcription factors and protein kinases have been recovered from cytosols in native heterocomplexes with the abundant, ubiquitous, and essential protein chaperone hsp90¹ (for review, see Refs. 1 and 2). Several other proteins, all of unknown function, have been recovered in steroid receptor-hsp90 and protein kinase-hsp90 heterocomplexes. Steroid receptor-hsp90 heterocomplexes contain one of several

high molecular weight immunophilins or the protein serine/threonine phosphatase PP5 (1). The protein kinase heterocomplexes contain a 50-kDa phosphoprotein that was originally identified as a component of the pp60^{src}-hsp90 heterocomplex (for review, see Refs. 3 and 4).

We and others have recently cloned p50 and identified it as the vertebrate homolog of the yeast cell cycle control protein Cdc37 (5–7).² Genetic evidence suggests that Cdc37 is necessary for Src function (8) and for signaling via the sevenless receptor, a protein tyrosine kinase of *Drosophila* (9). The cyclin-dependent protein kinase Cdk4 is also recovered in heterocomplexes with hsp90 and p50^{cdc37} (6, 10), and we (10) and Stepanova *et al.* (6) have shown that p50^{cdc37} binds directly to Cdk4 as well as to hsp90.

Three high molecular weight immunophilins, FKBP52 (formerly called p59 or hsp56) (11–14), FKBP51 (15–17), and CyP-40 (18, 19), exist in steroid receptor-hsp90 heterocomplexes. Each of the three immunophilins contains three tetratricopeptide repeats (TPRs), which are degenerative sequences of 34 amino acids (20) that are required for binding to hsp90 (21–23). It has been shown that CyP-40 and FKBP52 compete with each other for binding to hsp90 (21, 24), and that these immunophilins exist in independent receptor-hsp90-FKBP52 and receptor-hsp90-CyP-40 heterocomplexes (24, 25). Another component of steroid receptor heterocomplexes is protein phosphatase 5 (PP5) (26), which contains four TPRs (27). Because the binding of FKBP52 and CyP-40 to hsp90 is competed by fragments of PP5 (28) and CyP-40 (29) comprising the TPR domains, we have proposed that there is a common TPR acceptor site on hsp90 that binds a variety of TPR-containing proteins (29).

Although native receptor-hsp90 heterocomplexes contain one of the TPR domain proteins, they do not contain p50^{cdc37} (30, 31). In contrast, immune-isolated Src-hsp90 (3) and Cdk4-hsp90 (6) heterocomplexes contain p50^{cdc37}, but no TPR protein has been identified. We have shown that v-Raf, a serine/threonine kinase involved in signal transduction, also exists in heterocomplexes with hsp90 and p50^{cdc37} (31). Although v-Raf immune pellets have the ability to bind a small amount of [³H]FK506 in a Raf-hsp90-specific manner (32), it seems clear that the majority of v-Raf-hsp90 heterocomplexes contain p50^{cdc37}.

It is not known how the protein that is being chaperoned by hsp90 (i.e. steroid receptor or protein kinase) determines the composition of the heterocomplex. In this report, we provide evidence that p50^{cdc37} binds to hsp90 at a site on its surface that is near the binding site for the TPR domain proteins.

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¹ The abbreviations used are: hsp, heat shock protein; FKBP, FK506 binding protein; CyP, cyclosporin A binding protein; PP5, protein phosphatase 5; TPR, tetratricopeptide repeat; Src, pp60^{src}; Hop, hsp organizer protein (also called p60); PAGE, polyacrylamide gel electrophoresis; TBS, Tris-buffered saline; GST, glutathione S-transferase; TES, 2-[(2-hydroxy-1,1-bis(hydroxymethyl)ethyl)amino]ethanesulfonic acid.

² N. Grammatikakis and B. H. Cochran, unpublished results.

Using FLAG-tagged p50^{cdc37} and PP5, we show that p50^{cdc37} exists in separate hsp90 heterocomplexes from the TPR proteins. In addition to binding to hsp90, p50^{cdc37} binds directly to Raf. It is known that, during the process of Raf-hsp90 heterocomplex assembly, Raf is transiently associated with p60 (also called Hop) (33), which binds to hsp90 via its TPRs (34). p60/Hop is required for assembly of hsp90 heterocomplexes (35), and we show here that p60/Hop competes for the binding of both TPR domain proteins and p50^{cdc37} to hsp90. Our observations are consistent with a model in which dissociation of p60/Hop from the newly formed Raf-hsp90 complex results in an open region on the surface of the hsp90 dimer that can be occupied by either p50^{cdc37} or a TPR protein. With continued exchange binding of p50^{cdc37} and TPR domain proteins to Raf-associated hsp90, Raf-hsp90-p50^{cdc37} complexes are rapidly selected because p50^{cdc37} also binds directly to Raf.

EXPERIMENTAL PROCEDURES

Materials

Untreated rabbit reticulocyte lysate was from Green Hectares (Oregon, WI). ¹²⁵I-Conjugated goat anti-mouse and anti-rabbit IgGs were from NEN Life Science Products. Goat anti-mouse IgG-horseradish peroxidase conjugate, monoclonal nonimmune IgG and IgM, purified rabbit IgG, monoclonal anti-glutathione S-transferase (GST) clone GST-2 ascites, and purified glutathione S-transferase were from Sigma. The AC88 monoclonal IgG against hsp90 was from StressGen (Victoria, British Columbia, Canada). The 3G3 monoclonal IgM against hsp90, and the anti-cyclophilin 40 (COOH-terminal peptide) antibody were from Affinity Bioreagents (Golden, CO). The anti-FLAG M2 monoclonal IgG, M2-agarose, and the FLAG peptide were from IBI (New Haven, CT). The C-12 rabbit anti-Raf-1 IgG was from Santa Cruz Biotechnology (Santa Cruz, CA). The anti-Raf antiserum prepared against the carboxyl-terminal 12 amino acids of human Raf-1 (34) was kindly provided by Dr. Richard Jove (Moffitt Cancer Center, Tampa, FL). The DS14F5 monoclonal antibody against p60/Hop (36) and *Escherichia coli* expressing human p60/Hop were kindly provided by Dr. David Smith (University of Nebraska, Omaha, NE). The XR recombinant pGEX-2T plasmid encoding GST-tagged rabbit FKBP52 (37) was kindly provided by Dr. Jack-Michel Renoir (University of Paris, France). The UPJ56 rabbit antiserum against hsp56 (38) was a kind gift from Dr. Karen Leach (The Upjohn Co., Kalamazoo, MI). The rabbit antiserum against hsp70 and hsp90 (39) was generously provided by Dr. Ettore Appella (National Cancer Institute). Rabbit antiserum to PP5, purified FLAG-PP5, and the FLAG-tagged TPR domain of rat PP5 were prepared as described previously (26).

Methods

Cell Culture and Cytosol Preparation—Sf9 cells and 3Y1 rat fibroblasts stably transfected with DNA encoding v-Raf (31) were harvested, washed once, suspended in 1 volume of HE buffer (10 mM Hepes, pH 7.4, 1 mM EDTA), and ruptured by Dounce homogenization. Homogenates were centrifuged 15 min at 12,000 × g.

Immunoadsorption—Native hsp90 heterocomplexes were immunoadsorbed from 150 μl of rabbit reticulocyte lysate for 2 h at 4 °C with 15 μl of 3G3 antibody prebound to 12 μl of protein A-Sepharose, as described previously (24). Native p60/Hop heterocomplexes were immunoadsorbed from 150 μl of rabbit reticulocyte lysate with DS14F5 antibody against p60 (3%), and FLAG-PP5 or FLAG-p50 was immunoadsorbed with 6 μg of M2 monoclonal antibody against the FLAG epitope. All immunopellets were washed three times by suspension in 1 ml of TEGM buffer (10 mM TES, 50 mM NaCl, 4 mM EDTA, 10% (w/v) glycerol, 20 mM sodium molybdate, pH 7.6), and proteins were resolved by SDS-polyacrylamide gel electrophoresis.

Western Blotting—Immunoblots were probed with 1 μg/ml AC88 for hsp90 (or, in the case of insect hsp90, with 0.1% hsp70/hsp90 antiserum), 0.1% UPJ56 for hsp56, 0.1% PP5 antiserum for PP5, 1 μg/ml M2 monoclonal for the FLAG-proteins, 0.1% DS14F5 for p60/Hop, 0.1% p50 antiserum for p50^{cdc37}, 0.1% anti-Raf antiserum for v-Raf, 0.1% GST ascites for GST-Raf, or 0.1% anti-cyclophilin 40 for CyP-40. The immunoblots were developed with the appropriate horseradish peroxidase-conjugated and/or ¹²⁵I-conjugated counter antibody. Although immunoblots from individual immunoadsorption or competition binding experiments are presented, the experiments have been performed at least three times and corroborating results obtained by immunoadsorption

tion of, or competition by, other proteins are usually presented in other panels of the same figure.

Binding of Proteins to Purified hsp90—Rabbit hsp90 was purified from brain cytosol as described by Hutchison *et al.* (40). Aliquots (30 μl) of purified rabbit hsp90 (1 mg/ml) were immunoadsorbed to 12-μl pellets of protein A-Sepharose precoupled with 15 μl of 3G3 antibody. Pellets were washed twice with 1 ml of HE buffer and suspended in Hepes buffer, pH 7.4, plus 0.1% Nonidet P-40 in a final volume of 100 μl, including 30 μl of the pooled, hsp90-free hydroxylapatite fraction of rabbit brain cytosol containing p60/Hop, PP5, FKBP52, p50^{cdc37}, and CyP-40 prepared exactly as described by Owens-Grillo *et al.* (29). In experiments where binding of proteins to hsp90 was competed with the PP5 TPR domain, 30 μg of purified FLAG-tagged PP5 TPR in 30 μl of 20 mM Hepes, 1 mM dithiothreitol, 150 mM NaCl were added, maintaining the same final incubation volume of 100 μl. In experiments where binding of proteins to hsp90 was competed with bacterially expressed p60/Hop, Sf9-expressed FLAG-PP5 or FLAG-p50^{cdc37}, bacterial lysate, or Sf9 cytosol was preincubated with the immunopellets in a final volume of 30 μl on ice for 20 min with suspension of the pellets by shaking the tubes every 3 min. The hydroxylapatite pool was then added and reaction mixtures were brought up to a final volume of 100 μl, and incubations were maintained on ice for 35 min with suspension of the pellets by shaking the tubes every 3 min. At the end of the incubation, the pellets were washed three times with 1 ml of HEG buffer (10 mM Hepes, pH 7.4, 1 mM EDTA, 10% glycerol), and proteins were resolved by SDS-PAGE and Western blotting.

Expression of p60 and GST-FKBP52 Fusion Protein—Bacterially expressed p60/Hop was prepared as described previously (35). For bacterial lysates containing GST-FKBP52, the expression plasmid containing the cDNA for the 59-kDa rabbit immunophilin subcloned into the *Sma*I site of pGEX-2T prepared by Le Bihan, *et al.* (37) was used to transform *E. coli* strain BL21(DE3). Purification of rabbit FKBP52 was performed by binding the GST-FKBP52 to GSH-agarose and incubation at 4 °C with thrombin, which cleaves at a site between the GST domain and the FKBP52 domain.

Production of the Fusion Protein GST-Raf (COOH Terminus)—For bacterial expression of GST-Raf (COOH terminus), an in-frame deletion of amino acids 26–309 of human c-Raf-1 following digestion with *Pvu*II and *Bgl*II (41), was subcloned into the pGEX-2T bacterial expression vector and in-frame with the GST propeptide to generate pGEXANRaf. The resulting construct was transformed into *E. coli* BL21(DE3). A control construct including GST in fusion with the first 25 amino acids of human c-Raf-1 behaved similarly as GST alone, in that it bound neither to p50^{cdc37} nor to hsp90 (data not shown).

Binding of Purified FLAG-p50^{cdc37} to Raf and GST-Raf (COOH Terminus)—Control *E. coli* and bacteria expressing the GST-tagged Raf (COOH terminus) were sonicated in phosphate-buffered saline, and 50 μl of lysate were immobilized on 15 μl of glutathione-cross-linked agarose. v-Raf was immunoadsorbed from 3Y1 cytosol (200 μl) by rotation with the C-12 rabbit anti-Raf-1 IgG prebound to 8 μl of protein A-Sepharose. The immune pellets were washed two times with 1 ml of TEG plus 0.1% Triton X-100, then two times with TEG (for native Raf heterocomplexes, 20 mM molybdate was present in the wash buffers). The pellets were then suspended in TEG buffer containing 0.5 M NaCl and stripped of Raf-associated hsp90 by heating for 1 h at 30 °C followed by two buffer washes prior to incubation with 30 μl of cytosol from Sf9 cells expressing FLAG-p50^{cdc37}, 40 μl of purified FLAG-p50^{cdc37}, or 45 μl of purified bacterially expressed rabbit FKBP52. Incubations were on ice for 35 min with suspension of the pellets by shaking the tubes every 3 min. At the end of the incubation, the pellets were washed three times with 1 ml of HEG, and proteins were resolved by SDS-PAGE and Western blotting.

Preparation of a Recombinant Baculovirus Expressing FLAG-tagged p50^{cdc37}—The cDNA for p50^{cdc37}, isolated from a human lymphocyte cDNA library through hybridization with the previously described chick cdc37 cDNA homolog (5, 10),² served as template to amplify by polymerase chain reaction the open reading frame, starting from codon 2 and including 285 base pairs of 3'-untranslated sequence. The amplified human p50^{cdc37} cDNA was subcloned into the *Not*I site of pFastBAC1-FLAG, a modified version³ of the baculoviral pFastBAC1 vector (Life Technologies, Inc.), in frame with a FLAG propeptide sequence. The resulting construct was verified by DNA sequencing and subsequently used to generate FLAG-p50^{cdc37} encoding recombinant baculoviruses and high titer stocks, using the BAC-TO-BAC baculovirus expression system from Life Technologies, Inc.

³ N. Grammatikakis, unpublished results.

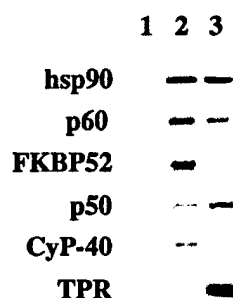


FIG. 1. The PP5 TPR domain does not compete for binding of p50^{cdc37} to hsp90. Protein A-Sepharose pellets linked to 3G3 antibody alone or 3G3 prebound with purified hsp90 were incubated on ice with 30 μ l of the rabbit brain hydroxylapatite pool containing p60/Hop, FKBP52, p50^{cdc37} and CyP-40 (but not hsp90) in the presence or absence of 30 μ g of purified FLAG-tagged TPR domain of PP5. After washing, pellet-associated proteins were resolved by SDS-PAGE and Western blotting. *Lane 1*, 3G3 pellet without hsp90 incubated with hydroxylapatite pool; *lane 2*, 3G3 pellet with bound hsp90 incubated with hydroxylapatite pool; 3G3 pellet with bound hsp90 incubated with hydroxylapatite pool and purified PP5 TPR.

Purification of FLAG-p50^{cdc37} from Sf9 Cells—Sf9 cells (1.8×10^7) were cultured into T-162 cm tissue culture flasks and infected with a baculovirus expressing FLAG-p50^{cdc37} at a multiplicity of infection of 3, then incubated for 2 days at 27 °C. Cytosol was prepared from infected cells and diluted 1:1 with TEG, the nonionic detergent Nonidet P-40 was added to 0.02%, and the diluted cytosol was rotated for 1 h at 4 °C and centrifuged at $100,000 \times g$. FLAG-tagged p50^{cdc37} was then purified using M2-agarose beads (IBI) according to manufacturer's instructions.

Preparation of an Antibody against p50^{cdc37}—Human p50^{cdc37} (amino acids 2–378) expressed as GST fusion protein was purified by GSH-Sepharose chromatography and used to generate p50^{cdc37}-specific antisera in rabbits. Although the rabbit anti-p50^{cdc37} antiserum exhibits a wide reactivity for p50^{cdc37} across species, it does not recognize the endogenous p50^{cdc37} expressed in insect Sf9 host cells.

RESULTS

Competition for Binding of p50^{cdc37} to hsp90—In a previous study (29), we showed that a fragment containing the TPR domains of CyP-40 competed for the binding of FKBP52 and CyP-40 to hsp90. However, the binding of p60/Hop and p50^{cdc37} was not inhibited by the highest achievable level of the CyP-40 TPR fragment. Subsequently, we found that the fragment of PP5 containing its four TPRs bound much more tightly to hsp90 and competed for p60/Hop binding (28). In Fig. 1, we use this tight binding PP5 TPR fragment to compete for the binding of p50^{cdc37} and several TPR domain proteins to hsp90. In this experiment, an immune pellet alone (*lane 1*) or immune pellets prebound with purified hsp90 (*lanes 2 and 3*) were incubated with an hsp90-free hydroxylapatite pool of rabbit brain cytosol (29) that contains p50^{cdc37} as well as p60/Hop, FKBP52, and CyP-40. As shown in *lane 2* (Fig. 1), all four of these proteins bound to hsp90. However, in the presence of the PP5 TPR fragment (*lane 3*) binding of CyP-40 and FKBP52 was blocked and p60/Hop binding was inhibited. The p60/Hop band was probed with ¹²⁵I-labeled counter antibody, excised, and counted to determine the extent of inhibition. The PP5 TPR domain fragment (*lane 3*) reduced the binding of p60/Hop by 65% but it did not compete for the binding of p50^{cdc37} to hsp90 (*cf. lanes 2 and 3*).

In contrast to the TPR domain fragment, intact TPR domain proteins do compete for binding of p50^{cdc37} to hsp90. In the experiment of Fig. 2A, hsp90-bound 3G3 immune pellets were preincubated with buffer (*lane 2*), with lysate from control bacteria (*lane 3*), or with lysate from bacteria expressing p60/Hop (*lane 4*). The pellets were then incubated with the rabbit brain hydroxylapatite pool, and binding of p50^{cdc37} to hsp90

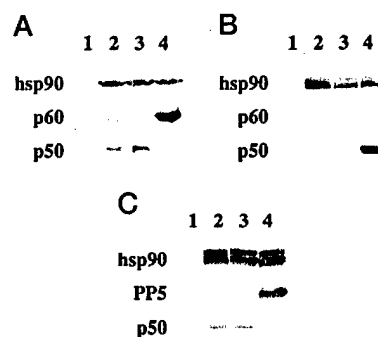


FIG. 2. p50^{cdc37} and TPR proteins compete for the binding of each other to hsp90. A, bacterially expressed p60/Hop competes for binding of p50^{cdc37} to hsp90. Pellets with 3G3 antibody alone or 3G3 prebound with hsp90 were preincubated on ice in the presence of lysate from control bacteria or bacteria expressing p60/Hop, then incubated with the rabbit brain hydroxylapatite pool. *Lane 1*, pellet without hsp90; *lane 2*, hsp90-bound pellet; *lane 3*, hsp90-bound pellet preincubated with control bacterial lysate; *lane 4*, hsp90-bound pellet preincubated with lysate from bacteria expressing p60/Hop. B, Sf9-expressed p50^{cdc37} competes for binding of p60/Hop to hsp90. Pellets were preincubated in the presence of lysate from Sf9 cells transfected with wild-type baculovirus or Sf9 cells expressing FLAG-p50^{cdc37}, then incubated with the rabbit brain hydroxylapatite pool. p50^{cdc37} was detected with the anti-FLAG antibody. *Lane 1*, pellet without hsp90; *lane 2*, hsp90-bound pellet; *lane 3*, hsp90-bound pellet plus control Sf9 lysate; *lane 4*, hsp90-bound pellet plus lysate from Sf9 cells expressing p50^{cdc37}. C, Sf9-expressed PP5 competes for binding of p50^{cdc37} to hsp90. Pellets were treated as in B. *Lane 1*, pellet without hsp90; *lane 2*, hsp90-bound pellet; *lane 3*, hsp90-bound pellet plus control Sf9 lysate; *lane 4*, hsp90-bound pellet plus lysate from Sf9 cells expressing PP5.

was assayed. It is clear from *lane 4* that p60/Hop competes for the binding of p50^{cdc37} to hsp90. In Fig. 2B, hsp90-bound immune pellets were preincubated with lysate from Sf9 cells expressing FLAG-p50^{cdc37} and then incubated with the hydroxylapatite pool. In the presence of the Sf9-expressed p50^{cdc37} (*lane 4*), the binding of p60/Hop to hsp90 was competed. As shown in Fig. 2C, Sf9-expressed FLAG-PP5 also competes for the binding of p50^{cdc37} to hsp90.

The cloning and sequencing of p50^{cdc37} showed that it does not possess a TPR domain (6, 7),² yet intact TPR domain proteins compete for its binding to hsp90. As shown in the experiment of Fig. 1, we have occasionally observed an increase in the amount of p50^{cdc37} binding to hsp90 when the PP5 TPR fragment is present. Such an increase in p50^{cdc37} binding would occur if binding of TPR proteins to the TPR acceptor site on hsp90 prevented access of p50^{cdc37} to its binding site, but the small PP5 TPR fragment did not.

p50^{cdc37} Does Not Exist in Native hsp90 Heterocomplexes with TPR Proteins—These competition data suggest that the binding site for p50^{cdc37} may be close enough to the TPR binding site on the surface of hsp90 such that the binding of a protein to one site blocks access of the other protein to its binding site. If that is true, p50^{cdc37} should not exist in a native hsp90-TPR protein complex unless there is a binding site for each of the proteins on each half of the hsp90 dimer. In which case, immunoadsorption of an hsp90-bound TPR protein should yield not only co-immunoadsorption of some p50^{cdc37} but also of other TPR proteins. In the experiment of Fig. 3, either hsp90 or p60/Hop was immunoadsorbed from rabbit reticulocyte lysate and the washed immune pellets were assayed for coadsorbed proteins. Immunoadsorption of hsp90 (*lane 2*) yielded coadsorption of the four TPR proteins (p60/Hop, PP5, FKBP52, and CyP-40) as well as the non-TPR-containing p50^{cdc37}. Immunoadsorption of p60/Hop (*lane 4*) yielded coadsorption of a substantial amount of hsp90 but no coadsorption of p50^{cdc37} or of other TPR proteins.

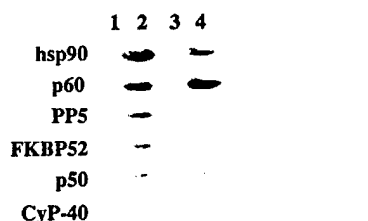


FIG. 3. Native hsp90-p60/Hop heterocomplexes do not contain p50^{cdc37}. Aliquots (150 μ l) of rabbit reticulocyte lysate were immunoadsorbed with the 3G3 antibody against hsp90 or the F5 antibody against p60/Hop. Lane 1, nonimmune IgM; lane 2, 3G3 anti-hsp90; lane 3, nonimmune IgG; lane 4, F5 anti-p60/Hop.

It is possible that p60/Hop is unique among TPR proteins in that it is present in hsp90 heterocomplexes free of p50^{cdc37}. We were unable to test this possibility by coimmunoadsorption of hsp90 heterocomplexes with antibodies directed against p50^{cdc37} or the immunophilins because of their substantial cross-reactivity. The antiserum against p50^{cdc37} (α -p50), for example, reacts on immunoblots with both PP5 and CyP-40 (data not shown). Given the cross-reactivity of the antisera, we used a monoclonal antibody against the FLAG epitope to immunoadsorb Sf9-expressed FLAG-p50^{cdc37} and FLAG-PP5 and assayed for coimmunoadsorbed proteins. In the experiments of Fig. 4, a small amount of Sf9 cytosol with the expressed FLAG-tagged protein was first incubated with rabbit reticulocyte lysate to ensure complete equilibration of the FLAG-p50^{cdc37} and FLAG-PP5 with rabbit hsp90. The FLAG-tagged proteins were then immunoadsorbed with the M2 monoclonal anti-FLAG IgG, and coadsorbed proteins were assayed. It is clear that immunoadsorption of FLAG-p50^{cdc37} yields coadsorption of hsp90, but there is no coadsorption of the rabbit TPR domain proteins PP5 or FKBP52. Similarly, immunoadsorption of FLAG-PP5 yielded coadsorption of hsp90, but there is no coadsorption of p50^{cdc37}. Taken together, these coimmunoadsorption observations and the competition data of the previous section lead us to conclude that p50^{cdc37} can bind to hsp90 when the TPR acceptor site is occupied by the TPR domain fragment of PP5 but not when the site is occupied by an intact TPR domain protein.

p50^{cdc37} Binds Directly to Raf—The exclusive binding of a TPR domain protein or p50^{cdc37} to hsp90 explains why there are separate heterocomplexes but not why the dominant Raf-hsp90 heterocomplex contains p50^{cdc37} instead of an immunophilin. The experiments of Fig. 5 were performed to determine if p50^{cdc37} also binds directly to Raf. In the experiment of Fig. 5A, v-Raf-1 was immunoadsorbed from rat 3Y1 cell cytosol, and the native heterocomplex of Raf with rat hsp90 and p50^{cdc37} is shown in lane 2. Raf was stripped of its associated proteins (lane 4) and the stripped Raf immune pellet was incubated with purified FLAG-p50^{cdc37} (lane 6). As shown in lanes 5 and 6 of Fig. 5A, FLAG-p50^{cdc37} binds to the immune pellet in a manner that is specific for the presence of v-Raf-1.

Fig. 5B shows that the catalytic domain of bacterially derived c-Raf is sufficient for direct p50^{cdc37} binding. In this experiment the GST-tagged c-Raf COOH-terminal fragment expressed in *E. coli* was immobilized on glutathione-agarose and stripped with salt and heating (lane 2). When the immobilized c-Raf catalytic domain was incubated with cytosol from Sf9 cells expressing FLAG-p50^{cdc37}, Raf-p50^{cdc37} complexes were formed (Fig. 5B, lane 4). The immobilized c-Raf catalytic domain fragment also bound purified FLAG-p50^{cdc37} (lane 6) but not purified FKBP52 (lane 8).

It is known that the catalytic domain of c-Raf is sufficient for forming the heterocomplex with hsp90 (31), and these data of Fig. 5 suggest a model in which p50^{cdc37} may contact Raf as

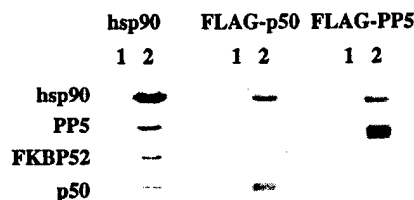


FIG. 4. p50^{cdc37}, PP5 and FKBP52 exist in independent heterocomplexes with hsp90. Aliquots (100 μ l) of rabbit reticulocyte lysate were immunoadsorbed with nonimmune IgM or 3G3 antibody against hsp90. Other 100- μ l aliquots of reticulocyte lysate were incubated for 30 min at 30 $^{\circ}$ C with 10 μ l of Sf9 cytosol overexpressing FLAG-p50^{cdc37} or FLAG-PP5, and then immunoadsorbed with nonimmune IgG or the M2 monoclonal IgG against the FLAG epitope. Lane 1, immunoadsorption with nonimmune antibody; lane 2, immunoadsorption with the antibody indicated at the top of each pair of lanes. Note that the AC88 antibody used to blot hsp90 reacts with rabbit but not insect (Sf9) hsp90 (31). Because PP5 migrates close to FKBP52 on SDS-PAGE, any FKBP52 that might be present in the immune adsorbate would be obscured by the large amount of FLAG-PP5; thus, FKBP52 was not assayed.

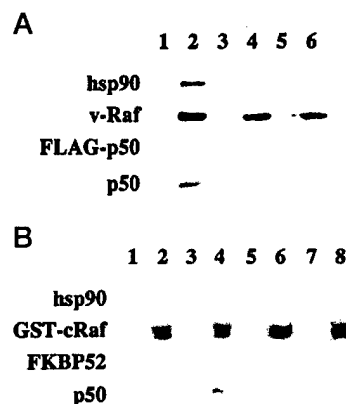


FIG. 5. p50^{cdc37} binds directly to Raf. A, p50^{cdc37} binds directly to v-Raf. Immunoadsorbed v-Raf was stripped of Raf-associated proteins, and two of these stripped samples were incubated with purified FLAG-p50^{cdc37} as described under "Methods." Lane 1, adsorption with nonimmune rabbit IgG; lane 2, native Raf heterocomplex adsorbed with C-12 anti-Raf-1; lane 3, stripped nonimmune pellet; lane 4, stripped immune pellet; lane 5, stripped nonimmune pellet incubated with purified FLAG-p50^{cdc37}; lane 6, stripped immune pellet incubated with purified FLAG-p50^{cdc37}. B, p50^{cdc37} binds directly to the catalytic domain of Raf. The immobilized GST-tagged Raf COOH-terminal fragment was stripped of associated proteins and incubated as described. Lane 1, GST; lane 2, GST-Raf COOH terminus; lanes 3 and 4, immobilized GST (lane 3) or GST-Raf COOH terminus (lane 4) incubated with lysate from Sf9 cells expressing FLAG-p50^{cdc37}; lanes 5 and 6, GST or GST-Raf COOH terminus incubated with purified FLAG-p50^{cdc37}; lanes 7 and 8, GST or GST-Raf COOH terminus incubated with purified FKBP52.

well as hsp90 when it is in the Raf-hsp90-p50^{cdc37} heterocomplex. The direct binding of p50^{cdc37} to Raf could allow the kinase to determine its existence in hsp90 heterocomplexes containing p50^{cdc37} as opposed to immunophilins.

DISCUSSION

Previous studies have shown that FKBP52 and CyP-40 compete with each other for binding to hsp90 (21, 24) and that these two immunophilins and the TPR-containing protein phosphatase, PP5, exist in separate heterocomplexes with hsp90 (28). In this work, we provide evidence that p50^{cdc37} cannot bind to hsp90 when the TPR acceptor site on hsp90 is occupied by one of the TPR domain proteins, such as p60/Hop or PP5. However, p50^{cdc37} does bind to hsp90 when the small TPR domain fragment of PP5 occupies the TPR acceptor site and prevents binding of the TPR domain proteins. These com-

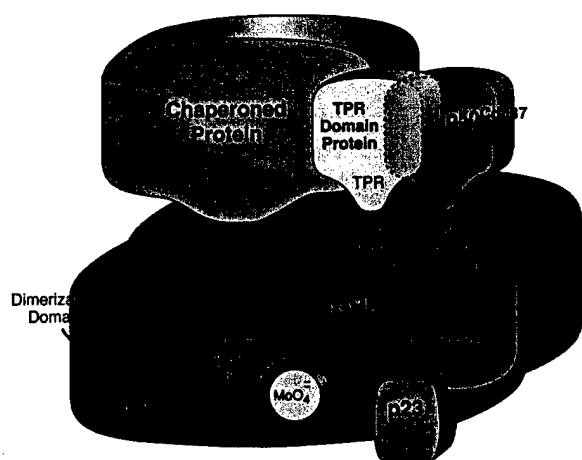


FIG. 6. Model of protein binding sites on hsp90. The chaperoned protein represents any of the many protein kinases or transcription factors that are recovered from cytosols in stable complexes with hsp90. The TPR protein can be p60/Hop, PP5, or any of the immunophilins that have been identified in transcription factor-hsp90 heterocomplexes. To date, $p50^{cdc37}$ has been recovered only with protein kinase-hsp90 heterocomplexes. Molybdate (MoO_4^{2-}), which stabilizes hsp90 in its ATP-dependent conformation (50), interacts with the nucleotide binding site.

petition data suggest that the $p50^{cdc37}$ binds to a site on the surface of hsp90 that is close to the TPR binding site and that binding of a protein to one site may block binding of a protein to the other site.

It could be argued that binding of a protein, such as p60/Hop, PP5, or an immunophilin, to the TPR binding site on hsp90 influenced the conformation of hsp90 such that the affinity of a $p50^{cdc37}$ binding site located at some distance from the TPR binding site was reduced. However, the fact that binding of the PP5 TPR fragment to hsp90, if not augmenting, at least does not reduce the binding of $p50^{cdc37}$ argues against such an allosteric effect. Thus, we propose that $p50^{cdc37}$ binds to a site on hsp90 that is topologically adjacent to the TPR binding site, and at any instant in time, an hsp90 heterocomplex contains either $p50^{cdc37}$ or one of the TPR domain proteins.

Although hsp90 is present in cytosols as a dimer, it is likely that only one molecule of $p50^{cdc37}$ or TPR domain protein can be bound by the dimer. In the event that independent binding sites were available on each dimer, we should have recovered mixed complexes in which immunoadsorption of one TPR protein from cytosol yields coimmunoadsorption of other TPR proteins and $p50^{cdc37}$. A stoichiometry in which one of these proteins is bound per hsp90 dimer is consistent with careful cross-linking studies of Gehring and his co-workers (42–44), who established a stoichiometry for untransformed steroid receptor heterocomplexes of one steroid-binding protein, two molecules of hsp90, and one molecule of immunophilin. However, it must be emphasized that the stoichiometry of hsp90-immunophilin and hsp90- $p50^{cdc37}$ complexes has not been determined directly in the absence of receptors or protein kinases, and the stoichiometry in two-protein *versus* the three-protein complexes could be different.

hsp90 has been found in complex with a confusing variety of proteins, and the model shown in Fig. 6 is presented to sort out established binding domains on the surface of hsp90. More than a dozen transcription factors and more than a dozen protein kinases have been reported to be in heterocomplex with hsp90 (see Table I in Ref. 1 for summary). These proteins are represented by the chaperoned protein in Fig. 6, and they must bind to a common domain (chaperoning domain) on hsp90 which appears to be located in its COOH-terminal half (45, 46).

Under nondenaturing conditions, hsp90 purifies as a dimer, with the dimerization site likely lying in a COOH-terminal region (47). The NH_2 -terminal domain (amino acids 1–221) of hsp90 contains a nucleotide binding site (48, 49). Binding of p23 to the ATP-dependent conformation of hsp90 requires regions outside of the 1–221 domain, but on the basis of the observations of Toft and his co-workers (49, 50), it is reasonable to predict that, in the three-dimensional structure of hsp90, the nucleotide binding domain (ATP/ADP switch domain), the p23 binding site, and the chaperoning domain are situated close to each other, forming an active center that determines a conformational change in the chaperoned protein.

The TPR binding domain of hsp90 is required for the binding p60/Hop (34), which in turn is required for steroid receptor-hsp90 heterocomplex assembly (35) and dissociates from hsp90 during the assembly process (51). Mature steroid receptor heterocomplexes have been reported to contain FKBP51, FKBP52, CyP-40, or PP5 bound to this TPR binding site (1, 2). Only one of these TPR proteins exists in a receptor-hsp90 heterocomplex at any time (24, 25). However, because binding of TPR proteins to the TPR binding site on hsp90 is a reversible process, over time, a single receptor-hsp90 heterocomplex may be associated with PP5 and any of the TPR domain immunophilins. A 38-kDa FKBP homolog with three TPR domains called ARA3 has been isolated with dioxin (Ah) receptor-hsp90 complexes (52). In addition to binding to hsp90, ARA3 appears to bind to the dioxin receptor directly (52), and there is indirect evidence that FKBP52 may contact the transformed glucocorticoid receptor (53). Thus, in Fig. 6, the TPR binding site on hsp90 has been placed such that the TPR protein that occupies the site may also contact the chaperoned protein.

The evidence of this study suggests that the $p50^{cdc37}$ component of protein kinase-hsp90 heterocomplexes binds, *in vitro*, to a site that is topologically adjacent to the TPR binding site on hsp90 but that $p50^{cdc37}$ and a TPR domain protein may not be able to bind to the same hsp90 dimer. The dashed borders of the TPR domain protein and $p50^{cdc37}$ in Fig. 6 indicate the overlapping space occupied by both proteins that accounts for their mutual competition for binding to hsp90. Because $p50^{cdc37}$ binds directly to Raf (Fig. 5) and to Cdk4 (6, 10), it has also been positioned such that it could contact the chaperoned protein as well as hsp90.

In the dynamic state when Raf-hsp90 complexes are being assembled, dissociation of the p60/Hop component of the assembly machinery would expose on hsp90 both the binding site for TPR domains and the adjacent binding site for $p50^{cdc37}$. As both the TPR domain proteins and $p50^{cdc37}$ bind in a readily reversible manner to their respective sites on hsp90, simultaneous binding of $p50^{cdc37}$ directly to Raf should rapidly select for Raf-hsp90- $p50^{cdc37}$ complexes, which is the composition of native Raf-hsp90 heterocomplexes isolated from cytosols (31). Thus, the combination of exclusive binding of $p50^{cdc37}$ *versus* a TPR domain protein to hsp90 plus direct binding of $p50^{cdc37}$ to Raf allow the protein kinase to determine the dominant heterocomplex composition.

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ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio Induction relative to 76n cell line)
W06980	-	0.303	0.063	0.302	1.535	0.171	1.275	
AA146773	(2'-5') oligoadenylate synthetase E	0.194	0.246	0.212	-0.090	0.800	1.112	
AA833997	14-3-3 PROTEIN TAU	0.176	0.334	0.036	0.127	0.803	0.554	
AA775223	15-HYDROXYPROSTAGLANDIN DEHYDROGENASE	-0.028	-0.055	-0.080	0.591	-0.262	0.869	
AA464970	1-PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE PHOSPHODIESTERASE BETA 2	-0.319	-0.151	-0.134	-1.089	-0.508	0.584	
AA846573	1-PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE PHOSPHODIESTERASE BETA 3	-0.498	0.075	-0.408	-0.611	-0.326	0.961	
AA678065	2,3-bisphosphoglycerate mutase	-0.210	-0.244	-0.191	-0.285	-0.259	1.269	
AA088837	26S PROTEASE REGULATORY SUBUNIT 4	-0.543	-0.077	0.024	0.255	0.400	0.793	
AA251770	26S PROTEASE REGULATORY SUBUNIT 7	0.220	0.554	-0.178	1.239	0.740	0.981	
AA464557	26S PROTEASOM REGULATORY SUBUNIT P31	0.135	0.668	0.335	0.641	0.436	0.810	
AA779417	3-HYDROXY-3-METHYLGLUTARYL-COENZYME A REDUCTASE	0.906	0.742	0.404	0.144	0.603	0.894	
T80846	3-HYDROXYANTHRANILATE 3,4-DIOXYGENASE	0.620	1.535	1.007	-0.098	0.885	1.137	
AA458779	3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase (hydroxymethylglutaricaciduria)	-1.046	-0.400	-0.440	-0.224	-0.823	0.536	
AA629987	40 KD PEPTIDYL-PROLYL CIS-TRANS ISOMERASE	-0.623	-0.390	-0.469	-0.927	-1.019	0.652	
AA872341	40S RIBOSOMAL PROTEIN S15A	2.261	0.241	0.835	1.562	2.252	0.798	
AA634008	40S RIBOSOMAL PROTEIN S23	0.105	0.044	0.394	-0.191	0.593	0.644	
AA416759	40S RIBOSOMAL PROTEIN S27	-0.513	-0.220	0.376	0.378	-0.173	1.114	
AA683050	40S RIBOSOMAL PROTEIN S8	-0.009	0.013	0.166	-0.003	0.966	1.107	
AA010605	4-hydroxyphenylpyruvate dioxygenase	0.414	0.245	0.331	0.385	0.726	1.036	
AA404619	5' nucleotidase (CD73)	-0.030	0.349	-0.043	-0.328	0.062	0.936	
R60343	5' nucleotidase (CD73)	-0.253	-0.123	0.053	0.053	0.207	0.879	
AA424996	5,6-DIHYDROXYINDOLE-2-CARBOXYLIC ACID OXIDASE PRECURSOR	0.460	0.372	0.242	-0.018	0.280	0.931	
R55130	5-HT2AR	-1.358	-1.233	-1.011	-1.345	-1.475	0.710	
N47111	5-hydroxytryptamine (serotonin) receptor 2C	0.248	0.763	-0.138	0.022	0.203	0.516	
AA703169	5-hydroxytryptamine (serotonin) receptor 3	1.441	1.174	0.632	0.816	1.214	0.450	
N36174	5-HYDROXYTRYPTAMINE 2B RECEPTOR	0.256	0.119	0.464	-0.203	0.472	0.876	
T49652	5-LIPOXYGENASE ACTIVATING PROTEIN	0.294	0.255	-0.048	0.284	-0.084	1.557	
AA233650	5-methyltetrahydrofolate-homocysteine methyltransferase	0.447	0.082	0.754	0.496	0.071	2.293	
AA459104	60S RIBOSOMAL PROTEIN L13	-0.495	-0.350	-0.355	-0.224	-0.129	1.370	
AA775874	60S RIBOSOMAL PROTEIN L18	0.232	0.345	0.535	0.447	0.472	1.318	
AA633768	60S RIBOSOMAL PROTEIN L24	1.069	0.545	1.014	0.174	1.123	0.648	
AA775364	60S RIBOSOMAL PROTEIN L30	0.392	-0.118	0.468	0.011	0.706	0.632	
R87642	60S RIBOSOMAL PROTEIN L34	0.384	0.422	0.265	0.492	0.631	0.537	
AA490011	60S RIBOSOMAL PROTEIN L38	0.562	0.302	0.688	0.484	0.920	0.391	
AA441933	64 KD AUTOANTIGEN D1	-0.336	0.117	0.123	0.452	0.133	0.458	
AA708798	65 KD YES-ASSOCIATED PROTEIN	0.010	0.208	0.310	0.550	0.681	0.647	
AA491302	69 KD ISLET CELL AUTOANTIGEN	0.085	0.270	0.223	-0.415	0.117	0.573	
AA877347	6-PYRUVOL TETRAHYDROBIPTERIN SYNTHASE	-0.288	0.211	0.157	-0.155	0.344	1.070	
AA459909	6-pyruvoyl-tetrahydropterin synthase/dimerization cofactor of hepatocyte nuclear factor 1 alpha (TCF1)	0.249	0.167	0.431	0.079	0.276	0.929	
N63940	ACETYLCHOLINESTERASE PRECURSOR	0.132	-0.063	-0.028	0.068	0.621	0.794	
AA444009	Acid alpha-glucosidase	1.122	0.404	0.500	0.390	0.895	1.266	
AA490855	Acid finger protein ZNF173	0.548	0.005	0.202	-0.161	0.635	0.568	
W45146	Acid phosphatase 1, soluble	0.627	0.460	0.586	0.192	0.906	0.572	
T48864	Acid phosphatase 2, lysosomal	0.559	0.344	-0.120	0.019	-0.110	-0.026	
R08917	Acid phosphatase type 5	0.669	0.440	0.097	0.271	0.607	0.304	
W44454	Aconitase 2, mitochondrial	0.295	-0.083	0.027	-0.008	0.118	0.289	
AA625888	ACROSIN-TRYPSIN INHIBITOR II PRECURSOR	0.074	-0.025	0.385	0.038	0.260	0.570	
AA732783	Acrosomal vesicle protein 1	-0.201	0.007	0.027	0.285	0.042	0.508	
AA424824	Actin depolymerizing factor [human, fetal brain, mRNA, 1452 nt]	-0.206	0.106	0.201	0.136	0.154	0.356	
AA026603	Actin, alpha 1, skeletal muscle	0.899	0.470	0.022	-0.043	0.281	0.868	
AA634006	Actin, alpha 2, smooth muscle, aorta	0.669	0.629	0.379	0.405	0.241	0.742	
AA196000	Actin, alpha-3	0.558	0.256	0.396	-0.431	-0.054	0.857	
R39862	Activated leucocyte cell adhesion molecule	0.234	0.456	0.009	0.062	0.209	0.366	
H21042	Activating transcription factor 3	0.704	0.550	0.428	0.275	1.237	-0.124	
N99003	Active BCR-related gene	0.012	-0.019	-0.259	-0.455	-0.026	-0.441	
AA125981	Activin A receptor, type II	0.162	0.398	0.218	0.317	0.784	-0.152	
H95792	Acyl-coA dehydrogenase	-0.809	-0.155	-0.204	-0.357	-0.730	0.368	
AA676663	Acyl-Coenzyme A dehydrogenase, C-2 to C-3 short chain	0.703	0.551	0.375	0.455	0.549	0.718	
N70794	Acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain	-0.147	-0.179	-0.436	-0.505	0.207	0.756	
R66006	Acyl-Coenzyme A dehydrogenase, long chain	0.232	0.723	0.143	0.042	0.360	0.878	
AA464163	Acyl-Coenzyme A dehydrogenase, very long chain	0.487	0.551	0.208	0.406	0.359	1.205	
T65864	Acylglycyl hydrolase (neutrophil)	0.100	-0.162	-0.661	-0.322	-0.357	1.223	
W80489	ACYLPHOSPHATASE, ORGAN-COMMON TYPE ISOZYME	-0.066	0.318	-0.240	0.078	-0.194	1.303	
H41489	Adaptin, beta 1 (beta prime)	0.067	0.389	-0.225	-0.079	0.050	0.658	
N53485	Adducin 1 (alpha)	0.297	0.887	0.226	-0.019	0.168	0.179	
AA019320	Adducin 2 (beta) (alternative products)	0.241	0.614	-0.092	0.147	0.400	0.315	
AA461325	Adducin 3 (gamma)	0.079	0.593	-0.071	-0.073	0.548	0.329	
AA404486	Adenine nucleotide translocator 2 (fibroblast)	0.534	0.132	-0.150	-0.083	0.232	0.202	
AA663439	Adenine nucleotide translocator 3 (liver)	0.277	0.270	0.294	0.385	0.506	0.974	
AA455997	Adenomatosis polyposis coli	-0.544	0.001	-0.709	-0.556	-0.696	0.370	
AA055350	Adenosine A2b receptor	-0.075	0.489	-0.001	-0.251	0.307	0.491	
AA683578	ADENOSINE DEAMINASE	-0.588	-0.311	-0.040	-0.188	-0.201	0.908	
R12473	Adenosine kinase	0.242	0.675	-0.277	-0.250	-0.323	1.067	
R01733	Adenosine monophosphate deaminase (isoform E)	0.373	0.477	0.024	-0.049	-0.021	0.991	
AA086476	Adenosine monophosphate deaminase 1 (isoform M)	0.087	-0.277	-0.338	-0.444	-0.814	0.612	
N57553	Adenosine receptor A2	0.153	-0.583	0.045	-0.471	0.294	0.313	
AA863086	Adenosine receptor A3	-0.006	0.075	-0.221	-0.219	0.189	0.656	
AA772803	Adenylate cyclase activating polypeptide 1 (pituitary)	0.471	0.663	0.797	0.110	-0.104	0.914	
N45141	ADENYLATE CYCLASE, TYPE II	0.504	0.719	0.060	0.366	0.757	0.752	
W23690	Adenylate kinase 1	0.296	0.141	0.009	-0.042	0.532	0.648	
H09730	Adenylate kinase 2 (adk2)	0.033	-0.040	0.052	-0.277	0.350	0.670	
AA455931	Adenylosuccinate lyase	0.374	0.628	0.117	0.055	0.091	0.610	
AA431414	Adenylosuccinate synthase	-0.305	0.149	0.306	0.367	-0.004	0.957	
AA116125	ADP-ATP CARRIER PROTEIN, HEART/SKELETAL MUSCLE ISOFORM T1	-0.068	0.477	-0.461	-0.071	0.045	1.126	
W45572	ADP-ribosylation factor 1	1.228	1.189	-0.144	0.072	0.393	0.549	
AA670422	ADP-ribosylation factor 3	0.120	0.189	0.541	-0.203	-0.461	0.637	
T71316	ADP-ribosylation factor 4	-0.617	0.020	-0.160	0.367	-0.079	0.747	
H15085	ADP-ribosylation factor 4-like	0.110	0.024	-0.204	-0.178	0.238	0.394	
AA629584	ADP-ribosylation factor 5	-0.166	0.184	-0.329	0.027	-0.278	0.207	
AA012867	ADP-ribosylation factor 6	-0.084	-0.012	-0.427	-0.132	0.572	0.659	
N51280	ADP-ribosylation factor like 1	-0.373	0.017	0.078	-0.180	-0.148	0.596	
AA700172	ADP-RIBOSYLATION FACTOR-LIKE PROTEIN 2	-0.175	-0.438	-0.013	-0.541	-0.073	-0.079	
AA189050	ADP-ribosyltransferase (NAD+, poly (ADP-ribose) polymerase)	0.075	0.440	0.013	0.255	0.493	0.968	
AA701996	ADRENAL SPECIFIC 30 KD PROTEIN	0.456	0.365	0.050	0.129	0.461	0.555	
R88247	Adrenergic, beta, receptor kinase 1	0.467	0.694	0.211	0.208	0.086	0.802	
H90431	Adrenergic, beta-2-, receptor, surface	0.014	-0.154	-0.268	-0.419	-0.147	0.648	
AA187349	ADRENODOXIN PRECURSOR	-0.265	0.203	-0.182	0.178	-0.246	0.474	
AA46120	ADRENOMEDULLIN PRECURSOR	-0.112	0.491	0.222	0.327	0.110	0.052	
W74536	Advanced glycosylation end product-specific receptor)	0.028	0.498	-0.265	-0.120	0.212	0.653	
AA443284	AF-9 PROTEIN	-0.304	0.081	-0.391	-0.365	0.280	0.271	
N57766	Agammaglobulinaemia protein-tyrosine kinase atk	2.550	2.222	1.184	0.556	1.762	0.761	
AA025940	AH-receptor	-0.742	-0.304	-0.199	-0.358	-0.166	0.099	
N63107	A-KINASE ANCHOR PROTEIN 79	1.402	0.131	0.443	0.043	0.796	-0.193	
N57872	Alanine-glyoxylate aminotransferase (oxalosis I; hyperoxaluria I; glycolicaciduria; serine-pyruvate amin	0.884	0.850	0.018	0.132	0.319	1.054	
AA156571	Alanil-IRNA synthetase	1.445	0.480	1.487	0.588	0.838	0.050	
AA630354	Albumin D-box binding protein	0.333	0.234	0.070	0.092	0.126	-0.356	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
N93428	Alcohol dehydrogenase 2 (class I), beta polypeptide	0.637	0.493	-0.753	-0.396	-0.884	0.497	
AA007395	Alcohol dehydrogenase 4 (class II), pi polypeptide	0.323	0.808	0.287	0.936	0.259	0.601	
AA453776	Alcohol dehydrogenase 5 chi subunit (class III)	0.392	0.847	-0.137	-0.242	-0.036	-0.084	
AA664101	Aldehyde dehydrogenase 1, soluble	0.151	0.704	0.022	0.328	0.243	-0.533	
AA633569	Aldehyde dehydrogenase 10 (fatty aldehyde dehydrogenase)	0.658	0.538	0.587	1.432	0.047	0.310	
AA455235	Aldehyde dehydrogenase 6	0.545	0.626	0.877	1.339	0.897	0.712	
N93686	Aldehyde dehydrogenase 7	-0.451	-0.223	-0.267	0.187	0.024	0.669	
R46816	Aldehyde dehydrogenase 7 (NOTE: redefinition of symbol)	0.365	0.412	0.151	-0.123	-0.033	-0.367	
AA443630	Aldehyde dehydrogenase 8	0.794	0.757	0.553	0.140	0.108	1.037	
R93551	ALDEHYDE DEHYDROGENASE, MITOCHONDRIAL X PRECURSOR	0.226	0.518	0.068	0.014	0.743	0.363	
AA775241	Aldolase A	-0.070	-0.234	0.156	0.131	0.051	-0.134	
H72098	Aldolase B, fructose-bisphosphate	0.144	1.280	0.234	-0.074	0.423	0.219	
R39463	Aldolase C, fructose-bisphosphate	0.430	0.516	0.163	0.115	0.230	0.405	
AA190871	Alkaline phosphatase, intestinal	-0.481	-0.108	0.218	-0.354	-0.023	0.288	
AA873885	Alkaline phosphatase, liver/bone/kidney	1.589	1.393	2.053	0.673	1.717	0.836	
AA150487	Alkaline phosphatase, placental (Regan isozyme)	-0.546	-0.060	-0.231	0.243	-0.149	0.760	
W69954	Allograft inflammatory factor 1	0.072	-0.037	0.107	-0.368	0.374	0.768	
H95633	ALPHA CRYSTALLIN A CHAIN	-0.105	0.162	0.113	0.106	0.585	0.715	
AA454175	Alpha mannosidase II isozyme	-0.188	0.494	-0.043	0.495	0.041	-0.117	
H23235	ALPHA PLATELET-DERIVED GROWTH FACTOR RECEPTOR PRECURSOR	0.387	0.716	0.113	-0.497	-0.211	0.837	
T98612	Alpha-1 type 3 collagen	0.333	0.397	0.054	-0.162	-0.100	0.254	
AA598507	Alpha-1 type VII collagen	0.818	0.888	0.878	0.408	1.426	0.149	
R54968	Alpha-1 type XVI collagen	0.303	0.563	0.072	0.813	1.258	-0.125	
R62227	Alpha-2-HS glycoprotein alpha and beta chain	0.528	-0.135	0.264	0.432	1.170	0.320	
AA775447	ALPHA-2-MACROGLOBULIN PRECURSOR	-0.366	0.026	-0.155	0.463	-0.461	0.626	
T68859	Alpha-2-plasmin inhibitor (alpha-2-Pi)	-0.277	-0.062	-0.054	-0.005	-0.160	0.568	
AA495869	ALPHA-ACTININ 1, CYTOSKELETAL ISOFORM	0.312	0.222	0.317	0.952	0.878	0.718	
AA454854	ALPHA-AMYLASE 2B PRECURSOR	-0.235	0.027	0.259	0.147	0.463	0.687	
AA456850	ALPHA-CENTRACTIN	-0.558	-0.156	0.068	0.239	0.313	0.436	
T59043	Alpha-fetoprotein	-0.228	1.308	-0.408	0.527	0.276	1.014	
AA251784	ALPHA-GALACTOSIDASE A PRECURSOR	0.195	0.354	0.282	0.144	0.142	0.529	
AA490256	Alternative guanine nucleotide-binding regulatory protein (G) alpha-inhibitory-subunit	-0.135	-0.001	-0.121	-0.150	-0.142	0.040	
W42849	ALZHEIMER'S DISEASE AMYLOID A4 PROTEIN PRECURSOR	0.334	0.528	0.294	0.222	0.671	0.188	
T46924	Amiloride binding protein 1 (amine oxidase (copper-containing))	-0.585	0.149	0.111	-0.331	0.322	-0.091	
N50959	Amine oxidase, copper containing 2 (retina-specific)	0.203	0.193	0.258	-0.032	0.349	0.204	
AA845584	Amino acid transporter, cationic 2	0.022	0.681	-0.202	0.180	0.103	0.639	
AA402915	AMINOACYLASE-1	1.018	0.487	1.245	1.419	1.368	0.185	
AA447761	Aminolevulinatase, delta-, synthase 1	-0.383	-0.213	-0.105	0.146	-0.114	0.351	
AA406485	Aminolevulinatase, delta-, synthase 2 (sideroblastic/hypochromic anemia)	-0.001	-0.113	-0.092	0.236	0.372	0.602	
AA485376	AMP DEAMINASE 2	-0.197	0.090	0.361	0.583	-0.003	0.792	
H06483	Amphiphysin (128kD autoantigen)	-0.626	-0.538	-0.105	0.076	-0.680	0.625	
AA857163	Amphiregulin (schwannoma-derived growth factor)	0.243	1.153	0.168	0.112	1.761	1.024	
AA484818	Amylase, alpha 2A; pancreatic	-0.697	-0.323	-0.194	-0.277	0.206	0.645	
AA668425	Amylo-1,6-glucosidase, 4-alpha-glucanotransferase (glycogen debranching enzyme, glycogen storage)	-0.374	0.393	-0.052	0.637	0.530	0.320	
H89517	Amyloid beta (A4) precursor-like protein 2	0.016	-0.359	-0.078	-0.175	0.137	-0.006	
R98019	Amyloid P component, serum	-0.152	0.047	0.117	0.503	0.020	0.064	
AA430524	ANGIOTENSIN-CONVERTING ENZYME PRECURSOR, SOMATIC	0.306	0.619	0.415	0.702	0.433	0.543	
AA464755	Ankyrin 1, erythrocytic	0.024	0.206	-0.202	-0.268	-0.484	0.768	
AA782337	Ankyrin 2 (neuronal)	-0.193	0.352	0.535	-0.278	-0.472	-0.019	
AA677185	Ankyrin G	-0.327	0.198	0.098	0.562	0.591	-0.390	
H63077	Annexin I (lipocortin I)	-0.018	0.360	-0.509	0.005	-0.293	-0.359	
AA19015	Annexin IV (placental anticoagulant protein II)	0.360	0.810	0.308	0.759	0.822	0.538	
AA451895	Annexin V (endonexin II)	-0.715	-0.335	0.022	0.463	0.157	0.438	
AA872001	Annexin VI (p68)	-0.480	-0.210	-0.033	-0.553	-0.043	0.772	
H15446	Annexin VII (synexin)	-0.195	-0.242	0.190	0.099	-0.330	-0.261	
AA235002	Annexin VIII	-0.499	-0.209	0.084	0.293	-0.332	0.190	
AA464982	Annexin XI (56kD autoantigen)	-0.327	-0.065	0.052	0.360	-0.252	-0.175	
AA884167	ANNEXIN XIII	-0.183	0.523	0.457	0.465	0.174	0.383	
AA937895	Antigen identified by monoclonal antibodies 12E7, F21 and O13	1.113	0.386	0.319	1.138	1.935	0.787	
AA630794	Antigen identified by monoclonal antibodies 4F2, TRA1.10, TROP4, and T43	-0.562	-0.159	0.038	0.520	0.250	0.810	
AA428264	Antigen identified by monoclonal antibody KI-67	-0.407	-0.274	0.071	0.264	-0.394	0.793	
AA487429	ANTIGEN PEPTIDE TRANSPORTER 1	2.399	0.871	0.353	1.620	0.893	0.291	
AA683520	ANTILEUKOPROTEINASE 1 PRECURSOR	0.854	0.920	0.714	0.997	0.550	0.578	
AA102646	Antiquitin	-0.067	-0.169	-0.055	-0.188	-0.310	0.644	
T62060	Antithrombin III	0.140	0.271	0.343	0.243	0.042	0.778	
AA478273	APEX nuclease (multifunctional DNA repair enzyme)	0.117	0.052	0.336	-0.183	0.041	0.419	
H49455	Apical protein (Xenopus laevis-like)	-0.225	-0.094	0.146	0.296	-0.278	0.150	
AA156560	APK1 antigen	1.040	1.237	0.497	0.935	0.394	0.348	
AA676955	Aplysia ras-related homolog 12	0.276	-0.160	-0.323	-0.465	-0.262	0.644	
H93332	Apolipoprotein B (including Ag(x) antigen)	0.148	-0.254	-0.071	0.516	-0.362	0.867	
AA873159	Apolipoprotein C-I	-0.309	0.189	-0.199	-0.262	0.458	0.859	
AA454580	Apolipoprotein C-II	0.023	0.054	-0.487	0.252	0.018	0.715	
N53169	Apolipoprotein C-III	-0.113	-0.328	-0.066	0.211	-0.459	0.766	
T71887	Apolipoprotein C-IV	0.634	1.199	0.586	0.326	0.350	0.702	
AA457084	Apolipoprotein D	0.122	0.509	0.814	1.440	0.111	0.724	
AA293571	Apoptosis (APO-1) antigen 1	0.381	1.023	0.507	1.467	0.634	0.655	
N46843	Aquaporin 4	0.307	0.452	0.016	0.189	0.449	0.783	
AA496539	Aquaporin 5	0.153	0.247	0.243	-0.016	-0.082	1.229	
H27752	Aquaporin 9	-0.451	-0.263	-0.586	-0.128	0.657	0.982	
H24316	AQUAPORIN-CHIP	-0.073	0.095	0.230	0.394	0.215	0.480	
T97276	Arachidonate 12-lipoxygenase	0.499	0.111	0.101	0.264	0.373	0.174	
H51574	Arachidonate 5-lipoxygenase	0.131	0.162	0.146	-0.072	-0.421	0.582	
AA598401	Archain	0.621	0.537	0.198	-0.290	0.806	0.589	
AA447741	Arginase, liver	-0.122	0.096	0.022	-0.150	-0.397	0.843	
H17612	Arginase, type II (non-hepatic)	0.568	0.792	0.058	0.300	0.371	0.670	
AA679422	Arginine carboxypeptidase (carboxypeptidase N)	0.325	0.480	0.309	0.253	0.463	-0.056	
AA448190	Arginine vasopressin receptor 1 (AVPR1)	0.130	0.244	0.093	0.272	-0.144	0.884	
AA486741	Argininosuccinate lyase	0.118	0.423	0.269	-0.003	0.805	0.824	
AA676466	Argininosuccinate synthetase	0.265	0.528	0.063	0.315	0.592	0.946	
AA455652	Arginyl-tRNA synthetase	0.290	0.215	0.826	0.615	0.320	1.040	
T67552	Aryl hydrocarbon receptor nuclear translocator	0.595	1.057	0.186	0.082	0.558	0.955	
AA045320	Arylacetyl deacetylase (esterase)	0.293	0.387	0.089	0.317	0.853	0.447	
T67128	ARYLAMINE N-ACETYLTRANSFERASE, MONOMORPHIC	0.272	-0.744	-0.709	-0.065	-0.529	0.391	
H45449	Arylsulfatase A	0.322	0.138	0.055	0.206	-0.062	0.515	
AA128826	Arylsulfatase B	0.513	0.737	0.505	0.139	0.230	0.886	
AA081039	Arylsulfatase D	0.599	0.046	0.240	0.786	0.568	0.759	
H58255	Asialoglycoprotein receptor 1	0.216	0.358	-0.075	0.306	0.095	0.713	
R98050	Asialoglycoprotein receptor 2	0.952	0.019	-0.177	-0.296	-0.094	-0.142	
AA894927	Asparagine synthetase	-0.429	-0.443	-0.116	-0.823	-0.134	-0.274	
N71653	Aspartoacylase (aminoacylase 2, Canavan disease)	0.211	0.673	-0.115	0.748	-0.062	0.828	
N51521	Aspartylglucosaminidase	0.471	0.748	0.562	0.887	0.298	0.869	
AA481562	ASPARTYL-TRNA SYNTHETASE	0.190	0.144	0.076	1.102	0.439	0.425	
AA016254	Ataxia telangiectasia mutated (includes complementation groups A, C and D)	-0.198	0.025	-0.140	-0.155	-0.183	1.079	
AA256508	Ataxin 1	-0.173	0.601	-0.114	-0.160	0.026	0.380	
AA458838	ATL-derived PMA-responsive (APR) peptide	0.814	0.741	0.642	0.198	0.463	1.146	
AA136054	ATP citrate lyase	0.758	0.553	0.826	0.648	0.588	0.873	

ACC	Gene Name	ZR75	YY3	YY1	468	MP1	231	(log base 2 ratio)
AA135824	ATP SYNTHASE ALPHA CHAIN, MITOCHONDRIAL PRECURSOR	-0.218	-0.101	0.324	-0.204	0.216	1.017	
AA046701	ATP SYNTHASE LIPID-BINDING PROTEIN P1 PRECURSOR	-0.523	-0.046	-0.162	-0.216	-0.046	1.005	
AA455126	ATP SYNTHASE LIPID-BINDING PROTEIN P2 PRECURSOR	-0.358	-0.665	-0.775	-0.715	-0.629	0.805	
AA504465	ATP synthase, H+ transporting, mitochondrial	0.454	0.250	0.886	0.081	0.833	0.442	
AA453765	ATP synthase, H+ transporting, mitochondrial F0 complex, subunit b, isoform 1	-0.131	-0.200	-0.003	-0.077	-0.066	0.124	
AA708298	ATP synthase, H+ transporting, mitochondrial F1 complex, beta polypeptide	-0.438	-0.170	-0.039	0.293	0.426	0.604	
AA689314	ATP synthase, H+ transporting, mitochondrial F1 complex, delta subunit	0.408	0.671	0.289	0.254	0.382	1.078	
AA873577	ATP synthase, H+ transporting, mitochondrial F1 complex, O subunit (oligomycin sensitivity conferring)	-0.108	0.218	-0.024	0.059	0.695	1.237	
H85355	ATPase, Ca++ transporting, cardiac muscle, slow twitch 2	0.020	-0.087	0.212	0.268	-0.211	1.146	
N83024	ATPase, Ca++ transporting, plasma membrane 4	-0.402	-0.270	0.171	0.256	-0.105	0.683	
AA236141	ATPase, Cu++ transporting, alpha polypeptide (Menkes syndrome)	0.685	0.553	0.521	0.328	1.007	0.970	
N26536	ATPase, Cu++ transporting, beta polypeptide (Wilson disease)	0.578	0.493	0.129	0.204	0.528	0.754	
AA702541	ATPase, H+ transporting, lysosomal (vacuolar proton pump) 31kD	0.107	0.261	0.036	-0.111	0.239	0.925	
H05768	ATPase, H+ transporting, lysosomal (vacuolar proton pump) 42kD	-0.247	-0.374	0.067	-0.677	-0.526	1.123	
AA504160	ATPase, H+ transporting, lysosomal (vacuolar proton pump), alpha polypeptide, 70kD, isoform 1	0.014	0.313	-0.161	-0.402	0.264	0.760	
AA877194	ATPase, H+ transporting, lysosomal (vacuolar proton pump), beta polypeptide, 56/58kD, isoform 2	0.457	0.472	-0.228	0.130	0.633	0.699	
AA873355	ATPase, Na+/K+ transporting, alpha 1 polypeptide	0.544	0.003	0.295	0.071	0.184	0.604	
R73570	ATPase, Na+/K+ transporting, alpha 2 (+) polypeptide	1.796	0.772	1.008	0.032	1.651	1.005	
AA775657	ATPase, Na+/K+ transporting, alpha 3 polypeptide	0.687	0.826	0.809	0.007	-0.297	0.520	
AA598814	ATPase, Na+/K+ transporting, beta 1 polypeptide	0.259	0.326	0.264	0.405	0.438	0.701	
H14808	ATPase, Na+/K+ transporting, beta 2 polypeptide	0.312	0.174	-0.250	-0.237	0.121	1.263	
H29521	ATP-binding cassette 3	0.608	0.712	0.353	0.349	0.789	0.724	
AA775355	ATP-DEPENDENT DNA HELICASE II, 86 KD SUBUNIT	0.203	0.466	-0.122	0.370	0.082	0.838	
AA448711	AU RNA-binding protein/enoyl-Coenzyme A hydratase	0.857	0.656	0.585	0.337	0.740	0.824	
AA454880	AU-rich element RNA-binding protein AUF1	0.170	0.259	0.120	0.115	-0.084	0.743	
AA487064	AUTOANTIGEN PM-SCL	-0.534	0.006	0.035	-0.242	-0.019	0.589	
AA479090	Autocrine motility factor receptor	-0.013	0.025	0.051	-0.059	0.294	0.736	
R48232	Autosomal dominant polycystic kidney disease type II	-0.287	-0.034	0.094	-0.069	0.108	0.875	
H15718	AXL receptor tyrosine kinase	0.261	0.500	0.050	0.085	0.397	0.449	
R40446	AXONIN-1 PRECURSOR	-0.185	0.368	0.124	0.140	0.225	0.662	
AA702802	Azurocidin 1 (cationic antimicrobial protein 37)	0.876	0.800	0.798	0.306	0.490	0.759	
W63749	B cell lymphoma protein 2	-0.019	0.210	0.186	-0.057	0.275	1.034	
R99926	B cell lymphoma protein 6 (zinc finger protein 51)	0.641	0.334	0.586	0.943	0.218	1.099	
AA281513	B cell lymphoma protein 7B	-0.085	0.198	0.305	0.100	0.339	0.682	
AA457114	B94 PROTEIN	-0.340	-0.277	0.080	-0.055	0.190	0.740	
AA680249	Bactericidal/permeability-increasing protein	-0.785	-0.820	-1.260	-0.810	-0.885	0.596	
R54846	Basic fibroblast growth factor (bFGF) receptor (shorter form)	0.717	0.404	0.035	0.494	0.391	0.269	
R83000	Basic transcription factor 3	0.354	0.276	0.200	0.141	-0.286	-0.068	
AA455004	BASIC TRANSCRIPTION FACTOR 62 KD SUBUNIT	-0.160	0.024	0.112	0.003	-0.062	0.677	
AA436440	Basigin	0.366	-0.626	-0.741	-0.859	0.160	1.137	
AA426216	BB1	1.583	1.002	1.767	1.141	2.192	0.209	
AA496578	B-cell CLL/lymphoma 3	0.036	0.284	0.215	0.452	-0.028	-0.411	
N70463	B-cell translocation gene 1, anti-proliferative	-0.086	-0.023	0.199	0.539	0.050	-0.102	
R52278	BETA-1,4 N-ACETYL GALACTOSAMINYLTRANSFERASE	-0.322	-0.021	-0.039	-0.181	-0.153	0.948	
AA670408	BETA-2-MICROGLOBULIN PRECURSOR	0.156	0.191	-0.282	0.151	0.198	0.787	
AA449882	Beta-A4 crystallin	-0.123	-0.174	-0.201	-0.194	0.083	1.048	
AA733203	BETA-HEXOSAMINIDASE ALPHA CHAIN PRECURSOR	-0.504	0.298	0.278	-0.230	-0.011	0.749	
T58896	Betaine:homocysteine methyltransferase	0.619	0.699	0.640	0.541	0.851	1.111	
R55796	BETA-NEOENDORPHIN-DYNORPHIN PRECURSOR	0.040	0.048	0.913	0.599	1.364	1.087	
AA401441	B-factor, properdin	-0.038	0.007	-1.112	-0.290	-0.598	0.809	
N51018	Biglycan	0.016	0.098	0.330	-0.005	0.022	1.320	
AA406571	Biliary glycoprotein	0.567	0.337	0.122	0.067	0.319	1.417	
AA418045	BINDING REGULATORY FACTOR	-0.331	0.150	-0.069	-0.075	-0.240	1.295	
R17765	Biotinidase	-0.515	-0.014	-0.413	-0.604	-0.566	0.236	
R56774	Bone morphogenetic protein 1	0.020	0.431	-0.157	-0.537	-0.198	0.765	
AA489383	Bone morphogenetic protein 2	0.706	0.519	0.385	0.254	0.551	0.699	
AA463225	Bone morphogenetic protein 4	-0.327	-0.390	-0.197	-0.285	-0.311	-0.001	
W73473	Bone morphogenetic protein 7 (osteogenic protein 1)	0.274	0.222	-0.065	0.197	0.309	1.132	
AA779480	Bone morphogenetic protein 8 (osteogenic protein 2)	0.267	-0.025	0.379	0.273	0.064	1.116	
N20203	Bone morphogenetic protein receptor, type II (serine/threonine kinase)	-0.179	-0.021	-0.041	-0.230	0.159	0.974	
AA194043	Bradykinin receptor B2	0.259	0.315	0.217	0.062	0.529	0.928	
AA875888	BRAIN NEURON CYTOPLASMIC PROTEIN 1	-0.284	-0.211	-0.086	-0.283	-0.472	1.407	
AA452826	BRAIN SPECIFIC POLYPEPTIDE PEP-19	0.414	0.166	0.268	-0.026	0.366	1.201	
AA262988	Brain-derived neurotrophic factor	-0.149	-0.096	0.021	-0.280	0.098	1.299	
AA436410	Branched chain aminotransferase 2, mitochondrial	0.276	0.219	0.400	-0.198	1.070	1.265	
AA472728	Branched chain keto acid dehydrogenase E1, alpha polypeptide (maple syrup urine disease)	0.084	0.264	0.120	0.403	0.272	1.282	
AA427739	Branched chain keto acid dehydrogenase E1, beta polypeptide (maple syrup urine disease)	0.824	0.272	0.328	0.453	0.252	1.195	
AA419342	Breakpoint cluster region protein BCR	-0.582	-0.347	-0.630	-0.862	-0.619	1.298	
H90415	Breast cancer 1, early onset	-0.226	0.195	0.143	-0.069	0.350	1.013	
H48122	Breast cancer 2, early onset	0.731	0.056	-0.173	0.065	0.261	0.584	
AA454222	Bromodomain, testis-specific	0.623	0.739	0.371	0.848	0.807	0.802	
AA629542	Brush-1	-0.543	-0.088	0.165	-0.113	-0.089	0.946	
H87536	Bullous pemphigoid antigen 2 (180kD)	0.038	0.347	-0.088	0.157	0.262	1.517	
AA885311	Butyrylcholinesterase	-0.351	-0.289	-0.003	-0.540	0.198	0.561	
AA633577	C-1-TETRAHYDROFOLATE SYNTHASE, CYTOPLASMIC	0.395	-0.043	0.069	0.396	-0.078	0.911	
H81200	C4/C2 activating component of Ra-reactive factor	-0.322	0.044	0.118	0.086	0.376	1.247	
R85414	CAD PROTEIN	0.183	0.418	0.374	0.344	0.154	1.344	
AA136983	Cadherin 11 (OB-cadherin)	0.157	0.426	0.710	0.305	0.916	0.697	
W49619	Cadherin 2, N-cadherin (neuronal)	0.069	0.011	0.281	-0.165	0.832	0.817	
AA425217	Cadherin 3 (P-cadherin)	-0.043	0.607	0.515	0.079	0.571	0.696	
H02884	Cadherin 5, VE-cadherin (vascular epithelium)	0.692	0.115	0.362	0.280	0.482	0.770	
R98242	CAG-17 (trinucleotide repeat-containing sequence) [human, pancreas, mRNA Partial, 701 nt]	-0.050	0.014	0.166	0.199	0.093	0.477	
H88329	CALBINDIN	-0.043	-0.205	-0.134	-0.100	-0.367	0.978	
N89721	Calcinurin A catalytic subunit [human, testis, mRNA, 2134 nt]	0.376	0.209	0.166	0.045	1.492	0.775	
AA457092	Calcinurin B	1.235	0.151	0.910	0.838	0.704	0.904	
R14080	Calcium modulating ligand	-0.099	0.213	0.072	0.174	0.280	1.312	
AA455227	Calcium/calmodulin-dependent protein kinase IV	0.428	0.331	0.233	-0.025	-0.075	0.919	
AA862999	Calcium-sensing receptor (hypocalcemic hypercalcemia 1, severe neonatal hyperparathyroidism)	0.556	0.229	-0.080	0.176	0.512	1.304	
AA076063	Caldesmon	-0.411	-0.523	-0.574	-0.196	-0.307	1.284	
AA039231	CALMODULIN-RELATED PROTEIN NB-1	0.021	0.132	0.164	0.829	-0.127	1.455	
AA126265	Calnexin	-1.181	-0.326	-1.793	-0.905	-1.001	0.238	
H15456	CALPAIN 1, LARGE	0.100	0.347	0.087	0.884	0.082	-0.378	
AA102454	Calpain, large polypeptide L2	0.211	0.642	-0.191	0.111	0.607	0.278	
AA676484	Calpain, small polypeptide	1.186	0.118	0.228	0.564	0.837	0.735	
AA416952	Calpastatin	-0.591	-0.390	0.030	-0.557	0.022	0.782	
AA043228	Calponin 3, acidic	-0.281	-0.281	-0.131	-0.310	-0.091	0.630	
H99170	CALRETICULIN PRECURSOR	-0.262	-0.184	0.043	0.208	-0.467	0.799	
AA464861	CAMP responsive element modulator	0.615	0.407	0.088	0.115	0.472	1.213	
AA630507	CAMP-dependent protein kinase regulatory subunit type I	0.666	0.212	0.388	0.487	0.334	1.387	
AA600217	CAMP-dependent transcription factor ATF-4 (CREB2)	0.433	0.325	0.278	0.079	0.578	1.315	
H12320	CAMP-RESPONSE ELEMENT BINDING PROTEIN	0.148	0.122	0.268	0.257	0.203	-0.134	
R20626	Cannabinoid receptor 1 (brain)	0.880	0.623	0.625	-0.278	0.739	0.007	
AA486766	Capping protein (actin filament), gelsolin-like	1.379	0.835	0.322	-0.139	0.837	-0.567	
T61078	Carbamoyl-phosphate synthetase 1, mitochondrial	0.199	0.111	0.262	-0.009	0.815	0.354	
R93176	Carbonic anhydrase I	-0.188	0.113	-0.093	-0.433	0.060	0.490	
H23187	Carbonic anhydrase II							

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	Z31	(log base 2 ratio)
AA481780	CARBONIC ANHYDRASE III	0.471	0.861	0.912	0.350	1.667	-0.077	
AA855158	Carbonic anhydrase IV	0.057	0.028	0.154	0.520	0.163	0.239	
AA489653	Carbonic anhydrase VI	0.167	0.211	-0.062	0.053	0.448	0.896	
AA280846	Carbonyl reductase	0.277	0.370	-0.082	-0.168	-0.225	1.148	
H91256	Carboxyl ester lipase (bile salt-stimulated lipase)	-0.696	0.113	-0.324	-0.359	0.292	1.231	
AA058807	Carboxylesterase 2 (liver)	0.538	0.077	0.308	0.030	0.390	0.693	
AA845178	Carboxypeptidase A1	0.043	0.034	-0.099	0.114	0.137	0.247	
T64223	Carboxypeptidase A3 (mast cell)	0.369	0.171	0.195	0.201	0.081	-0.223	
AA481513	Carboxypeptidase E	0.910	0.580	-0.116	-0.168	0.081	-1.381	
H61449	CARBOXYPEPTIDASE N 83 KD CHAIN	0.914	0.567	0.949	0.803	2.502	0.068	
AA130584	CARCINOEMBRYONIC ANTIGEN PRECURSOR	0.628	0.371	0.204	0.459	-0.063	0.132	
AA487623	Cardiac gap junction protein	1.122	0.333	1.013	0.338	1.242	-0.322	
AA621218	Camitine acetyltransferase	0.303	0.393	0.227	0.133	0.248	-0.219	
AA434115	CARTILAGE GLYCOPROTEIN-39 PRECURSOR	-0.336	-0.058	-0.024	-0.330	0.056	0.346	
AA427801	Cartilage linking protein 1	0.463	0.424	0.395	-0.398	-0.054	0.618	
AA625758	Casein kinase 1, alpha 1	0.264	-0.060	-0.199	-0.204	0.156	0.873	
AA669272	Casein kinase 1, epsilon	0.142	0.044	-0.112	0.149	0.157	0.359	
T68472	Casein kinase 2, alpha 1 polypeptide	-0.289	-0.084	0.355	0.254	0.499	0.945	
AA054996	Casein kinase 2, alpha prime polypeptide	0.300	0.422	0.198	0.310	0.558	0.851	
AA774638	Casein kinase 2, beta polypeptide	0.108	1.346	-0.178	-0.158	-0.153	0.860	
H15685	Catalase	0.092	0.312	0.549	0.196	0.690	0.495	
AA425664	Catechol-O-methyltransferase	0.207	0.051	-0.526	-0.412	-0.242	0.246	
AA676057	Catenin (cadherin-associated protein), alpha 1 (102kD)	0.568	-0.053	0.228	0.440	0.309	0.626	
AA442082	Catenin (cadherin-associated protein), beta 1 (88kD)	-0.050	-0.435	-0.369	-0.566	-0.202	0.268	
AA281731	Cathepsin B	0.265	0.335	0.265	0.290	0.256	0.611	
AA644088	Cathepsin C	0.916	0.592	-0.010	0.464	0.743	0.684	
N20475	Cathepsin D (lysosomal aspartyl protease)	-0.155	-0.054	0.249	0.192	-0.155	1.111	
H94487	Cathepsin E	0.270	1.308	0.561	0.782	0.102	1.037	
W92603	Cathepsin G	-0.326	-0.354	0.188	0.795	-0.398	1.138	
AA487231	CATHEPSIN H PRECURSOR	0.338	-0.158	0.383	-0.353	0.251	0.728	
R00859	CATHEPSIN K PRECURSOR	-0.902	-0.231	-0.439	-1.042	-0.739	0.064	
W73874	Cathepsin L	0.076	0.156	-0.345	-0.055	0.370	1.080	
W07805	CATHEPSIN O PRECURSOR	0.228	0.341	-0.196	0.518	0.004	0.410	
AA236164	CATHEPSIN S PRECURSOR	-0.098	-0.770	0.185	-0.618	0.024	0.487	
AA055935	Caveolin, caveolae protein, 22kD	-0.130	0.192	0.023	0.052	0.595	0.417	
H58254	C-C CHEMOKINE RECEPTOR TYPE 2	-0.256	0.140	-0.105	0.134	-0.109	0.533	
N20996	CCAAT BOX-BINDING TRANSCRIPTION FACTOR 1	-0.201	0.095	0.114	-0.045	-0.018	0.710	
AA676804	CCAAT/enhancer binding protein (C/EBP), gamma	-0.175	-0.523	-0.452	-0.423	0.223	0.716	
AA002086	CD1c antigen (thymocyte antigen)	0.305	0.439	0.779	0.581	0.559	0.797	
AA451684	CD1d antigen, d polypeptide	0.584	0.124	0.504	0.501	0.627	0.996	
N91385	CD20 RECEPTOR	0.303	0.248	0.209	-0.132	-0.188	0.441	
N53534	CD22 antigen	-0.767	-0.040	-0.697	-0.785	-0.720	1.039	
AA147594	CD30L RECEPTOR PRECURSOR	0.383	0.310	0.310	0.306	0.444	0.717	
AA434387	CD34 antigen (hemopoietic progenitor cell antigen)	-0.211	-0.199	0.033	-0.383	-0.080	0.514	
N39161	CD36 antigen (collagen type I receptor, thrombospondin receptor)	0.051	0.025	0.100	-0.069	0.147	0.389	
AA676453	CD37 antigen	0.242	0.106	0.322	0.123	0.247	0.623	
R00276	CD38 antigen (p45)	0.671	0.318	0.714	0.321	0.998	0.775	
H13211	CD39 antigen	-0.103	-0.172	0.242	-0.034	-0.082	1.043	
T66799	CD3G antigen, gamma polypeptide (TIT3 complex)	-0.310	-0.320	0.145	-0.415	-0.116	0.918	
H98636	CD40L RECEPTOR PRECURSOR	-0.101	0.063	0.029	0.287	0.067	1.047	
AA283090	CD44 antigen (cell adhesion molecule)	1.229	0.622	0.954	0.049	0.571	0.730	
AA455448	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)	-0.530	-0.164	-0.294	-0.435	-0.171	0.303	
R05416	CD48 antigen (B-cell membrane protein)	-0.203	0.202	-0.251	-0.158	0.125	0.304	
AA132090	CD53 antigen	0.487	0.854	0.574	0.109	0.725	0.236	
AA136271	CD58 antigen, (lymphocyte function-associated antigen 3)	0.434	0.267	0.483	0.127	0.745	0.558	
H60549	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G34)	0.580	0.016	0.452	0.119	0.368	0.797	
AA454563	CD63 antigen (melanoma 1 antigen)	0.134	0.998	-0.258	-1.013	1.035	0.774	
AA421296	CD68 antigen	0.491	-0.133	0.622	0.514	0.757	1.136	
AA279755	CD69 antigen (early T cell activation antigen)	0.153	0.266	1.077	0.290	1.369	0.790	
AA812996	CD72 antigen	0.186	0.315	0.165	0.258	0.480	1.121	
AA443584	CD8 antigen, alpha polypeptide (p32)	0.246	-0.155	0.631	-0.009	0.388	0.615	
AA486556	CD81 ANTIGEN	0.351	0.448	0.218	0.396	0.395	0.274	
AA111969	CD83 ANTIGEN PRECURSOR	1.211	1.522	0.537	-0.457	-0.314	0.702	
AA412053	CD9 antigen	-1.625	-1.432	-1.398	-2.122	-1.693	0.512	
AA488610	CDC21 HOMOLOG	2.482	0.492	1.956	1.711	2.352	0.603	
AA459292	CDC28 protein kinase 1	-0.317	-0.181	0.151	-0.279	-0.530	0.543	
AA397813	CDC28 protein kinase 2	-0.006	-0.067	0.188	-0.403	-0.006	0.707	
AA285155	CDC46 HOMOLOG	0.314	0.158	0.125	0.079	0.440	0.606	
AA164705	CDW52 antigen (CAMPATH-1 antigen)	0.423	0.485	0.567	1.480	0.362	0.826	
AA428058	CELL ADHESION PROTEIN	0.387	0.929	0.456	0.605	0.689	0.896	
AA633993	Cell division cycle 10 (homologous to CDC10 of S. cerevisiae)	-0.190	0.042	0.151	-0.089	0.428	0.910	
AA598974	Cell division cycle 2, G1 to S and G2 to M	-0.339	-0.271	-0.082	-0.309	0.318	1.228	
W95001	Cell division cycle 25C	-0.357	0.077	-0.175	-0.177	0.458	0.868	
T81764	Cell division cycle 27	-0.406	-0.023	-0.136	-0.305	-0.018	0.569	
AA668681	Cell division cycle 42 (GTP-binding protein, 25kD)	0.810	0.452	0.843	0.593	0.949	0.342	
AA427834	Cell division cycle 42 (GTP-binding protein, 25kD)	-0.294	0.153	-0.053	0.011	0.280	-0.375	
R96997	CELL DIVISION PROTEIN KINASE 8	0.191	0.149	0.045	0.137	0.101	0.391	
N93505	CELL SURFACE GLYCOPROTEIN A15	0.920	1.078	0.629	-0.197	0.299	0.442	
AA625995	CELLULAR NUCLEIC ACID BINDING PROTEIN	-0.261	0.425	0.138	-0.045	-0.132	0.448	
AA454702	Cellular retinoic acid-binding protein [human, skin, mRNA, 735 nt]	0.611	0.432	0.255	-0.196	-0.006	1.016	
AA700832	Cellular retinol-binding protein	0.530	0.465	-0.124	-0.016	0.094	0.892	
AA461496	Centromere autoantigen C	0.549	0.645	0.566	0.355	1.048	0.842	
AA455481	Centromere protein B (80kD)	0.609	0.299	0.406	0.202	0.838	0.841	
AA411850	Centromere protein E (312kD)	0.098	0.152	0.090	0.452	0.263	0.876	
AA074613	Cerebellar degeneration-related protein (62kD)	1.447	0.905	0.597	0.468	0.259	0.829	
AA425008	CEREBELLIN 1 PRECURSOR	-0.110	0.063	0.039	0.051	0.065	0.696	
W37753	Ceroid-lipofuscinosis, neuronal 3, juvenile (Batten, Spielmeyer-vogt disease)	0.302	-0.025	-0.312	-0.290	-0.044	-0.531	
H86554	Ceruloplasmin (ferroxidase)	0.742	0.594	0.477	0.261	0.612	-0.403	
AA668959	CGMP-DEPENDENT PROTEIN KINASE, BETA ISOZYME	-0.138	0.206	0.345	-0.299	0.058	0.708	
AA872690	Chaperonin containing T-complex subunit 6	0.250	0.166	-0.135	-0.265	-0.134	0.715	
R09220	Charot-Leyden crystal protein	0.321	0.153	0.141	0.300	0.214	0.584	
N74383	Chediak-Higashi syndrome 1	0.583	0.371	0.426	0.116	0.753	0.583	
AA036881	Chemokine (C-C) receptor 1	0.623	0.442	0.181	0.110	0.758	0.732	
N51278	Chemokine receptor-like 1	0.560	0.406	0.470	0.109	1.061	1.009	
AA668821	Chitinase 1	0.303	0.248	0.127	0.249	0.379	0.971	
AA018316	Chloride channel 4	0.298	0.396	0.056	0.165	0.569	1.005	
R19276	Cholesteryl ester transfer protein, plasma	1.454	0.122	1.315	1.469	1.671	0.590	
H09959	Choline kinase	1.385	0.802	1.313	0.726	1.430	1.763	
R56604	Cholinergic receptor, nicotinic, alpha polypeptide 4	-0.266	-0.076	0.103	0.273	-0.075	0.780	
W93369	Cholinergic receptor, nicotinic, alpha polypeptide 7	0.443	1.103	-0.012	-0.263	0.320	-0.125	
R02059	Cholinergic receptor, nicotinic, epsilon polypeptide	0.607	0.513	0.256	0.499	0.742	0.218	
N32604	CHORIOGONADOTROPIN BETA CHAIN PRECURSOR	0.414	0.757	0.475	-0.127	0.724	0.919	
R36264	Chromogranin A (parathyroid secretory protein 1)	0.179	0.497	0.205	0.084	0.916	0.728	
W37769	Chromogranin B (secretogranin 1)	0.313	0.088	0.174	-0.298	0.762	0.752	
AA291398	Chromosome condensation 1	1.813	0.496	0.177	-0.039	0.022	0.670	
AA463492	Chronic granulomatous disease	0.305	0.214	0.097	-0.095	-0.163	0.733	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA026626	Chymotrypsin-like	0.103	-0.535	-0.166	0.053	0.078	0.906	
AA845168	Chymotrypsinogen B1	-1.155	-0.568	-1.052	-1.065	-0.531	1.053	
H42728	CLASS II HISTOCOMPATIBILITY ANTIGEN, M ALPHA CHAIN PRECURSOR	0.037	0.074	0.047	0.064	0.351	0.946	
AA708816	Clathrin heavy chain (alternative products)	0.169	-0.060	0.210	0.925	-0.102	0.419	
AA113872	Clathrin light chain A	0.620	0.508	0.184	0.255	0.642	0.358	
N20335	Clathrin, light polypeptide (Lcb)	0.517	0.169	0.083	0.285	0.596	0.072	
N52267	Clathrin-associated/assembly/adaptor protein, large, beta 1	0.594	0.400	0.167	0.160	0.655	0.244	
AA496804	CLEAVAGE SIGNAL-1 PROTEIN	0.678	0.043	-0.142	0.445	0.036	0.524	
W72816	Cleavage stimulation factor, 3' pre-RNA, subunit 1, 50kD	0.354	0.268	0.025	0.067	0.680	0.584	
AA293218	Cleavage stimulation factor, 3' pre-RNA, subunit 2, 64kD	0.078	-0.219	-0.290	0.060	-0.665	0.780	
AA700556	Cleavage stimulation factor, 3' pre-RNA, subunit 3, 77kD	0.457	0.585	0.310	0.440	0.915	0.498	
AA292410	Clusterin (complement lysis inhibitor; testosterone-repressed prostate message 2; apolipoprotein J)	-0.626	-0.352	-0.253	-0.159	0.527	0.619	
AA455910	Coagulation factor II (thrombin) receptor	0.703	0.757	0.453	0.159	1.006	0.635	
AA680136	Coagulation factor V	0.611	0.510	0.395	0.704	0.896	0.960	
N98524	COAGULATION FACTOR X PRECURSOR	0.055	-0.124	-0.108	-0.296	0.094	1.228	
N52835	Coagulation factor XI (plasma thromboplastin antecedent)	0.719	0.627	0.252	0.428	0.692	-0.154	
AA449742	Coagulation factor XIII, A1 polypeptide	0.378	0.324	0.340	0.281	0.318	0.297	
TS3782	COATOMER BETA' SUBUNIT	0.364	0.090	-0.010	0.044	0.008	0.425	
TS4662	COLIPASE PRECURSOR	-0.011	0.124	-0.086	0.077	0.230	0.762	
AA490172	Collagen, type I, alpha-2	-0.338	0.342	-0.996	-0.066	-0.104	0.378	
N66737	Collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)	0.014	0.550	-0.222	0.103	0.103	0.654	
AA150402	Collagen, type IV, alpha 1	1.655	0.767	0.819	0.949	2.082	0.559	
AA430540	Collagen, type IV, alpha 2	0.290	-0.079	0.021	-0.072	0.491	0.636	
H68555	Collagen, type IV, alpha 4	0.498	0.687	0.069	0.311	0.681	0.823	
R61163	Collagen, type IV, alpha 5 (Alport syndrome)	-0.599	0.003	-0.562	-0.437	-0.482	0.657	
AA496735	Collagen, type IX, alpha 3	-0.592	-0.059	0.127	-0.025	-0.095	1.022	
AA461456	Collagen, type V, alpha 1	-1.048	-0.371	-0.937	-0.888	-0.800	0.541	
R75635	Collagen, type V, alpha 1	0.479	0.610	0.263	0.304	0.847	0.589	
H99676	Collagen, type VI, alpha 1	0.184	0.159	0.000	0.199	0.019	0.576	
AA464748	Collagen, type VI, alpha 2	0.237	0.721	-0.052	0.382	0.591	0.434	
R31701	Collagen, type XI, alpha 1	0.340	0.421	-0.044	0.072	0.339	0.640	
AA455157	Collagen, type XV, alpha 1	0.917	0.971	0.610	0.252	1.081	0.720	
N81029	Collagen, type XVIII, alpha 1	0.687	0.421	-0.089	-0.063	0.555	0.528	
AA870279	Colлагin response mediator protein 1	0.514	-0.026	0.175	0.028	0.590	0.410	
AA284954	Colony stimulating factor 1 receptor, formerly McDonough feline sarcoma viral (v-fms) oncogene homo	0.763	0.574	0.268	-0.110	0.401	0.261	
AA458507	Colony stimulating factor 3 receptor (granulocyte)	0.160	-0.102	-0.815	-0.432	0.051	0.359	
TS5558	Colony-stimulating factor 1 (M-CSF)	-0.356	-0.006	0.014	0.031	0.411	0.420	
AA873152	COMPLEMENT C3 PRECURSOR	-0.097	-0.115	0.150	0.229	0.260	0.608	
AA521362	Complement component (3d/Epstein Barr virus) receptor 2	0.596	1.251	0.542	0.406	0.571	0.843	
AA481438	Complement component 1 inhibitor (angioedema, hereditary)	0.165	0.198	0.072	-0.025	0.452	0.143	
T71284	Complement component 1, q subcomponent, beta polypeptide	0.461	0.682	-0.291	0.318	0.703	-0.402	
T62048	Complement component 1, s subcomponent	0.978	0.564	-0.287	0.552	-0.012	0.327	
AA664406	Complement component 4A	0.244	0.256	0.058	0.042	0.254	0.058	
T62036	Complement component 4-binding protein, alpha	0.092	-0.261	0.067	0.184	-0.059	-0.018	
AA677687	Complement component 4-binding protein, beta	0.252	0.387	0.175	0.486	0.656	0.629	
N59396	Complement component 6	-0.020	0.671	-0.408	-0.129	0.651	0.489	
AA598478	Complement component 7	0.099	-0.123	-0.410	-0.218	-0.431	-0.254	
H53865	Complement component 8, alpha polypeptide	-0.093	0.140	-0.440	-0.407	0.282	0.216	
T68274	Complement component 8, beta polypeptide	0.410	0.420	-0.058	-0.056	-0.189	-0.460	
T69603	Complement component C1r	0.206	0.373	0.081	0.432	0.337	0.486	
T71879	Complement component C2	0.879	0.725	0.268	0.272	0.325	0.386	
N53684	Complement component C5	0.165	0.398	0.125	0.176	0.777	-0.098	
T74567	COMPLEMENT FACTOR H-LIKE PROTEIN DOWN16 PRECURSOR	-0.005	0.295	-0.137	0.243	0.196	0.333	
W92812	Connective tissue activation peptide III	0.781	0.599	0.356	0.384	0.370	0.058	
AA598794	Connective tissue growth factor	0.675	0.929	0.453	0.552	0.334	-0.030	
H20658	Contactin 1	-0.558	-0.628	-1.103	-0.373	0.303	0.149	
AA700808	Coproporphyrinogen oxidase (coproporphyrin, harderoporphyria)	0.387	0.403	0.501	0.281	0.772	0.797	
AA187148	Core-binding factor, beta subunit	-0.070	-0.183	-0.296	-0.304	-0.169	0.630	
AA150918	CORTICOSTEROID 11-BETA-DEHYDROGENASE, ISOZYME 1	-0.282	0.119	-0.246	-0.424	-0.344	1.097	
H90764	Corticosteroid binding globulin	0.414	0.300	0.143	0.393	0.775	0.603	
H07089	CORTICOTROPIN RELEASING FACTOR RECEPTOR 1 PRECURSOR	0.595	0.431	-0.284	-0.679	0.705	0.017	
AA452909	COUP TRANSCRIPTION FACTOR	0.254	0.261	0.027	0.116	0.342	-0.309	
T97615	C-reactive protein	-0.273	0.300	-0.122	0.073	-0.465	0.521	
AA894557	Creatine kinase B	-0.553	-0.146	-0.368	-0.487	-0.017	-0.102	
AA461048	Creatine kinase, mitochondrial 2 (sarcomeric)	0.048	0.242	-0.174	0.313	-0.144	-0.001	
AA191518	Crystallin beta-B2	0.067	0.548	0.448	0.109	0.789	0.169	
R59968	Crystallin Mu	0.135	0.015	-0.050	0.177	0.520	0.624	
R40946	Crystallin zeta (quinone reductase)	0.369	0.524	0.084	-0.091	0.872	0.482	
AA504891	Crystallin, alpha B	0.154	0.013	0.402	0.256	0.741	0.817	
H09614	CTP synthetase	-1.936	-1.665	-1.439	-1.815	-1.890	0.783	
AA292536	Cut (Drosophila)-like 1 (CCAAT displacement protein)	0.037	0.108	0.222	0.125	0.167	0.754	
W93472	Cyclic nucleotide gated channel (photoreceptor), cGMP gated 1 (alpha)	0.357	0.123	0.363	0.217	0.805	0.738	
H82536	Cyclic nucleotide gated channel (photoreceptor), cGMP gated 2 (beta)	0.356	0.217	-0.071	-0.102	0.389	0.049	
AA608568	Cyclin A	-0.069	0.905	-0.165	0.396	0.298	0.177	
R46787	Cyclin B1	0.535	0.234	0.340	-0.041	0.763	0.533	
AA487486	Cyclin D1 (PRAD1; parathyroid adenomatosis 1)	0.284	0.890	0.400	0.407	0.533	0.280	
H84154	Cyclin D2	0.895	0.761	0.284	0.212	0.080	0.081	
TS4121	Cyclin E	-0.170	-0.262	-0.190	-0.314	0.140	0.630	
AA676787	Cyclin F	0.662	0.615	0.170	0.174	0.191	0.428	
AA454146	Cyclin H	-0.601	0.171	-0.238	0.192	0.517	0.759	
AA442853	Cyclin-dependent kinase 5, regulatory subunit	0.772	0.718	0.150	0.292	0.297	0.558	
H73724	Cyclin-dependent kinase 6	0.427	-0.162	0.010	-0.182	-0.925	0.301	
R22625	Cyclin-dependent kinase 7 (homolog of Xenopus MO15 cdk-activating kinase)	0.547	0.754	-0.099	0.010	0.120	-0.368	
AA877595	Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)	0.596	0.448	0.233	0.270	0.621	0.156	
R07167	Cystathionase (cystathionine gamma-lyase)	0.100	0.553	0.306	0.240	0.120	0.627	
H72207	CYSTATIN A	-0.504	0.250	0.051	-0.271	-0.005	-0.071	
W22919	CYSTATIN B	0.168	-0.053	0.010	-0.043	0.278	0.201	
AA599177	Cystatin C (amyloid angiopathy and cerebral hemorrhage)	-0.218	0.250	0.112	0.145	0.864	0.381	
W72895	Cystatin M	1.050	1.275	0.275	0.222	0.393	0.621	
AA497033	Cysteine dioxygenase, type 1	0.280	0.631	0.240	0.470	0.279	0.298	
AA464147	Cysteinyl-tRNA synthetase	1.674	2.002	0.994	0.568	2.176	0.530	
AA431125	Cytochrome b-245, alpha polypeptide	-0.017	0.103	0.088	-0.091	0.369	1.046	
R91950	Cytochrome b-5	0.364	0.613	0.050	0.046	0.024	0.562	
AA457700	Cytochrome B561	0.489	0.408	-0.005	0.170	0.467	0.153	
R53311	CYTOCHROME C	0.013	-0.085	-1.012	-0.965	-0.447	-0.178	
AA482243	CYTOCHROME C OXIDASE POLYPEPTIDE VIA-LIVER PRECURSOR	0.696	0.234	0.072	0.226	0.410	-0.358	
AA456931	CYTOCHROME C OXIDASE POLYPEPTIDE VIC PRECURSOR	0.873	0.383	0.836	0.322	1.328	-0.031	
AA862813	CYTOCHROME C OXIDASE POLYPEPTIDE VIII-LIVER/HEART PRECURSOR	-0.443	0.103	0.083	-0.238	0.496	-0.200	
N71160	Cytochrome c oxidase subunit VIb	0.039	-0.176	0.169	0.324	0.342	-0.303	
N56693	Cytochrome c oxidase subunit VIb	0.462	1.492	0.290	0.272	0.451	0.555	
N36299	Cytochrome c oxidase subunit X (heme A: farnesyltransferase)	0.475	0.823	-0.221	0.161	0.731	0.413	
AA629719	Cytochrome c oxidase VIc subunit	-0.058	-0.413	-0.019	-0.041	-0.446	0.354	
AA447774	Cytochrome c1	-0.144	-0.250	0.112	0.489	0.039	0.894	
R52654	Cytochrome c-1	-0.031	0.170	0.162	0.763	0.400	0.563	
AA884709	Cytochrome P450 11 beta	1.537	0.113	1.327	0.517	1.247	0.567	
AA448157	Cytochrome P450 1B1 (dioxin-inducible)	-0.217	0.060	0.047	0.402	0.399	0.310	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
H50500	Cytochrome P450 11E1	0.253	0.104	0.345	-0.093	0.696	0.351	
AA873089	Cytochrome P450 11A5 (nifedipine oxidase chain 5)	-0.122	-0.103	0.028	-0.429	-0.061	0.377	
R91078	Cytochrome P450 11A7 (P450-HfLa)	0.164	-0.162	-0.217	-0.282	-0.245	1.053	
AA291484	Cytochrome P450 11B1	-0.330	0.138	0.237	0.080	-0.208	-0.099	
T73294	Cytochrome P450 reductase [human, placenta, mRNA Partial, 2403 nt]	-0.250	0.166	0.349	0.810	-0.092	0.811	
AA477781	Cytochrome P450, 51 (lanosterol 14-alpha-demethylase)	-0.148	-0.484	-0.058	-0.146	-0.630	0.794	
AA418907	Cytochrome P450, subfamily I (aromatic compound-inducible), polypeptide 1	0.313	0.461	0.142	0.182	0.723	0.269	
T72259	Cytochrome P450, subfamily IIA (phenobarbital-inducible), polypeptide 6	-0.036	0.880	-0.023	0.181	0.436	0.715	
T68287	Cytochrome P450, subfamily IIB (phenobarbital-inducible), polypeptide 6	-0.288	-0.179	0.071	0.438	-0.078	0.424	
N53136	Cytochrome P450, subfamily IIC (mephenytoin 4-hydroxylase), polypeptide 9	-0.113	0.273	-0.625	0.263	0.090	-0.658	
R89492	Cytochrome P450, subfamily IIC (mephenytoin 4-hydroxylase), polypeptide 9	0.448	0.411	0.316	-0.217	0.355	-0.313	
H09076	Cytochrome P450, subfamily IIJ (arachidonic acid epoxidase) polypeptide 2	0.831	0.489	0.142	0.218	0.495	0.130	
W84869	Cytochrome P450, subfamily IVA, polypeptide 11	0.038	-0.601	-0.631	-0.393	-0.328	0.288	
H00592	Cytochrome P450, subfamily XIX (aromatization of androgens)	0.222	0.431	-0.029	-0.052	0.195	0.565	
R16838	Cytochrome P450, subfamily XVII (steroid 17-alpha-hydroxylase), adrenal hyperplasia	-0.339	0.996	-1.044	-0.836	-0.028	0.431	
T58430	Cytochrome P450, subfamily XXI (steroid 21-hydroxylase, congenital adrenal hyperplasia)	-0.515	-0.471	0.733	-0.090	0.449	-0.052	
N66957	Cytochrome P450, subfamily XXVII (steroid 27-hydroxylase, cerebrotendinous xanthomatosis)	0.407	0.458	-0.003	0.195	0.127	-0.099	
AA486393	Cytokine receptor family II, member 4	0.150	-0.014	0.261	-0.256	0.323	0.702	
AA410517	Cytoplasmic antiproteinase	0.027	0.122	-0.050	0.096	0.429	0.320	
AA608557	Damage-specific DNA binding protein 1 (127 kD)	0.125	0.172	0.320	0.357	0.270	0.026	
AA410404	Damage-specific DNA binding protein 2 (48 kD)	-0.008	-0.985	-0.111	0.042	0.080	0.794	
T67057	D-BETA-HYDROXYBUTYRATE DEHYDROGENASE PRECURSOR	-0.281	0.382	0.244	0.048	-0.041	-0.341	
R09561	Decay accelerating factor for complement (CD55, Cromer blood group system)	-0.177	-0.181	-0.139	-0.303	-0.167	0.082	
AA099394	Decorin	0.112	0.062	0.014	0.176	0.326	-0.150	
AA455281	DEFENDER AGAINST CELL DEATH 1	-0.289	0.158	0.176	-0.331	0.755	0.488	
H08643	Dentatorubral-pallidoluysian atrophy	0.718	0.511	0.804	1.050	0.492	0.624	
AA448685	Deoxycytidine kinase	0.505	-0.273	0.369	0.716	0.127	1.154	
AA448207	Deoxycytidylate deaminase	1.875	1.334	0.769	0.896	1.137	1.091	
R07506	Deoxyguanosine kinase	0.259	0.068	0.554	0.865	0.132	0.695	
AA496046	Deoxyhypusine synthase	-0.402	0.859	-0.209	-0.423	-0.168	0.315	
AA464256	Deoxythymidylate kinase	0.415	0.391	0.906	0.720	0.324	0.887	
R48303	Dermatoglycin	0.148	0.471	0.124	0.036	0.130	0.885	
H90899	DESMOPLAKIN I AND II	0.166	0.006	0.034	0.572	0.172	0.609	
AA280692	Diacylglycerol kinase delta	-0.287	-0.349	-0.216	-0.353	-0.026	0.879	
AA456830	Diacylglycerol kinase, alpha (80kD)	-0.228	-0.013	0.319	0.051	0.614	0.140	
N73101	Diastrophic dysplasia (sulfate transporter)	0.042	0.811	0.291	0.481	0.455	0.042	
R83124	Dihydrodiol dehydrogenase	0.274	0.590	0.363	0.071	0.805	0.564	
R00884	Dihydrofolate reductase	-0.272	0.124	0.205	0.378	-0.077	0.161	
AA447748	Dihydrodipicolinate dehydrogenase (E3 component of pyruvate dehydrogenase complex, 2-oxo-glutarate	-0.042	0.211	0.759	0.267	0.344	0.902	
N62460	Dihydrodipicolinate S-acyltransferase (E2 component of pyruvate dehydrogenase complex)	0.001	0.351	0.024	0.280	0.826	-0.072	
N29901	Dihydrodipicolinate S-acyltransferase (E2 component of pyruvate dehydrogenase complex)	-0.250	0.162	0.148	0.587	0.289	0.661	
AA456824	Dihydrodipicolinate S-succinyltransferase (E2 component of 2-oxo-glutarate complex)	0.774	0.320	0.230	0.057	0.918	-0.230	
AA173225	DIHYDROOROTATE DEHYDROGENASE PRECURSOR	-0.310	-0.242	-0.856	-0.579	-0.687	0.306	
W72250	DIHYDROPRYRIDINE-SENSITIVE L-TYPE, CALCIUM CHANNEL BETA-1-B1 SUBUNIT	0.160	-0.164	-0.020	0.786	0.200	0.201	
W73406	DIHYDROPRYRIDINE-SENSITIVE L-TYPE, SKELETAL MUSCLE CALCIUM CHANNEL GAMMA SUE	0.191	0.319	0.349	0.290	0.706	0.050	
R38198	Dihydropteridine reductase	0.264	0.347	0.639	0.649	0.370	0.332	
AA430625	Dihydropyrimidine dehydrogenase	0.026	0.428	0.163	0.545	0.514	-0.205	
W70234	Dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2)	-0.202	0.332	0.009	0.273	-0.202	-0.215	
W66197	Dipeptidylpeptidase VI	-0.435	0.705	0.939	-0.306	0.383	0.640	
R45640	Diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor)	0.101	0.263	0.284	0.442	0.281	0.090	
AA256304	Distal-less homeobox 4	0.297	0.518	0.001	0.118	0.550	-0.422	
N62586	DNA excision repair protein ERCC5	0.886	1.297	0.842	0.507	0.464	-0.645	
AA487235	DNA G/T mismatch-binding protein	0.679	0.528	0.252	0.481	0.315	-0.038	
AA149292	DNA ligase III	0.134	1.228	-0.061	0.084	0.335	0.600	
N34857	DNA methyltransferase	-0.002	0.146	0.163	0.455	0.367	0.871	
R10662	DNA mismatch repair protein MLH1	1.597	1.740	0.355	0.960	1.284	0.951	
AA486289	DNA polymerase alpha subunit	0.423	-0.036	0.181	0.217	-0.014	1.519	
AA402855	DNA polymerase beta subunit	0.196	-0.142	0.112	0.474	0.675	0.297	
AA680129	DNA POLYMERASE EPSILON, CATALYTIC SUBUNIT A	-0.127	-0.839	-0.403	0.053	0.500	-0.037	
AA188761	DNA polymerase gamma	-0.243	0.008	0.364	0.480	-0.244	-0.295	
AA025937	DNA primase polypeptide 1 (49kD)	0.075	-0.619	-0.210	-0.604	-0.816	0.397	
AA344404	DNA primase polypeptide 2A (58kD)	-0.157	-0.824	-0.492	-0.478	-0.634	-0.136	
H20856	DNA repair helicase ERCC3	-0.057	-0.042	-0.097	0.147	-0.334	0.652	
AA219061	DNA repair protein MSH2	-0.213	0.169	0.269	0.429	-0.185	0.143	
R39148	DNA repair protein XRCC4	-0.618	-1.389	-0.420	0.344	-0.936	0.991	
AA232656	DNA topoisomerase I	-0.039	0.212	0.242	0.497	0.213	0.779	
AA455300	DNA-BINDING PROTEIN A	-0.624	0.212	-0.380	-0.767	0.222	0.176	
AA464421	DNA-BINDING PROTEIN MEL-18	-0.341	0.281	-0.064	-0.372	0.274	0.132	
AA485214	DNA-BINDING PROTEIN NEFA PRECURSOR	0.646	0.442	0.280	0.036	0.282	0.884	
AA147214	DNA-damage-inducible transcript 1	-0.005	0.036	0.155	0.371	-0.159	0.184	
AA418689	DNA-DIRECTED RNA POLYMERASE II 14.4 KD POLYPEPTIDE	0.333	0.490	0.738	0.590	1.373	-0.649	
AA777192	DNA-DIRECTED RNA POLYMERASE II 14.5 KD POLYPEPTIDE	0.945	0.316	1.328	0.531	1.228	0.201	
AA027042	DNA-DIRECTED RNA POLYMERASE II 23 KD POLYPEPTIDE	-0.043	0.053	0.032	-0.173	-0.015	-0.034	
AA481758	DNAJ PROTEIN HOMOLOG 1	0.339	-0.086	-0.325	-0.575	-0.251	-0.125	
R45428	DNAJ PROTEIN HOMOLOG 2	-0.681	0.068	-0.390	-0.366	0.044	1.261	
AA455298	DNAJ PROTEIN HOMOLOG HSJ1	-0.170	0.345	-0.075	-0.199	0.468	1.083	
AA287323	DNA-REPAIR PROTEIN COMPLEMENTING XP-C CELLS	0.695	-0.307	-0.031	0.352	0.132	0.035	
AA425139	DNA-REPAIR PROTEIN XRCC1	0.357	0.250	0.309	0.038	0.513	-0.067	
AA405800	Dodecenoyl-Coenzyme A delta isomerase (3,2 trans-enoyl-Coenzyme A isomerase)	0.204	0.155	0.467	0.325	0.570	0.279	
AA702640	Dopa decarboxylase (aromatic L-amino acid decarboxylase)	0.752	0.272	0.109	0.722	0.490	0.934	
AA397824	Dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	-0.618	-0.478	-0.231	-0.643	-0.530	0.868	
AA478553	Dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	0.229	0.518	0.436	0.658	0.189	0.919	
AA600189	Double-stranded RNA adenosine deaminase	-0.062	0.249	0.081	-0.292	-0.064	0.653	
AA132007	Down-regulator of transcription 1, TBP-binding (negative cofactor 2)	-0.553	-0.725	-0.125	-0.481	-0.708	0.383	
AA670380	DPH2L	-1.042	-0.176	-0.621	-0.894	-0.835	0.910	
R44740	DUAL SPECIFICITY MITOGEN-ACTIVATED PROTEIN KINASE KINASE 1	-0.211	0.268	-0.016	-0.087	0.631	1.485	
AA425826	DUAL SPECIFICITY MITOGEN-ACTIVATED PROTEIN KINASE KINASE 2	-0.301	-0.440	-0.787	-0.638	-1.118	1.806	
AA829383	DUAL SPECIFICITY MITOGEN-ACTIVATED PROTEIN KINASE KINASE 3	0.133	-0.032	-0.385	-0.433	-0.378	1.238	
AA759046	DUAL SPECIFICITY PROTEIN PHOSPHATASE PAC-1	-0.931	-0.370	-0.197	-0.743	-0.435	0.957	
AA497079	Dual-specificity tyrosine-(Y)-phosphorylation regulated kinase	-0.315	0.167	-0.459	-0.854	-0.005	0.723	
T82477	Duffy blood group	-0.176	0.078	-0.024	0.406	0.107	1.070	
AA489219	DUTP pyrophosphatase	-0.070	0.001	0.062	0.514	-0.043	1.104	
AA466334	DYNAMIN-1	-1.661	-1.298	-1.172	-1.763	-0.754	0.975	
AA461118	Dystrophin (muscular dystrophy, Duchenne and Becker types), includes DXS142, DXS164, DXS206, C	-0.204	0.439	0.148	0.539	0.168	0.417	
AA455521	E2F transcription factor 5, p130-binding	-0.225	0.009	0.269	0.326	0.226	-0.791	
AA446027	Early growth response 2 (Krox-20 (Drosophila) homolog)	-0.544	-0.396	0.087	0.136	-0.145	0.578	
AA486533	Early growth response protein 1	0.041	0.354	-0.322	0.045	0.101	1.521	
AA406040	Edg-2	-0.172	-0.536	0.213	-0.208	0.057	1.261	
T66980	Egf-like module containing, mucin-like, hormone receptor-like sequence 1	-0.456	-0.031	-0.332	-0.027	-0.298	1.535	
R39111	EGR3	-0.744	-0.309	-0.545	-0.605	-0.572	1.164	
AA845015	Elastase 1, pancreatic (elastase IIA)	0.179	0.285	0.501	0.648	1.027	1.210	
AA845167	ELASTASE IIIA PRECURSOR	0.107	0.257	0.129	0.371	0.044	0.025	
W45415	ELASTASE IIIB PRECURSOR	-0.878	-0.767	-0.713	-2.237	-1.660	1.046	
T57919	Electron-transfer-flavoprotein, alpha polypeptide (glutaric aciduria II)	-0.108	0.296	0.281	0.545	0.688	1.046	
AA844141	ELK1, member of ETS oncogene family	-0.044	-0.164	0.322	0.252	-0.233	-0.590	
H61758	ELK4, ETS-domain protein (SRF accessory protein 1) NOTE: Symbol and name provisional	-0.121	0.161	0.267	0.341	0.163	-0.126	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA446108	Endoglin (Osler-Rendu-Weber syndrome 1)	2.203	0.880	1.254	2.231	1.594	-1.415	
R20686	Endothelial differentiation protein (edg-1)	-0.311	-0.083	-0.038	0.018	0.083	1.362	
H11003	Endothelin 1 (alternative products)	-0.278	-0.261	0.303	0.002	0.146	1.536	
T67004	Endothelin 3	0.123	0.258	0.262	0.252	0.075	0.842	
AA279429	Endothelin converting enzyme 1	-0.065	-0.270	-0.225	-0.261	-0.243	-0.116	
AA450009	Endothelin receptor type A	-0.178	0.146	0.305	0.092	0.497	0.811	
H28710	Endothelin receptor type B	0.425	0.355	0.473	0.440	0.327	1.342	
AA450123	Enolase 2, (gamma, neuronal)	0.850	0.287	0.630	0.530	0.677	-0.060	
AA029419	Envoplakin	0.634	0.204	0.136	0.351	-0.237	-0.140	
R02373	Enyl-coA: hydratase 3-hydroxyacyl-coA dehydrogenase	1.384	0.450	0.803	0.982	1.268	-2.822	
AA857015	EPH-RELATED RECEPTOR TYROSINE KINASE LIGAND 1 PRECURSOR	0.430	0.614	0.244	0.209	0.498	-1.100	
W48713	Epidermal growth factor receptor	-0.180	-0.095	0.247	-0.017	0.174	-0.641	
AA490223	Epidermal growth factor receptor pathway substrate 15	-0.359	-0.194	0.016	-0.458	-0.359	1.229	
AA838691	Epoxide hydrolase 1, microsomal (xenobiotic)	-0.318	-0.072	0.112	0.238	0.228	1.420	
R73525	Epoxide hydrolase 2, cytoplasmic	-0.433	0.268	-0.153	-0.287	-0.467	-0.094	
H27912	ER LUMEN PROTEIN RETAINING RECEPTOR 1	0.127	0.387	0.171	0.097	0.693	-0.228	
AA626867	ER LUMEN PROTEIN RETAINING RECEPTOR 2	-0.401	-0.051	-0.044	-0.204	-0.200	0.744	
AA446928	ERBB-2 RECEPTOR PROTEIN-TYROSINE KINASE PRECURSOR	-1.006	-0.404	-0.746	-0.322	-0.562	0.629	
AA446103	ERGIC-53 PROTEIN PRECURSOR	-0.268	0.237	0.659	0.517	0.072	1.748	
R62817	ERYTHROCYTE BAND 7 INTEGRAL MEMBRANE PROTEIN	0.082	0.441	0.176	0.251	0.495	1.783	
AA449835	Erythrocyte membrane protein band 4.2	0.837	0.035	0.528	0.029	0.367	1.229	
N55461	Erythrocyte membrane protein band 4.9 (dematin)	-0.555	-0.355	-0.106	-0.642	-0.320	0.741	
T48950	ERYTHROCYTE PLASMA MEMBRANE 50 KD GLYCOPROTEIN	0.305	0.542	-0.196	-0.211	0.342	-0.258	
AA001897	Erythroid alpha-spectrin	0.325	-0.033	0.521	-0.012	-0.074	1.398	
H15574	Erythropoietin receptor	-0.222	0.278	0.026	-0.014	0.664	1.524	
T64482	Esterase D/formylglutathione hydrolase	0.962	0.131	0.502	0.106	0.082	1.295	
AA291749	Estrogen receptor	-0.855	-0.284	-0.390	-0.739	0.907	0.938	
AA010400	Ets variant gene 4 (E1A enhancer-binding protein, E1AF)	0.444	0.666	0.112	0.277	0.881	1.301	
AA460265	ETS-RELATED PROTEIN ERM	0.429	0.390	0.645	0.349	-0.038	2.204	
H81220	ETS-RELATED TRANSCRIPTION FACTOR ELF-1	-0.175	0.174	0.076	0.265	0.061	1.895	
N79030	EUKARYOTIC INITIATION FACTOR 4A-LIKE NUK-34	0.231	0.221	0.363	0.175	0.707	1.928	
AA872402	EUKARYOTIC INITIATION FACTOR 4B	0.221	0.440	0.553	0.114	0.642	1.963	
AA456664	EUKARYOTIC PEPTIDE CHAIN RELEASE FACTOR SUBUNIT 1	-0.295	0.045	-0.043	0.142	-0.353	-0.028	
R43768	Eukaryotic translation elongation factor 2	-0.261	0.401	0.058	-0.029	0.579	-0.569	
AA669452	Eukaryotic translation initiation factor 2A	1.166	0.272	0.740	0.487	0.622	0.486	
H63361	Eukaryotic translation initiation factor 2B (eIF-2B) alpha subunit	-0.150	0.254	0.053	0.142	0.467	0.825	
AA936783	Eukaryotic translation initiation factor 3 (eIF-3) p36 subunit	-0.061	-0.142	-0.289	-0.631	-0.079	1.888	
N95165	Eukaryotic translation initiation factor 4A (eIF-4A) isoform 2	0.107	0.501	0.007	-0.025	0.304	0.352	
AA194246	Eukaryotic translation initiation factor 4E	-0.391	0.264	-0.060	-0.086	0.693	0.713	
AA669443	Eukaryotic translation initiation factor 5 (eIF5)	-0.041	-0.361	0.119	-0.331	-0.180	0.787	
AA181023	Ev-1	-0.428	-0.472	-0.802	-0.441	-0.935	0.906	
AA411380	EVIZ1 PROTEIN PRECURSOR TROPIC VIRAL INTEGRATION SITE 2A PROTEIN)	-0.074	-0.247	0.444	-0.110	-0.067	0.871	
AA159620	EVIZ2 PROTEIN PRECURSOR TROPIC VIRAL INTEGRATION SITE 2B PROTEIN)	-0.077	0.516	-0.207	-0.074	-0.337	1.033	
R32756	Ewing sarcoma breakpoint region 1	0.052	0.328	-0.028	0.101	0.758	0.953	
T95289	Excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes over	0.480	1.577	0.660	0.179	0.735	1.253	
R54492	Excision repair cross-complementing rodent repair deficiency, complementation group 2 (xeroderma pi	0.821	0.188	0.147	0.242	0.223	1.359	
AA453742	EXCITATORY AMINO ACID TRANSPORTER 1	-0.785	-0.360	-1.140	-0.506	-0.005	-0.001	
W25105	Exostoses (multiple) 2	0.963	0.593	0.345	-0.119	0.836	1.481	
AA487582	EXT1	0.539	0.606	0.510	0.448	0.185	1.300	
AA454819	EXTRACELLULAR SIGNAL-REGULATED KINASE 1	0.525	0.339	-0.047	0.323	0.520	0.734	
AA400982	EXTRACELLULAR SIGNAL-REGULATED KINASE 3	0.527	0.496	0.038	0.430	0.617	0.745	
AA463924	Factor VIII INTRON 22 PROTEIN	-0.375	-0.177	0.122	-0.688	-0.281	0.912	
H62396	Fanconi anemia complementation group C	0.160	-0.016	0.117	0.418	0.509	0.957	
AA644129	Fanconi anemia, complementation group A	0.684	0.251	0.302	0.289	-0.056	0.502	
T65790	Farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltransferase, ger	0.099	0.186	0.284	0.054	0.892	0.869	
AA679352	FARNESYL-DIPHOSPHATE FARNESYLTRANSFERASE	0.022	-0.006	0.299	-0.150	-0.117	-0.362	
AA112105	Farnesyltransferase, CAAX box, alpha	-0.235	-0.210	-0.202	-0.450	-0.628	1.028	
T53220	Fatty acid binding protein 2, intestinal	-0.149	-0.437	-0.119	-0.628	-0.467	1.776	
N52901	Fatty acid binding protein 4, adipocyte	0.048	0.341	0.048	0.246	0.280	0.847	
AA148548	FATTY ACID-BINDING PROTEIN, HEART	0.005	0.066	0.240	0.196	0.115	0.026	
AA634109	Fc fragment of IgG, low affinity Ila, receptor for (CD32)	0.217	0.374	0.293	0.550	0.574	0.524	
T64883	Ferrochelatase (protoporphyrin)	0.880	0.691	0.366	0.206	0.162	0.548	
AA663986	Fibrillarin	-0.088	-0.177	0.138	0.008	0.556	0.914	
AA418674	Fibrillin 1 (Marfan syndrome)	0.791	0.731	0.110	0.179	0.179	0.302	
W58367	Fibrillin 2	0.278	-0.169	0.241	0.939	0.219	1.304	
T74257	FIBRINOGEN BETA CHAIN PRECURSOR	-0.075	-0.266	-0.112	-0.208	-0.333	2.247	
T94279	FIBRINOGEN GAMMA-A CHAIN PRECURSOR	0.344	0.781	0.601	0.985	0.152	1.378	
AA011414	Fibrinogen, A alpha polypeptide	-0.343	-0.455	0.285	0.307	-0.410	-0.059	
AA015914	Fibroblast growth factor 1 (acidic)(alternative products)	0.237	0.226	-0.704	-0.062	-0.763	0.863	
W51760	Fibroblast growth factor 2 (basic)	0.522	0.522	0.127	0.256	0.718	0.899	
AA009609	Fibroblast growth factor 7 (keratinocyte growth factor)	-0.302	0.131	0.187	0.143	0.446	0.400	
AA443093	Fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, cra	-0.021	0.353	0.102	-0.194	-0.050	0.909	
AA419620	Fibroblast growth factor receptor 3 (achondroplasia, thanatophoric dwarfism)	0.117	0.275	0.340	0.059	0.571	0.753	
AA446876	Fibroblast growth factor receptor 4	0.383	-0.298	-0.007	0.296	0.052	0.510	
AA485748	Fibromodulin	0.344	0.279	0.435	0.357	0.247	1.078	
AA489587	Fibronectin 1	0.096	0.180	0.017	-0.535	-0.393	1.136	
AA134871	Fibulin 1	-0.129	0.137	0.167	0.599	0.192	1.339	
AA452840	Fibulin 2	0.023	0.104	0.077	-0.046	0.311	0.635	
AA598978	Filamin 1 (actin-binding protein-280)	0.182	0.158	0.364	0.064	0.262	0.325	
AA625981	FK506-binding protein 1 (12kD)	-0.049	0.254	-0.087	0.149	0.725	0.494	
AA482251	FK506-binding protein 3 (25kD)	0.283	0.032	0.187	-0.316	-0.265	0.315	
R75820	FK506-BINDING PROTEIN PRECURSOR	0.768	0.837	0.824	0.440	1.692	0.020	
N91952	FKBP-RAPAMYCIN ASSOCIATED PROTEIN	0.003	0.207	-0.051	-0.146	0.543	1.015	
AA620553	FLAP ENDONUCLEASE-1	0.933	-0.082	0.173	-0.169	-0.322	0.880	
H52119	Flavin containing monooxygenase 5	-0.959	-0.668	-0.539	-0.697	-0.280	0.775	
AA047666	Flavin-containing monooxygenase 1	0.205	-0.085	0.272	-0.076	-0.109	0.952	
H71848	Flavin-containing monooxygenase 2	-0.445	0.161	0.094	0.342	0.314	0.819	
N31492	Flavin-containing monooxygenase 4	-0.333	-0.451	0.280	0.510	-0.325	0.552	
AA521453	Flightless I (Drosophila) homolog	0.124	0.285	-0.105	0.259	0.537	0.584	
T52674	Fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)	0.041	0.343	0.342	0.072	0.905	0.345	
R24530	Folate receptor 1 (adult)	-0.451	0.036	-0.011	-0.137	0.585	0.322	
AA453816	FOLATE RECEPTOR BETA PRECURSOR	0.613	-0.081	0.055	-0.845	0.063	0.390	
W47362	FOLATE RECEPTOR GAMMA PRECURSOR	-0.095	-1.022	-0.863	-1.180	-0.817	0.555	
AA458992	Follicular lymphoma variant translocation 1	0.511	0.004	0.287	-0.036	0.907	0.895	
AA425767	Formyl peptide receptor 1	-0.112	0.097	0.383	-0.236	0.579	0.889	
R79948	Formyl peptide receptor-like 1	-1.036	-0.306	-0.447	-0.700	0.113	0.982	
H96643	FOS-RELATED ANTIGEN 1	-0.682	-0.838	-0.562	-0.698	-0.483	0.424	
T58873	FOS-RELATED ANTIGEN 2	0.584	1.086	0.808	0.857	0.596	0.696	
AA256123	Fragile histidine triad gene product	-0.757	-0.322	-0.816	-0.356	-0.143	-0.496	
N48355	Fragile X mental retardation 1	-0.279	0.092	0.142	-0.366	0.670	0.075	
AA253413	Friedreich ataxia	-0.044	0.133	0.248	-0.202	0.487	0.473	
N50806	Friend leukemia virus integration 1	-0.207	0.166	0.099	0.037	0.360	0.488	
AA699427	Fructose-bisphosphatase 1	-0.127	0.136	0.148	-0.249	0.077	0.504	
N95761	Fucosidase, alpha-L-1, tissue	-0.840	-0.876	-0.714	-1.301	-0.411	0.477	
R25419	Fucosyltransferase 4 (alpha (1,3) fucosyltransferase, myeloid-specific)	0.587	0.444	0.557	0.425	0.421	0.842	
AA026918	Fumarate hydratase	0.615	0.351	0.175	0.439	0.131	0.956	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
W64120	Fumarylacetoacetate	-0.066	-0.776	0.084	0.325	-0.439	0.692	
N66144	FYN oncogene related to SRC, FGR, YES	0.541	0.753	-0.112	0.131	0.268	0.095	
AA291284	G protein-coupled receptor kinase 6	-0.186	-0.342	0.083	-0.126	-0.437	0.246	
N23898	G PROTEIN-COUPLED RECEPTOR KINASE GRK4	-0.151	-0.078	0.336	-0.126	0.859	0.245	
AA862435	G PROTEIN-COUPLED RECEPTOR KINASE GRK5	-0.844	-0.767	-1.260	-0.286	-1.256	-0.204	
AA486233	G1 to S phase transition 1	1.467	0.502	1.413	0.936	0.787	0.311	
AA451686	G1/S-SPECIFIC CYCLIN C	0.664	0.645	0.644	-0.363	-0.158	0.527	
H96241	GA-binding protein transcription factor, alpha subunit (80kD)	0.456	0.478	0.129	0.378	0.304	0.450	
H91651	GA-binding protein transcription factor, beta subunit 2 (47kD)	0.451	0.425	0.174	0.462	0.219	0.282	
AA857212	Galactose-1-phosphate uridylyl transferase	-0.089	0.145	0.294	0.219	-0.092	0.415	
AA878809	Galactosidase, beta 1	-0.376	0.119	-0.218	-0.583	0.518	0.996	
AA872387	GALECTIN-2	0.012	-0.453	0.213	-0.161	-0.148	0.817	
AA780079	GAMMA CRYSTALLIN A	-0.500	0.045	0.158	0.454	-0.014	0.709	
T60048	Gamma-actin, enteric smooth muscle form	0.347	0.197	0.599	0.227	0.120	0.363	
R38700	Gamma-aminobutyric acid (GABA) A receptor, alpha 6	0.503	0.848	0.151	-0.150	0.657	0.669	
R45230	Gamma-aminobutyric acid (GABA) A receptor, beta 1	0.036	0.467	-0.059	0.199	0.908	0.867	
R40790	Gamma-aminobutyric acid (GABA) A receptor, gamma 2	-0.228	0.215	-0.258	-0.609	0.251	0.551	
R15455	Gamma-aminobutyric acid A receptor alpha 2 subunit [human, fetal brain, mRNA, 2189 nt]	-1.128	-0.680	-1.124	-1.476	-0.069	0.628	
AA150887	GAMMA-GLUTAMYLTRANSFERASE 5 PRECURSOR	0.078	-0.248	-0.712	-0.389	-0.465	0.695	
AA630800	GAMMA-INTERFERON-INDUCIBLE PROTEIN IP-30 PRECURSOR	-0.054	0.045	0.093	1.480	0.148	0.895	
AA453471	GANGLIOSIDE GM2 ACTIVATOR PRECURSOR	0.170	0.497	-0.298	-0.168	0.036	0.864	
H44032	Gap junction protein, alpha 4, 37kD (connexin 37)	1.198	0.172	0.768	0.777	2.632	1.089	
N62394	Gap junction protein, beta 1, 32kD (connexin 32, Charcot-Marie-Tooth neuropathy, X-linked)	-0.566	-0.713	-0.246	-1.192	-0.803	0.689	
AA490466	Gap junction protein, beta 2, 26kD (connexin 26)	0.110	0.613	0.190	0.136	0.846	0.954	
AA256172	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog	0.017	0.477	0.165	0.210	0.838	0.430	
AA026118	Gastrin-releasing peptide	-0.217	0.296	0.133	-0.115	-0.114	0.487	
R06446	GATA-binding protein 1 (globin transcription factor 1)	0.377	0.155	0.331	0.653	0.293	0.650	
H72875	GATA-binding protein 3	0.509	0.025	0.212	0.451	-0.005	0.850	
H94857	GCN5-like 1	-0.198	0.081	-0.065	-0.309	-0.067	0.743	
AA429310	GC-RICH SEQUENCE DNA-BINDING FACTOR	-0.341	0.223	0.216	0.080	-0.240	0.851	
H72028	GELSOLIN PRECURSOR, PLASMA	-0.296	0.787	-0.057	0.505	0.315	0.864	
H23978	General transcription factor IIB	0.117	0.644	0.196	0.219	0.919	0.836	
AA282092	General transcription factor IIF, polypeptide 1 (74kD subunit)	1.598	0.287	0.749	0.308	1.000	0.922	
AA456147	General transcription factor IIIA	0.232	0.116	0.124	0.015	0.684	1.145	
AA133566	General transcription factor TFIIE beta subunit, 34 kD	-0.182	0.269	0.126	-0.168	0.393	0.862	
AA539554	Germ cell nuclear factor [human, embryonal carcinoma NT2/D1, mRNA, 1916 nt]	-0.051	-0.093	0.395	-0.295	0.695	0.424	
AA418036	GLI3 PROTEIN	0.528	0.485	0.480	0.269	0.400	-0.439	
H22653	GLIA MATURATION FACTOR BETA	0.605	0.582	0.291	0.109	0.712	0.765	
AA064114	Glial fibrillary acidic protein	-0.281	-0.298	-0.092	-0.475	0.077	0.701	
R06069	Glucan (1,4-alpha-), branching enzyme 1 (glycogen branching enzyme, Andersen disease, glycogen st	0.251	0.888	0.415	0.064	1.059	0.770	
AA664219	Glucocorticoid receptor	-0.178	0.359	-0.087	0.038	0.579	0.544	
N66871	Glucocorticoid receptor alpha (alternative products)	-0.098	0.095	-0.015	0.058	0.525	0.557	
T67006	Glucokinase regulator	-0.524	-0.132	-0.193	-0.147	-0.129	0.913	
AA035347	Glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID)	2.439	-0.033	2.671	1.246	1.801	0.956	
AA401111	Glucose phosphate isomerase	0.098	-0.509	-0.018	-0.318	-0.281	0.836	
AA406552	GLUCOSE TRANSPORTER TYPE 3, BRAIN	0.365	0.781	0.204	0.215	0.746	0.807	
T98887	Glucose-6-phosphatase	-0.460	-0.427	-0.484	-0.613	-0.121	0.988	
AA410375	Glucose-6-phosphate dehydrogenase	0.085	0.207	-0.001	0.052	0.137	0.803	
AA424938	Glucose-6-phosphate dehydrogenase	0.296	-0.468	-0.488	-0.442	-0.350	0.863	
N34827	Glucuronidase, beta	0.179	0.284	0.321	0.053	-0.005	0.860	
AA018457	Glutamate decarboxylase 1 (brain, 67kD)	0.480	0.360	0.257	0.400	1.043	0.543	
R44005	Glutamate decarboxylase 2	0.360	0.126	0.349	0.083	0.459	-0.060	
H23267	GLUTAMATE RECEPTOR 1 PRECURSOR	0.239	0.493	-0.075	0.035	0.512	0.485	
R36886	GLUTAMATE RECEPTOR 3 PRECURSOR	0.408	0.562	0.137	-0.401	0.730	0.562	
H28734	Glutamate receptor, ionotropic, AMPA 2	0.263	0.705	0.649	0.336	1.323	0.721	
AA058857	Glutamate receptor, ionotropic, kainate 5	0.510	0.526	0.290	0.290	0.715	1.074	
R88267	Glutamate receptor, ionotropic, N-methyl D-aspartate 1	0.155	0.312	0.262	0.584	0.424	1.259	
AA670430	Glutamate receptor, metabotropic 3	-0.816	-0.565	-0.915	-0.783	-1.025	1.054	
W96179	Glutamate-cysteine ligase (gamma-glutamylcysteine synthetase), regulatory (30.8kD)	0.564	0.615	0.409	0.288	0.808	1.260	
H56066	GLUTAMATE-CYSTEINE LIGASE CATALYTIC SUBUNIT	1.316	1.462	0.800	0.904	0.861	1.036	
H22856	Glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)	-0.770	-0.293	-1.237	-0.890	-0.937	0.862	
AA487521	Glutamic-oxaloacetic transaminase 2, mitochondrial (aspartate aminotransferase 2)	0.264	-0.133	0.260	0.598	-0.026	1.053	
AA478571	Glutamine-fructose-6-phosphate transaminase	0.259	0.284	-0.057	0.021	0.345	0.941	
AA634166	GLUTAMINYL-TRNA SYNTHETASE	0.052	0.103	0.188	1.526	0.243	-0.794	
AA102107	Glutamyl aminopeptidase (aminopeptidase A)	-0.581	-0.242	-0.480	-0.706	-0.330	0.449	
AA291163	Glutaredoxin (thioltransferase)	-0.091	0.140	-0.429	-0.006	-0.226	0.769	
R56638	Glutaryl-Coenzyme A dehydrogenase	-0.579	-0.780	-0.392	-0.934	-0.447	0.675	
AA485362	Glutathione peroxidase 1	0.294	0.147	0.508	0.160	0.916	0.804	
AA135152	Glutathione peroxidase 2, gastrointestinal	-0.441	0.377	-0.227	0.099	0.494	0.752	
AA664180	Glutathione peroxidase 3 (plasma)	-0.777	-0.550	-0.410	-0.846	-0.589	0.862	
AA772789	Glutathione reductase	0.461	0.246	-0.132	-0.006	0.593	0.914	
T73468	Glutathione S-transferase A2	0.591	0.255	0.443	0.752	0.435	0.999	
N30096	Glutathione S-transferase A3	-0.481	-0.449	-0.227	-0.413	0.037	0.988	
AA142971	Glutathione S-transferase M2 (muscle)	0.582	1.044	0.377	0.220	0.467	0.817	
R63065	Glutathione S-transferase M3 (brain)	1.295	1.598	1.286	0.668	1.002	0.277	
AA290738	Glutathione S-transferase M4	-0.062	0.161	0.026	-0.124	0.059	0.373	
AA486570	Glutathione S-transferase M4	-0.500	-0.099	0.043	-0.026	0.499	0.702	
AA056232	Glutathione S-transferase M5	0.647	0.630	0.141	0.393	0.752	0.060	
H99813	Glutathione S-transferase theta 1	-0.493	-0.438	-0.350	-0.073	-0.035	0.845	
AA490208	Glutathione S-transferase theta 2	0.675	0.582	0.206	0.173	0.774	0.873	
AA495936	GLUTATHIONE S-TRANSFERASE, MICROSOMAL	0.366	0.480	0.250	0.123	0.812	1.011	
AA463458	Glutathione synthetase	0.504	0.487	0.408	0.013	1.126	0.908	
R33642	Glutathione-S-transferase pi-1	-0.297	-0.321	0.083	0.280	-0.073	0.919	
AA405987	Glycerol kinase 2 (testis specific)	0.104	0.099	0.558	0.248	0.848	0.580	
AA005219	Glycerol-3-phosphate dehydrogenase 2 (mitochondrial)	0.006	-0.079	-0.311	-0.088	0.310	0.569	
R28294	GLYCINE CLEAVAGE SYSTEM H PROTEIN PRECURSOR	-0.534	0.008	-0.027	-0.231	0.238	0.659	
N58494	Glycine cleavage system protein P (glycine decarboxylase)	-0.010	-0.176	0.290	0.269	-0.201	1.039	
N59532	Glycine cleavage system protein T (aminomethyltransferase)	2.518	0.502	1.388	2.046	1.080	1.055	
AA922705	Glycogen phosphorylase B (brain form)	0.118	0.621	0.254	0.090	-0.026	0.517	
AA496032	GLYCOGEN PHOSPHORYLASE, MUSCLE FORM	-0.169	-0.230	0.210	1.054	-0.412	0.688	
N52282	Glycogen synthase [human, liver, mRNA, 2912 nt]	0.426	0.391	0.282	0.107	0.589	0.780	
H08732	Glycogen synthase 1 (muscle)	0.129	-0.048	0.362	0.226	0.135	0.873	
N70285	Glycophorin A	-0.722	-0.590	-0.444	-0.724	-0.267	0.879	
AA455338	Glycophorin B	0.019	-0.005	0.176	0.008	0.251	0.691	
N77392	Glycophorin C	0.179	0.376	0.471	0.793	0.582	0.218	
T50527	Glycophorin E	-0.146	0.316	-0.002	0.022	0.037	0.177	
AA677403	GLYCOPROTEIN HORMONES ALPHA CHAIN PRECURSOR	0.661	-0.009	0.470	0.779	0.065	0.173	
N92319	Glycoprotein Ib (platelet), beta polypeptide	-0.283	-0.033	-0.191	-0.095	-0.015	0.385	
AA476587	GLYCYLPEPTIDE N-TETRADECANOYLTRANSFERASE	0.295	0.976	1.130	0.698	1.125	0.580	
AA629909	Glycyl-tRNA synthetase	-0.880	-0.377	-0.406	-0.638	-0.045	0.788	
AA455896	Glypican 1	0.176	0.102	-0.148	-0.216	0.697	0.231	
AA043996	Gonadotropin-releasing hormone (leutinizing-releasing hormone)	-0.496	-0.051	0.063	0.069	0.512	0.485	
R44739	GRANULIN	-0.176	0.122	0.114	0.150	0.095	0.344	
AA431832	Granulin	-0.082	-0.035	0.267	-0.181	0.003	0.764	
T57859	Granulocyte colony-stimulating factor induced gene [human, CML patient, bone marrow mononuclear c	0.332	0.325	0.161	0.209	0.385	0.958	
AA283007	GRANZYME A PRECURSOR	0.156	0.630	0.151	0.386	0.285	1.057	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA005382	Granzyme K (serine protease, granzyme 3)	-0.426	0.037	-0.044	0.145	0.512	0.455	
AA478543	GRAVIN	0.020	0.059	-0.005	0.053	0.219	1.005	
AA485646	G-rich RNA sequence binding factor 1	-0.816	-0.379	-0.617	-0.980	-0.559	0.747	
W46900	GRO1 oncogene (melanoma growth stimulating activity, alpha)	0.032	-0.017	-0.394	-0.245	0.131	0.647	
R89567	Group-specific component (vitamin D binding protein)	0.399	0.387	0.060	0.015	0.739	0.577	
AA025819	Growth arrest-specific 1	0.259	0.435	-0.039	0.262	0.659	0.742	
H05445	Growth associated protein 43	0.563	0.814	0.353	-0.152	0.742	0.242	
AA449831	Growth factor receptor-bound protein 2	-0.069	0.173	0.225	0.198	0.949	-0.759	
AA775738	Growth hormone receptor	0.441	0.313	0.399	0.838	0.036	0.096	
AA278698	GS1 PROTEIN	0.315	0.219	0.227	0.121	0.314	0.582	
AA443688	GTP cyclohydrolase 1 (dopa-responsive dystonia) (alternative products)	0.319	0.104	-0.205	0.178	0.329	0.719	
N99098	GTPase-activating protein ras p21 (RASA)	0.351	0.590	0.225	0.186	0.883	0.909	
H92232	Guanine nucleotide binding protein (G protein), alpha 11 (Gq class)	0.290	0.261	0.143	0.208	0.216	1.166	
T99303	Guanine nucleotide binding protein (G protein), alpha 15 (Gq class)	-0.425	-0.291	-0.120	-0.127	0.151	1.008	
H49592	Guanine nucleotide binding protein (G protein), alpha activating activity polypeptide, oilfactory type	0.641	0.638	-0.025	-0.164	0.490	0.821	
AA406364	Guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1	0.830	0.501	0.100	-0.482	0.639	0.774	
AA071330	Guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 2	-0.235	0.108	0.196	0.467	0.352	0.583	
AA112660	Guanine nucleotide binding protein (G protein), alpha stimulating activity polypeptide 1	0.308	-0.326	0.081	-0.845	-0.235	-0.356	
W02431	Guanine nucleotide binding protein (G protein), alpha transducing activity polypeptide 1	0.050	0.238	0.212	0.279	0.316	-0.113	
R56046	Guanine nucleotide binding protein (G protein), alpha z polypeptide	0.090	0.401	0.246	0.082	0.901	-0.808	
AA487912	Guanine nucleotide binding protein (G protein), beta polypeptide 1	0.861	0.697	0.409	0.337	0.542	-0.274	
R62220	GUANINE NUCLEOTIDE-BINDING PROTEIN BETA SUBUNIT-LIKE PROTEIN 12.3	-0.166	-0.035	-0.183	0.101	0.270	0.258	
AA486850	Guanylate binding protein 1, interferon-inducible, 67kD	0.909	0.935	0.515	0.239	0.461	0.563	
W21127	Guanylate cyclase 1, soluble, alpha 2	0.330	0.349	0.094	-0.057	0.594	0.654	
AA458785	GUANYLATE CYCLASE SOLUBLE, BETA-1 CHAIN	0.133	0.750	0.616	0.684	0.261	0.649	
AA703392	H factor (complement)-like 1	0.483	0.415	-0.071	0.190	0.677	0.671	
AA133212	H. sapiens cDNA for RFG	-0.204	0.156	0.134	0.094	-0.047	0.880	
AA481332	H. sapiens RNA for CLCN3	0.164	0.836	0.069	0.221	-0.153	0.674	
W45690	H.sapiens 40 kDa protein kinase related to rat ERK2	-0.764	0.363	-0.941	0.190	0.112	0.443	
AA425666	H.sapiens 5T4 gene for 5T4 Oncofetal antigen	0.054	0.648	-0.104	-0.210	0.013	0.126	
AA625628	H.sapiens 6C6-Ag mRNA	0.438	0.075	-0.232	0.291	0.374	-0.643	
AA664241	H.sapiens alpha NAC mRNA	0.410	0.577	-0.091	0.056	0.364	0.999	
N70349	H.sapiens ART4 gene	-0.203	-0.019	-0.242	-0.227	0.058	-0.181	
AA028621	H.sapiens beta glucuronidase pseudogene	0.246	0.073	1.168	-0.227	0.179	-0.203	
AA425687	H.sapiens d.1042 mRNA of DEAD box protein family	0.496	0.504	0.350	-0.097	0.388	0.729	
AA458861	H.sapiens DAP-1 mRNA	0.273	0.704	0.321	0.711	0.125	0.583	
T50096	H.sapiens DAP-3 mRNA	0.389	0.439	-0.090	-0.161	0.108	0.710	
AA025275	H.sapiens DAP-kinase mRNA	1.128	0.363	1.634	1.036	1.271	0.716	
AA633811	H.sapiens E4BP4 gene	0.186	0.184	0.180	-0.148	0.325	0.576	
R77251	H.sapiens E-MAP-115 mRNA	0.299	0.178	0.077	-0.261	0.697	0.601	
AA775410	H.sapiens EMX1 mRNA	-0.067	-0.101	0.441	0.799	-0.026	0.819	
AA443899	H.sapiens encoding CLA-1 mRNA	-0.059	-0.671	0.149	-0.210	0.083	-0.646	
AA629804	H.sapiens endonuclease G (ENDOG) mRNA	-0.215	-0.512	-0.244	0.113	0.055	-0.168	
AA598676	H.sapiens ERC-55 mRNA	0.383	0.757	0.404	0.923	0.074	0.528	
AA424743	H.sapiens ERF-1 mRNA 3' end	0.639	0.685	0.632	0.201	1.211	0.390	
H17504	H.sapiens ERK3 mRNA	0.242	0.477	0.407	0.013	0.724	0.668	
AA122287	H.sapiens gap gene mRNA, complete CDS	-0.196	0.051	-0.066	-0.171	0.349	0.605	
H70775	H.sapiens H2Bf gene	0.216	0.630	0.081	-0.231	1.081	0.415	
AA868008	H.sapiens H4/g gene for H4 histone	-0.354	-0.150	-0.025	0.186	-0.025	0.055	
R44020	H.sapiens HBF-1 mRNA for transcription factor	0.103	0.642	0.610	0.541	0.589	-0.381	
AA481026	H.sapiens hbm mRNA	0.097	0.204	-0.088	-0.297	0.091	0.154	
AA054321	H.sapiens HCG I mRNA	0.021	0.234	0.058	0.094	0.519	0.361	
AA485347	H.sapiens HCG V mRNA	-0.480	-0.109	-1.040	0.139	-0.237	0.617	
AA452084	H.sapiens HE4 mRNA for extracellular proteinase inhibitor homologue	-0.252	-0.935	-0.449	-0.049	0.118	0.369	
AA456088	H.sapiens HEK2 mRNA for protein tyrosine kinase receptor	1.233	0.399	0.162	0.403	0.536	0.473	
N50636	H.sapiens hGDS mRNA for smg GDS	0.247	0.180	0.092	0.082	0.236	0.663	
AA431440	H.sapiens hnRNP-E2 mRNA	-0.125	0.070	0.460	0.124	0.328	0.546	
AA007444	H.sapiens homeobox protein (HOX-11) mRNA, complete cds	1.436	0.935	1.006	0.698	1.009	0.734	
R44870	H.sapiens HPBRII-4 mRNA	0.828	0.444	0.041	0.121	0.437	0.901	
R51209	H.sapiens hPTPA mRNA	1.071	1.854	0.063	1.167	0.360	0.969	
AA131406	H.sapiens Humig mRNA	0.811	0.644	0.451	0.630	0.592	-0.289	
T91261	H.sapiens HUMM9 mRNA	1.214	1.430	0.806	0.596	1.069	-0.460	
AA676470	H.sapiens IAI.3B mRNA	0.028	0.031	-0.031	-0.244	-0.213	-0.110	
AA411324	H.sapiens IL-13Ra mRNA	0.105	-0.003	-0.522	-0.059	-0.028	0.104	
N50544	H.sapiens irB mRNA	0.742	0.795	-0.146	0.199	0.244	0.527	
T61256	H.sapiens KHK mRNA for ketoheokinase, clone pHKHK3a	-0.551	0.701	0.435	-0.634	-0.048	-0.274	
AA453015	H.sapiens L23-related mRNA	0.275	0.038	0.222	0.147	0.182	0.482	
AA504455	H.sapiens LDLC mRNA	-0.026	-0.056	-0.007	-0.123	-0.190	0.527	
AA158991	H.sapiens lrp mRNA	0.071	0.267	0.327	0.470	0.311	0.592	
AA463926	H.sapiens LU gene for Lutheran blood group glycoprotein	0.300	0.284	-0.058	-0.104	0.434	1.071	
AA434391	H.sapiens MADER mRNA	0.634	1.011	0.072	0.087	0.351	0.934	
AA598826	H.sapiens MLN62 mRNA	0.294	0.352	0.123	0.444	0.367	0.751	
R59212	H.sapiens MN1 mRNA	1.720	1.782	0.768	0.342	0.384	0.513	
H45967	H.sapiens mRNA (clone C-2k) mRNA for serine/threonine protein kinase	-0.415	0.005	0.398	0.182	-0.058	-0.250	
AA865729	H.sapiens mRNA (ocular albinism type 1 related)	0.280	0.430	0.141	0.264	0.571	0.141	
AA447742	H.sapiens mRNA dynein-related protein	0.368	0.156	0.128	-0.118	0.432	0.428	
AA670155	H.sapiens mRNA encoding GPI-anchored protein p137	0.636	1.247	-0.165	-0.256	0.416	1.005	
AA425757	H.sapiens mRNA for -14 gene, containing globin regulatory element	0.336	0.402	0.421	0.732	0.290	0.056	
AA487914	H.sapiens mRNA for 17-beta-hydroxysteroid dehydrogenase	0.229	0.209	0.310	0.496	0.370	-0.007	
R87497	H.sapiens mRNA for 2.19 gene	-0.328	-0.441	0.757	1.135	0.447	0.383	
N34372	H.sapiens mRNA for 218kD Mi-2 protein	0.048	0.363	-0.688	0.152	-0.294	0.935	
AA454852	H.sapiens mRNA for 55.11 binding protein	0.111	0.035	0.502	0.552	0.864	1.041	
AA598861	H.sapiens mRNA for a cell surface protein	-0.851	-0.358	-0.434	-0.411	0.044	1.062	
R68237	H.sapiens mRNA for activin type II receptor	-0.381	-0.369	-0.122	0.168	-0.360	0.911	
N49204	H.sapiens mRNA for acylphosphatase, muscle type (MT) isoenzyme	0.783	0.708	0.603	0.620	0.954	0.886	
AA630620	H.sapiens mRNA for adaptor protein p150	0.445	0.367	-0.122	0.235	-0.280	0.175	
AA700054	H.sapiens mRNA for adipophilin	0.601	-1.172	0.796	-0.975	-0.573	0.286	
T54462	H.sapiens mRNA for AFX protein	0.126	0.122	0.597	1.440	0.106	0.413	
H11808	H.sapiens mRNA for AICL (activation-induced C-type lectin)	-0.028	0.419	0.169	0.177	0.152	0.082	
AA609609	H.sapiens mRNA for alkB protein homolog	-0.224	-0.056	-0.432	-0.335	-0.231	0.025	
AA463498	H.sapiens mRNA for alpha 4 protein	0.367	0.166	0.691	0.237	0.374	0.170	
AA497038	H.sapiens mRNA for alpha endosulfine	0.281	0.218	0.286	0.224	0.649	0.716	
R40850	H.sapiens mRNA for alpha-centractin	0.280	0.267	-0.201	0.177	0.146	0.806	
R40850	H.sapiens mRNA for alpha-centractin	0.477	0.525	0.157	-0.095	0.153	0.591	
R32450	H.sapiens mRNA for aminopeptidase	-0.223	-0.040	0.134	0.445	0.145	1.007	
AA453477	H.sapiens mRNA for aminopeptidase P-like	0.036	-0.212	-0.055	-0.299	0.002	0.187	
AA018906	H.sapiens mRNA for AP-2 beta transcription factor	0.156	0.359	0.986	1.615	0.141	0.187	
N95381	H.sapiens mRNA for apoptosis specific protein	-0.630	-0.842	-0.421	-0.539	-1.000	0.390	
N21334	H.sapiens mRNA for Arg protein tyrosine kinase-binding protein	0.229	0.156	-0.020	0.014	0.791	-0.184	
AA778346	H.sapiens mRNA for arginine methyltransferase	0.757	0.677	0.562	0.715	0.320	-0.188	
AA676836	H.sapiens mRNA for ASM-like phosphodiesterase 3a	0.409	0.568	-0.005	1.063	0.779	0.238	
H92234	H.sapiens mRNA for axonal transporter of synaptic vesicles	0.151	0.434	0.386	0.606	0.630	0.302	
AA460836	H.sapiens mRNA for basic transcription factor 2, 34 kD subunit	0.562	1.519	0.615	0.431	0.338	0.545	
AA598868	H.sapiens mRNA for beta-COP	0.602	0.482	0.415	0.298	0.338	0.905	
AA171449	H.sapiens mRNA for biphenyl hydrolase-related protein	-0.196	0.189	0.325	0.031	-0.023	0.670	
AA417881	H.sapiens mRNA for bleomycin hydrolase	-0.172	-0.207	0.548	0.739	-0.014	0.670	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA683058	H.sapiens mRNA for BS69 protein	0.232	0.371	0.232	1.469	0.198	0.416	
N22178	H.sapiens mRNA for C1D protein	0.438	0.577	1.101	1.859	0.263	0.483	
AA420997	H.sapiens mRNA for callicin (partial)	0.203	0.158	0.368	-0.132	0.639	0.506	
N72193	H.sapiens mRNA for caltractin	-0.047	0.375	-0.011	-0.215	0.511	0.904	
R61503	H.sapiens mRNA for canalicular multidrug resistance protein	0.454	0.720	0.353	0.480	-0.101	0.155	
AA045523	H.sapiens mRNA for centrin gene	-0.172	0.378	0.030	0.034	0.005	-0.478	
AA040280	H.sapiens mRNA for CHD5 protein	0.358	0.085	0.285	0.319	0.523	-0.720	
W58658	H.sapiens mRNA for CLPP	0.486	0.607	1.325	3.090	0.014	0.264	
AA082943	H.sapiens mRNA for cyclin G1	-0.552	0.077	-0.060	-0.355	0.215	-0.506	
AA488072	H.sapiens mRNA for cytokine inducible nuclear protein	-0.162	-0.337	-0.227	-0.748	-0.226	0.102	
AA422058	H.sapiens mRNA for D1075-like gene	-0.024	-0.080	-0.077	0.150	0.005	0.676	
AA033564	H.sapiens mRNA for DGCR6 protein	0.491	0.135	-0.358	-0.043	-0.358	0.262	
AA043347	H.sapiens mRNA for disintegrin-metalloprotease (partial)	0.504	0.274	0.098	0.304	0.309	0.546	
N33820	H.sapiens mRNA for diubiquitin	-0.086	0.396	-0.001	0.266	0.407	0.548	
H09055	H.sapiens mRNA for DNA (cytosin-5)-methyltransferase	-0.342	0.185	0.154	0.518	0.212	0.738	
H09055	H.sapiens mRNA for DNA (cytosin-5)-methyltransferase	0.269	0.468	0.037	0.019	-0.022	0.894	
R54359	H.sapiens mRNA for DNA ligase IV	-0.079	0.028	0.321	0.132	0.054	0.278	
AA0945	H.sapiens mRNA for DRES9 protein	0.605	0.534	0.782	0.839	0.846	0.317	
AA488188	H.sapiens mRNA for dynactin	0.215	0.416	0.296	-0.172	0.650	1.309	
H91778	H.sapiens mRNA for E-cadherin	-0.124	-0.009	0.020	-0.174	0.370	-0.164	
R43973	H.sapiens mRNA for elongation factor-1-gamma	-0.057	-0.127	0.191	0.149	-0.054	0.343	
R43973	H.sapiens mRNA for elongation factor-1-gamma	0.318	0.205	0.047	-0.275	0.229	0.078	
R45183	H.sapiens mRNA for elongations factor Tu-mitochondrial	-0.358	0.569	0.689	-0.362	-0.715	0.564	
R45183	H.sapiens mRNA for elongations factor Tu-mitochondrial	-0.523	1.454	-0.847	-0.364	-0.676	0.611	
W40577	H.sapiens mRNA for ESM-1 protein	0.712	0.615	-0.002	0.337	0.344	0.347	
AA167223	H.sapiens mRNA for extracellular matrix protein collagen type XIV, C-terminus	0.405	0.883	0.368	0.416	0.290	0.705	
W93092	H.sapiens mRNA for FAN protein	0.760	0.978	0.444	0.750	0.273	0.998	
W72310	H.sapiens mRNA for FAST kinase	0.184	0.546	0.272	0.142	0.642	0.257	
H56349	H.sapiens mRNA for fibrinogen-like protein (pT49 protein)	-0.377	-0.042	-0.731	-0.105	-0.522	0.435	
AA709158	H.sapiens mRNA for G13 protein	-0.087	0.132	0.069	-0.234	0.475	0.490	
AA434117	H.sapiens mRNA for G9a	-0.177	0.204	-0.153	0.227	0.430	0.935	
AA453813	H.sapiens mRNA for Gal-beta(1-3/1-4)GlcNAc alpha-2,3-sialyltransferase	0.021	0.361	0.209	0.242	0.173	0.704	
N78621	H.sapiens mRNA for gamma-adaptin	0.364	0.631	-0.263	-0.088	-0.136	0.435	
R55620	H.sapiens mRNA for GlcNAc-1-P transferase	0.167	0.438	1.028	0.323	0.401	0.768	
AA282134	H.sapiens mRNA for glutamine cyclotransferase	0.800	0.629	0.560	0.486	0.409	0.662	
AA411679	H.sapiens mRNA for glycogenin	0.126	0.682	0.570	0.374	0.350	0.787	
AA489314	H.sapiens mRNA for gp25L2 protein	0.891	0.672	1.020	0.579	0.342	1.021	
N70544	H.sapiens mRNA for GPIB protein	-0.126	0.446	-0.106	0.357	0.121	0.246	
AA456291	H.sapiens mRNA for GTP-binding protein	-0.245	0.104	0.235	0.125	0.371	0.214	
AA701554	H.sapiens mRNA for hcgVII protein	0.349	0.338	0.727	1.010	0.192	0.494	
AA778629	H.sapiens mRNA for HE3(alpha)	-0.321	-0.180	-0.080	-0.223	0.159	0.681	
H18950	H.sapiens mRNA for hepatocyte nuclear factor 4 gamma	-0.198	0.129	0.646	-0.090	-0.006	0.677	
AA064638	H.sapiens mRNA for herpesvirus associated ubiquitin-specific protease (HAUSP)	-0.221	0.274	0.191	0.198	0.339	0.686	
AA034250	H.sapiens mRNA for HES1 protein	-0.407	0.409	-0.591	-0.729	-0.314	0.610	
AA490471	H.sapiens mRNA for high endothelial venule	0.774	0.338	0.547	0.157	0.326	0.722	
T40541	H.sapiens mRNA for human giant larvae homolog	0.165	0.182	0.241	0.579	-0.050	0.790	
AA035310	H.sapiens mRNA for hypothetical protein downstream of DMPK and DMAHP	0.068	0.037	0.275	1.009	0.030	0.977	
T52362	H.sapiens mRNA for Ichn protein	0.549	0.804	-0.081	0.161	-0.378	1.357	
R52796	H.sapiens mRNA for IL13 receptor	-0.853	-0.352	-0.623	-0.860	-0.689	0.826	
R51362	H.sapiens mRNA for imogen 38	-1.281	-0.978	-1.306	-0.931	-1.047	1.050	
T68773	H.sapiens mRNA for InoP3 5-phosphatase	0.113	0.164	-0.077	-0.391	-0.790	0.712	
H68922	H.sapiens mRNA for integrin, alpha subunit	0.164	0.122	0.400	0.225	0.331	1.068	
T67864	H.sapiens mRNA for inter-alpha-trypsin inhibitor heavy chain H3	0.623	0.902	0.234	0.459	0.033	0.391	
AA456570	H.sapiens mRNA for interferon regulatory factor 3	-0.095	-0.303	0.504	0.210	0.000	0.709	
AA455272	H.sapiens mRNA for ITBA1 protein	-0.488	-0.081	-0.179	-0.198	-0.218	0.343	
AA479062	H.sapiens mRNA for ITBA2 protein	0.618	0.580	0.077	0.407	-0.337	-0.561	
AA774230	H.sapiens mRNA for ITBA4 gene	0.171	0.092	0.170	1.082	-0.179	0.025	
AA454947	H.sapiens mRNA for kinase A anchor protein	0.252	0.091	0.554	-0.334	0.065	-0.657	
T65407	H.sapiens mRNA for L-3-hydroxyacyl-CoA dehydrogenase	0.103	0.491	0.409	0.086	-0.023	0.660	
AA677534	H.sapiens mRNA for laminin	0.075	0.240	0.615	0.837	-0.044	0.947	
AA775091	H.sapiens mRNA for leucine zipper protein	-0.043	-0.112	-0.099	-0.208	-0.154	0.892	
AA088861	H.sapiens mRNA for Li-cadherin	0.382	0.747	-0.086	0.208	0.035	1.502	
AA630320	H.sapiens mRNA for Lon protease-like protein	-0.202	0.094	-0.260	0.520	0.051	0.718	
AA504113	H.sapiens mRNA for M phase phosphoprotein 10	-0.099	0.076	0.064	-0.171	0.277	0.580	
AA401893	H.sapiens mRNA for M130 antigen	1.367	0.878	0.477	1.876	0.557	0.902	
AA448468	H.sapiens mRNA for MACH-alpha-2 protein	0.033	0.277	0.278	0.165	0.429	0.375	
AA455056	H.sapiens mRNA for MAP kinase activated protein kinase	-0.339	-0.218	-0.151	0.111	-0.196	-0.331	
AA126009	H.sapiens mRNA for MAT8 protein	-1.848	-0.843	-0.837	-0.688	-0.800	-0.328	
AA433944	H.sapiens mRNA for mediator of receptor-induced toxicity	0.060	0.341	0.488	0.165	0.718	0.639	
R53541	H.sapiens mRNA for melanoma-associated chondroitin sulfate proteoglycan (MCSP)	0.186	-0.181	0.233	0.041	-0.289	0.653	
R32314	H.sapiens mRNA for membrane-type matrix metalloproteinase 1	-0.352	-0.215	0.361	0.107	0.071	0.750	
H77597	H.sapiens mRNA for metallothionein	0.582	0.124	-0.674	-0.441	-0.018	0.331	
AA281347	H.sapiens mRNA for MHC class I promoter binding protein	0.196	0.693	0.491	0.300	0.708	-0.095	
AA609976	H.sapiens mRNA for mitochondrial capsule selenoprotein	0.060	0.415	-0.184	0.266	0.362	0.338	
H25223	H.sapiens mRNA for Mox-2	0.479	0.540	0.146	0.230	0.191	-0.447	
N29844	H.sapiens mRNA for M-phase phosphoprotein, mpp11	-0.374	-0.315	-0.402	0.074	-0.401	-0.199	
AA706968	H.sapiens mRNA for M-phase phosphoprotein, mpp5	0.353	0.432	0.058	0.185	-0.161	0.256	
AA478525	H.sapiens mRNA for M-phase phosphoprotein, mpp8	-0.087	0.168	0.191	0.004	0.241	-0.293	
W70051	H.sapiens mRNA for M-phase phosphoprotein, mpp9	-0.086	-0.218	0.075	-0.368	-0.376	0.506	
AA421701	H.sapiens mRNA for MUF1 protein	0.223	0.518	0.455	0.296	0.591	0.686	
AA487215	H.sapiens mRNA for myosin light chain kinase	0.289	0.668	-0.056	0.242	0.081	0.651	
AA485871	H.sapiens mRNA for myosin-I beta	0.011	0.533	-0.477	0.060	0.124	0.834	
AA111999	H.sapiens mRNA for NADH dehydrogenase	0.413	0.546	-0.173	0.471	-0.117	-0.013	
AA779401	H.sapiens mRNA for NADP+-dependent malic enzyme	0.417	0.650	0.103	0.037	0.379	0.150	
AA521346	H.sapiens mRNA for Ndr protein kinase	-0.088	0.028	0.093	-0.352	-0.365	-0.084	
AA176957	H.sapiens mRNA for nebulin	-0.169	0.211	0.279	0.298	0.632	0.273	
AA676598	H.sapiens mRNA for nerve growth factor-inducible PC4 homologue	-0.154	0.055	0.231	0.150	0.263	-0.252	
R23251	H.sapiens mRNA for Not56-like protein	0.426	0.100	0.091	0.009	0.340	-0.047	
R27550	H.sapiens mRNA for novel gene in Xq28 region	0.255	0.053	0.610	0.427	0.146	1.196	
R40059	H.sapiens mRNA for nuclear pore complex protein hnp153	-0.055	-0.071	0.372	0.002	-0.076	0.590	
AA504266	H.sapiens mRNA for nuclear protein SA-2	1.768	0.127	1.645	1.022	0.761	0.344	
W86182	H.sapiens mRNA for nuclear protein SDK3, partial	0.082	-0.133	0.735	0.300	0.195	0.455	
AA485958	H.sapiens mRNA for nucleoporin-like protein	0.945	0.697	0.820	0.454	0.545	0.593	
H54417	H.sapiens mRNA for nucleoside-diphosphate kinase	0.274	0.083	-0.309	0.154	0.058	0.396	
AA488609	H.sapiens mRNA for Nup88 protein	0.195	0.224	0.343	0.336	0.298	0.273	
AA447727	H.sapiens mRNA for orphan nuclear hormone receptor	-0.282	-0.423	0.218	0.116	0.331	0.167	
AA418466	H.sapiens mRNA for p0071 protein	-0.505	-0.137	0.151	-0.085	-0.069	0.305	
AA778919	H.sapiens mRNA for P2Y6 receptor	0.308	0.183	0.202	0.061	0.094	-0.071	
AA481759	H.sapiens mRNA for p35, cyclin-like CAK1-associated protein	-0.416	0.085	0.039	-0.302	0.822	0.696	
R59621	H.sapiens mRNA for p40	-0.190	-0.081	0.151	-0.208	-0.391	0.053	
AA465389	H.sapiens mRNA for p40phox	0.506	0.128	0.202	0.712	0.210	-0.225	
AA169832	H.sapiens mRNA for PAPS synthetase	0.212	1.296	0.167	-0.499	1.172	0.029	
H65660	H.sapiens mRNA for peroxisomal acyl-CoA oxidase	-0.159	0.196	0.207	0.309	0.094	-0.824	
AA489201	H.sapiens mRNA for PHAP12b protein	-0.111	0.170	0.135	0.511	-0.047	0.016	
N67038	H.sapiens mRNA for phenylalkylamine binding protein	0.604	0.287	1.887	1.023	2.513	0.196	
AA146803	H.sapiens mRNA for phosphate cyclase	-0.248	0.267	0.136	0.181	0.167	0.254	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA458101	H.sapiens mRNA for phosphatidylinositol 3-kinase	0.028	0.129	-0.040	0.014	0.515	0.577	
AA186901	H.sapiens mRNA for phosphoenolpyruvate carboxykinase	0.519	0.156	0.836	-0.346	0.131	0.681	
AA699876	H.sapiens mRNA for phosphoinositide 3-kinase	0.097	0.707	0.443	0.381	0.536	0.040	
AA476263	H.sapiens mRNA for phosphorylase-kinase, beta subunit	-0.014	-0.317	0.134	-0.398	0.267	0.163	
H69335	H.sapiens mRNA for Pirin, isolate 1	1.500	0.886	0.281	1.184	0.613	-0.066	
H66158	H.sapiens mRNA for plakophilin 2a and b	-0.345	0.104	-0.077	-0.223	0.302	-0.055	
AA676223	H.sapiens mRNA for pristanoyl-CoA oxidase 1	-1.331	-0.729	-0.184	-0.438	-0.194	-0.483	
AA291490	H.sapiens mRNA for processing a-glucosidase 1	-0.279	-0.022	0.156	0.024	-0.039	-0.189	
AA115877	H.sapiens mRNA for proleasin inhibitor 12 (PI12; neuroserpin)	-0.399	0.084	0.069	0.040	0.052	0.226	
AA452149	H.sapiens mRNA for protein kinase, Dyrk2	-0.565	0.008	-0.190	-0.599	-0.266	-0.187	
AA450003	H.sapiens mRNA for protein kinase, Dyrk4, partial	1.387	0.946	1.519	0.775	1.635	-0.188	
AA521083	H.sapiens mRNA for protein phosphatase 6	-0.070	0.265	0.199	-0.199	-0.070	0.698	
R42433	H.sapiens mRNA for protein tyrosine phosphatase	0.089	0.099	0.011	0.138	0.232	0.311	
H23202	H.sapiens mRNA for protein-tyrosine-phosphatase	0.178	0.254	0.136	-0.151	0.148	-0.078	
AA630374	H.sapiens mRNA for protein-tyrosine-phosphatase (tissue type: foreskin)	-0.253	-0.469	-0.782	-0.925	-0.145	-0.281	
N52350	H.sapiens mRNA for protein-tyrosine-phosphatase (tissue type: testis)	0.281	0.323	-0.376	-0.475	-0.222	0.091	
H03504	H.sapiens mRNA for protein-tyrosine-phosphatase D1	-0.209	0.117	-0.181	-0.369	-0.110	-0.090	
AA447793	H.sapiens mRNA for pur alpha extended 3'untranslated region	0.407	0.339	0.373	0.042	0.322	0.755	
H08188	H.sapiens mRNA for putative chloride channel	0.314	0.315	0.229	0.301	0.260	0.627	
R42600	H.sapiens mRNA for putative MT4-MMP protein	0.028	0.075	0.389	-0.175	-0.139	0.274	
AA025059	H.sapiens mRNA for Rab11 gene	-0.689	-0.025	-0.336	-0.635	0.068	-0.082	
AA406613	H.sapiens mRNA for ragA protein	0.361	0.057	-0.305	0.340	0.208	0.159	
N73499	H.sapiens mRNA for ragB protein	0.121	0.079	0.437	0.179	0.536	0.336	
AA485734	H.sapiens mRNA for RanGTPase activating protein 1	0.159	0.245	0.118	0.002	0.359	0.485	
AA482117	H.sapiens mRNA for ras-related GTP-binding protein	0.134	0.307	0.345	0.106	0.664	0.993	
AA476438	H.sapiens mRNA for rat HREVI107-like protein	0.273	1.222	0.068	0.336	-0.455	0.091	
AA486281	H.sapiens mRNA for rat translocin-associated protein delta homolog	0.564	0.449	0.284	0.200	0.333	0.369	
AA243749	H.sapiens mRNA for receptor protein tyrosine kinase	2.276	0.247	1.969	0.922	1.035	0.532	
AA459400	H.sapiens mRNA for rho GDP-dissociation Inhibitor 1	0.144	0.288	0.336	0.345	0.542	0.943	
AA680244	H.sapiens mRNA for ribosomal protein L11	-0.358	-0.197	0.176	-0.294	-0.073	0.649	
AA027840	H.sapiens mRNA for RIT protein	-0.451	-0.210	-0.281	-0.608	-0.181	-0.025	
R08935	H.sapiens mRNA for RNA helicase (Myc-regulated dead box protein)	0.404	1.095	0.497	0.683	0.561	0.447	
AA019549	H.sapiens mRNA for RP3 gene	-0.257	-0.290	-0.351	0.294	-0.334	0.334	
N68132	H.sapiens mRNA for rTS beta protein	0.368	0.121	0.884	0.310	1.497	-0.204	
AA070489	H.sapiens mRNA for S100 calcium-binding protein A13	-0.189	-0.140	0.136	0.714	-0.133	0.369	
AA634360	H.sapiens mRNA for Sec23B isoform, 2450bp	0.399	0.587	0.022	0.379	0.108	0.414	
AA070226	H.sapiens mRNA for selenoprotein P	0.529	0.342	0.365	-0.009	0.293	0.441	
AA488447	H.sapiens mRNA for serine palmitoyltransferase, subunit I	-0.238	0.268	0.419	1.035	0.172	0.122	
W61116	H.sapiens mRNA for serine/threonine protein kinase, NIK	-0.284	-0.159	0.692	0.852	0.011	0.284	
H15445	H.sapiens mRNA for SEX gene	0.684	0.720	0.182	0.928	-0.308	0.221	
R33031	H.sapiens mRNA for sigma 3B protein	-0.213	0.066	0.337	-0.097	-0.118	0.273	
AA481555	H.sapiens mRNA for skeletal muscle abundant protein	0.701	0.413	0.342	0.394	0.606	0.048	
AA426053	H.sapiens mRNA for skeletal muscle-specific calpain	-0.197	-0.129	-0.052	-0.385	-0.184	0.251	
AA668189	H.sapiens mRNA for Sm protein F	0.446	0.366	-0.044	0.412	0.127	0.519	
AA133577	H.sapiens mRNA for Sm protein G	0.320	0.784	0.006	0.414	0.066	1.005	
AA872379	H.sapiens mRNA for SMT3A protein	-0.292	-0.572	-0.669	0.046	0.241	0.587	
AA775415	H.sapiens mRNA for SMT3B protein	0.114	0.298	0.459	0.989	0.088	0.566	
AA490209	H.sapiens mRNA for Sop2p-like protein	0.039	0.379	0.279	0.262	0.454	0.310	
AA136125	H.sapiens mRNA for spermine synthase	1.042	0.809	0.274	0.334	0.276	0.219	
R38682	H.sapiens mRNA for splicing factor SF3a120	0.371	1.092	0.762	0.093	-0.068	0.873	
T72628	H.sapiens mRNA for splicing factor SF3a120	0.355	-0.132	0.490	-0.103	0.520	0.446	
R38682	H.sapiens mRNA for splicing factor SF3a120	0.315	0.806	0.012	0.311	-0.049	0.283	
R39069	H.sapiens mRNA for STM-7 protein	0.766	-0.234	0.227	0.356	-0.546	0.103	
AA156461	H.sapiens mRNA for surface glycoprotein	-0.199	-0.189	0.247	-0.198	-0.250	0.035	
N59206	H.sapiens mRNA for SYT	0.169	-0.006	0.079	-0.638	-0.244	0.358	
AA279440	H.sapiens mRNA for tafazzin protein	0.822	0.708	0.232	0.044	0.277	0.638	
R07095	H.sapiens mRNA for Tcell leukemia/lymphoma 1	0.333	0.583	0.100	0.294	-0.082	0.312	
AA699317	H.sapiens mRNA for testican	-0.178	0.104	0.254	-0.132	0.003	0.280	
R60847	H.sapiens mRNA for TFG protein	0.474	0.633	-0.018	0.192	-0.309	0.538	
R83270	H.sapiens mRNA for TGIF protein	-0.308	-0.133	0.104	0.023	-0.381	0.796	
H68845	H.sapiens mRNA for thiol-specific antioxidant	0.538	0.461	0.435	-0.149	0.572	0.587	
AA708446	H.sapiens mRNA for TIM17 preprotein translocase	-0.184	0.127	0.446	0.363	0.059	0.484	
H15707	H.sapiens mRNA for TRAMP protein	-0.158	-0.197	0.019	0.076	-0.195	0.323	
AA487434	H.sapiens mRNA for transcript associated with monocyte to macrophage differentiation	0.820	0.644	0.334	-0.060	0.485	0.184	
N92711	H.sapiens mRNA for transcription factor TFIIID subunit TAFII28	0.166	-0.077	0.065	0.134	0.209	0.222	
AA460927	H.sapiens mRNA for translin	0.453	0.474	-0.340	-0.484	0.096	0.362	
AA477514	H.sapiens mRNA for translin associated protein X	-0.050	-0.592	-0.208	-0.891	-0.338	0.410	
AA476282	H.sapiens mRNA for transmembrane protein mp24	0.051	0.218	0.685	0.657	0.119	0.779	
AA709143	H.sapiens mRNA for TTF-I	0.084	0.303	0.099	0.238	0.818	0.304	
AA130874	H.sapiens mRNA for tyrosine phosphatase	0.442	0.214	0.064	0.189	0.315	0.050	
AA044025	H.sapiens mRNA for ubiquitin conjugating enzyme, UbCH6	-0.431	-0.271	-0.145	-0.447	0.180	0.647	
H13688	H.sapiens mRNA for UDP-GalNAc:polypeptide N-acetylgalactosaminyl transferase	0.023	0.677	-0.291	0.143	0.082	0.702	
AA706987	H.sapiens mRNA for UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase (T1)	0.129	0.215	0.375	0.087	0.008	0.315	
AA095958	H.sapiens mRNA for uridine phosphorylase	-0.022	-0.019	0.300	0.263	0.167	-0.132	
AA489017	H.sapiens mRNA for USF2a & USF2b, clone P9DH	-0.109	-0.068	-0.168	-0.445	-0.362	0.458	
AA397823	H.sapiens mRNA for ZID protein	0.434	0.555	0.138	0.281	-0.285	0.315	
W31899	H.sapiens mRNA for zinc finger gene	-0.360	-0.505	-0.080	-0.437	-1.101	0.060	
AA489714	H.sapiens mRNA for ZYG homologue	-0.515	-0.220	-0.473	-0.565	-0.792	0.058	
AA464198	H.sapiens mRNA PSSALRE for serine/threonine protein kinase	0.704	0.347	0.513	0.371	0.471	0.382	
AA490501	H.sapiens mRNA; UV Radiation Resistance Associated Gene	0.122	0.091	0.084	0.286	0.195	0.479	
AA421518	H.sapiens mRNS for clathrin-associated protein	-0.180	-0.332	-0.275	-0.097	-0.073	0.546	
AA029308	H.sapiens MTCP1 gene, exons 2A to 7 (and joined mRNA)	0.175	-0.281	-0.412	-0.449	-0.118	0.565	
AA448258	H.sapiens MTF-1 mRNA for metal-regulatory transcription factor	0.552	0.315	0.332	0.423	0.125	0.418	
AA167113	H.sapiens NAP (nucleosome assembly protein) mRNA, complete cds	-0.033	-0.133	0.825	0.330	0.202	0.289	
W93379	H.sapiens nek2 mRNA for protein kinase	-0.862	0.017	-0.324	-0.813	-0.453	0.732	
AA425336	H.sapiens NF-H gene, exon 1 (and joined CDS)	-0.171	0.103	0.136	-0.188	0.259	0.164	
AA598659	H.sapiens NuMA gene (Clone T33)	-0.175	0.427	0.035	-0.963	-0.390	-0.049	
H51066	H.sapiens OB-RGRP gene	0.873	0.602	-0.130	-0.472	-0.219	0.305	
T67066	H.sapiens OXA1Hs mRNA	0.254	0.361	-0.037	0.014	-0.110	0.127	
AA504351	H.sapiens OZF mRNA	-0.002	0.279	0.568	0.447	0.373	-0.081	
AA598787	H.sapiens p63 mRNA for transmembrane protein	0.345	0.218	0.198	-0.311	0.273	0.665	
AA100296	H.sapiens PAP mRNA	0.367	-0.249	-0.397	-0.249	-0.205	0.619	
H70484	H.sapiens partial C1 mRNA	0.071	0.739	1.116	0.022	0.624	0.812	
AA455767	H.sapiens Pax8 mRNA	0.511	0.825	0.121	-0.047	0.698	0.958	
N67778	H.sapiens PEBP2aC1 acute myeloid leukaemia mRNA	-0.533	0.507	-0.015	-0.662	-0.161	0.531	
AA911971	H.sapiens PRR1 mRNA	0.433	1.119	-0.191	0.360	-0.100	0.046	
H46425	H.sapiens Pur (pur-alpha) mRNA, complete cds	0.411	0.031	-0.008	-0.263	-0.451	0.802	
W05696	H.sapiens ray mRNA	0.049	0.126	0.164	-0.270	-0.263	0.289	
AA016290	H.sapiens RBQ-1 mRNA	-0.282	-0.086	-0.372	-0.010	-0.082	-0.420	
AA057436	H.sapiens RFXAP mRNA	0.254	0.443	0.428	1.043	0.268	0.137	
AA293192	H.sapiens RY-1 mRNA for putative nucleic acid binding protein	0.881	0.680	0.235	0.738	1.148	-0.057	
AA458884	H.sapiens S100A2 gene, exon 1, 2 and 3	-0.429	1.495	0.152	0.073	1.724	0.418	
N73827	H.sapiens SA mRNA	-0.978	-0.505	-0.665	-0.594	-0.178	0.364	
AA459351	H.sapiens sds22-like mRNA	0.498	0.470	0.810	0.164	1.054	0.649	
AA459363	H.sapiens seb4D mRNA	0.541	0.897	0.464	0.184	0.187	0.507	
H51554	H.sapiens Ski-W mRNA for helicase	-0.602	-0.475	-0.595	-0.706	-0.498	-0.288	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
H93121	H.sapiens Sp17 gene	-0.253	0.213	0.516	0.156	0.173	0.958	
R51052	H.sapiens SPHAR gene for cyclin-related protein	-0.093	0.281	-0.019	0.048	-0.496	0.221	
AA083478	H.sapiens Stat50 mRNA	-0.327	-0.058	0.593	0.415	0.188	0.385	
AA459247	H.sapiens SURF-5 mRNA	0.218	0.252	0.212	-0.164	-0.032	-0.997	
H39018	H.sapiens Syt V gene (genomic and cDNA sequence)	0.341	0.161	0.155	0.346	0.139	0.120	
AA403035	H.sapiens TFE3 gene, exons 1,2,3 (and joined CDS)	0.347	0.006	0.118	0.167	0.377	-0.043	
N90273	H.sapiens TTF mRNA for small G protein	-0.473	-0.976	-0.049	-0.147	-0.974	0.421	
H65328	H.sapiens YPT3 mRNA	-0.182	-0.192	0.490	0.406	-0.310	0.345	
AA132766	H.sapiens ZNF183 gene	-0.089	0.253	-0.246	-0.344	-0.001	0.614	
AA448396	Heat shock 10 kD protein 1 (chaperonin 10)	0.434	0.201	0.271	0.516	0.744	1.070	
R01139	Heat shock 27kD protein 1	0.521	0.492	-0.167	-0.294	0.894	0.065	
AA431795	Heat shock 60 kD protein 1 (chaperonin)	0.180	0.044	-0.111	-0.238	0.169	-0.354	
AA443039	HEAT SHOCK 70 KD PROTEIN 1	-0.219	-0.120	0.082	0.138	0.003	0.029	
AA629567	HEAT SHOCK COGNATE 71 KD PROTEIN	-0.143	0.303	0.564	-0.302	0.174	0.199	
AA449119	HEAT SHOCK FACTOR PROTEIN 1	0.141	0.172	0.349	-0.050	-0.072	0.774	
AA253434	HEAT SHOCK FACTOR PROTEIN 2	0.015	0.062	0.121	-0.002	0.307	-0.047	
AA443832	HEAT SHOCK PROTEIN HSP 90-ALPHA	-0.278	0.038	0.302	-0.254	-0.359	0.219	
W51785	Heat shock protein HSP72 homolog [human, thyroid associated ophthalmopathy patient, mRNA Partial	0.231	-0.138	0.475	-0.043	0.494	0.456	
AA278759	Hematopoietic proteoglycan core protein	1.420	0.997	0.341	-0.028	1.098	0.911	
AA424575	HEMATOPOIETIC LINEAGE CELL SPECIFIC PROTEIN	-0.274	1.014	0.027	0.626	0.830	0.608	
T71606	Heme oxygenase (decycling) 1	0.227	0.367	0.165	0.260	0.350	0.836	
AA626370	Heme oxygenase (decycling) 2	-0.277	-0.064	-0.366	-0.157	-0.306	0.938	
H79534	HEMOGLOBIN EPSILON CHAIN	0.161	0.683	-0.207	-0.093	0.401	0.718	
N95121	Hemoglobin gamma-G	-0.311	0.938	-0.661	-0.857	-0.736	1.291	
N59636	HEMOGLOBIN ZETA CHAIN	-0.447	-0.374	0.074	-0.234	-0.097	0.551	
AA457737	Hemoglobin, alpha 1	0.100	0.953	0.097	-0.071	0.164	1.282	
AA149087	Hemopoietic cell kinase	0.468	0.278	0.319	0.445	0.934	0.613	
AA463635	Heparan sulfate-N-deacetylase/N-sulfotransferase	0.749	0.596	0.133	0.207	0.442	0.146	
T62086	Heparin cofactor II	0.566	0.396	0.184	0.297	0.502	0.415	
N70235	Hepatic leukemia factor	0.475	0.612	0.169	0.091	0.484	0.311	
R52798	Hepatocyte growth factor (hepapoietin A; scatter factor)	0.409	0.743	0.433	0.333	0.893	0.001	
H62163	Hepsin	0.860	0.406	0.618	0.445	0.400	-0.529	
AA418683	Hermansky-Pudlak syndrome protein	0.543	0.605	0.005	0.169	0.394	0.485	
AA192411	HETEROCHROMATIN PROTEIN 1 HOMOLOG	0.410	0.346	0.296	0.189	0.694	0.885	
AA126911	Heterogeneous nuclear ribonucleoprotein A1	0.471	0.390	0.040	0.010	0.852	1.077	
W02101	Heterogeneous nuclear ribonucleoprotein A2/B1	0.367	0.482	0.039	0.267	0.300	0.651	
AA487442	Heterogeneous nuclear ribonucleoprotein G	0.728	0.501	0.539	0.384	0.915	-0.347	
W85697	Heterogeneous nuclear ribonucleoprotein K	0.067	0.391	0.335	0.518	0.010	0.535	
AA293778	HETEROGENEOUS NUCLEAR RIBONUCLEOPROTEIN L	-0.054	0.052	0.074	0.389	-0.294	0.763	
AA496792	HETEROGENEOUS NUCLEAR RIBONUCLEOPROTEIN U	0.384	0.736	0.363	0.431	0.108	0.994	
R39239	Hexabrachion (tenascin C, cytactin)	0.715	0.700	0.158	0.330	0.454	0.730	
AA485272	Hexokinase 1	-0.458	-0.455	-0.173	-0.107	-0.446	0.574	
T63321	Hexosaminidase B (beta polypeptide)	0.006	0.357	-0.677	-0.720	-0.329	-0.316	
AA448261	High mobility group (nonhistone chromosomal) protein isoforms 1 and Y	0.506	0.201	0.071	0.330	0.613	-0.036	
R14855	High mobility group box	0.574	0.352	0.229	0.323	0.258	0.661	
AA683085	High-mobility group (nonhistone chromosomal) protein 1	0.140	0.198	-0.193	0.135	0.277	0.904	
AA019203	High-mobility group (nonhistone chromosomal) protein 2	0.822	1.020	0.337	0.386	0.305	0.661	
H18971	Hippocalcin	0.865	1.115	0.290	0.110	0.697	0.539	
W86778	Histidine ammonia-lyase	-0.045	0.053	-0.487	-0.198	0.014	-0.080	
H70473	Histidine-rich glycoprotein	0.596	0.615	0.577	0.084	0.400	0.754	
H61209	Histidyl-tRNA synthetase	1.125	0.641	0.277	0.392	1.224	0.488	
T68615	HISTONE H1D	0.074	0.611	0.181	-0.084	0.977	0.356	
H95392	HISTONE H2A.X	0.586	0.149	0.572	0.180	0.065	0.106	
AA608514	HISTONE H3.3	-0.032	0.067	0.412	-0.047	-0.002	0.782	
AA668811	HISTONE H3.3	-0.202	0.376	-0.248	0.424	0.121	0.928	
R37224	HKR-T1	0.297	0.614	0.357	0.319	0.068	0.686	
AA634028	HLA CLASS II HISTOCOMPATIBILITY ANTIGEN, DP(1) ALPHA CHAIN PRECURSOR	0.129	-0.084	0.078	0.289	0.186	0.790	
R47979	HLA CLASS II HISTOCOMPATIBILITY ANTIGEN, DR ALPHA CHAIN PRECURSOR	0.623	0.086	0.442	0.054	0.157	1.011	
AA455043	Holocarbonylase synthetase (biotin-[propionyl-Coenzyme A-carboxylase (ATP-hydrolysing)] ligase)	0.446	0.395	0.423	0.125	0.278	0.872	
AA449704	Homo box A4	0.686	0.753	0.022	-0.070	0.725	0.034	
AA496921	Homo box A9	1.170	1.061	0.530	0.559	1.090	0.616	
H02243	Homo box B5 (2.1 protein)	1.324	0.980	0.075	0.953	1.036	0.702	
AA706301	HOMEOBOX PROTEIN HOX-A5	0.711	0.897	1.014	1.182	0.850	0.833	
AA610066	HOMEOBOX PROTEIN HOX-B6	0.447	0.420	0.111	0.429	0.229	0.351	
AA411169	HOMEOBOX PROTEIN HOX-D3	0.465	0.229	0.491	0.089	0.079	0.214	
AA428196	HOMEOBOX/POU DOMAIN PROTEIN RDC-1	0.008	0.011	0.275	0.694	0.391	0.620	
R62603	Homo sapiens, alpha-3 (VI) collagen	0.795	0.551	0.727	0.622	0.550	0.918	
R37768	Homo sapiens (clone 13a) deoxyhypusine synthase mRNA, complete cds	-0.221	-0.051	-0.208	0.009	0.224	1.028	
R37766	Homo sapiens (clone 13a) deoxyhypusine synthase mRNA, complete cds	0.258	-0.002	-0.266	-0.323	-0.201	0.808	
AA598884	Homo sapiens (clone CC6) NADH-ubiquinone oxidoreductase subunit mRNA, 3' end cds	-0.804	-0.155	-0.628	-0.967	-0.575	0.673	
AA426374	Homo sapiens (clone ch13lambd47) alpha-tubulin mRNA, complete cds	0.157	-0.053	0.393	0.121	0.347	0.580	
AA475351	Homo sapiens (clone HSNME28) CGRP type 1 receptor mRNA, complete cds	-0.145	0.088	0.270	0.445	0.228	-0.173	
AA460830	Homo sapiens (clone mf.18) RNA polymerase II mRNA, complete cds	0.052	0.039	0.031	-0.768	-0.327	-0.053	
AA858175	Homo sapiens (clone PEBP2aA1) core-binding factor, runt domain, alpha subunit 1 (CBFA1) mRNA, 3'	0.753	0.456	0.352	0.349	0.695	0.747	
AA789328	Homo Sapiens (clone PK2J) CDC2-related protein kinase (PISSLRE) mRNA, complete cds	-1.524	-0.654	-1.043	-0.703	-1.394	0.684	
AA478480	Homo sapiens (pp21) mRNA, complete cds	-0.547	-0.504	-0.409	-0.955	-0.741	0.455	
AA877669	Homo sapiens 130 kD Golgi-localized phosphoprotein (GPP130) mRNA, complete cds	0.027	0.126	0.108	-0.278	0.323	0.163	
AA262074	Homo sapiens 1C7 precursor, mRNA, alternatively spliced, complete cds	0.539	0.367	0.115	0.310	0.429	0.392	
AA464568	Homo sapiens 26S proteasome ATPase subunit mRNA, complete cds	0.209	0.276	-0.069	-0.488	-0.107	0.838	
N22904	Homo sapiens 3-phosphoinositide dependent protein kinase-1 (PDK1) mRNA, complete cds	0.251	-0.342	0.044	-0.005	0.354	0.764	
N66028	Homo sapiens 48 kDa FKBP-associated protein FAP48 mRNA, complete cds	0.271	0.348	0.481	0.521	0.173	0.824	
AA777551	Homo sapiens 5,10-methylenetetrahydrofolate synthetase mRNA, complete cds	0.531	0.168	-0.008	0.205	0.540	0.743	
R00855	Homo sapiens 59 protein mRNA, 3' end	0.742	1.078	-0.680	0.003	0.738	0.988	
H54020	Homo sapiens 9G8 splicing factor mRNA, complete cds	-0.259	-0.077	-0.242	-0.046	0.076	0.856	
R40057	Homo sapiens AC133 antigen mRNA, complete cds	0.385	-0.069	0.265	-0.372	0.395	0.801	
AA032090	Homo sapiens actin-related protein Arp2 (ARP2) mRNA, complete cds	-0.220	-0.209	1.023	1.640	-0.337	0.631	
AA164562	Homo sapiens actin-related protein Arp3 (ARP3) mRNA, complete cds	0.012	0.056	-0.001	-0.140	-0.266	0.699	
W96399	Homo sapiens adenosine triphosphatase mRNA, complete cds	0.164	0.283	0.416	0.742	0.399	1.142	
R37953	Homo sapiens adenyl cyclase-associated protein (CAP) mRNA, complete cds	0.269	0.272	-0.118	-0.487	-0.001	0.952	
R37953	Homo sapiens adenyl cyclase-associated protein (CAP) mRNA, complete cds	-0.081	0.101	0.021	-0.169	-0.051	0.950	
AA460823	Homo sapiens adhalin-35 mRNA, complete cds	0.247	1.771	1.309	1.106	1.573	-0.780	
T62865	Homo sapiens aflatoxin aldehyde reductase AFAR mRNA, complete cds	0.016	0.135	0.154	0.405	-0.249	-0.209	
AA458878	Homo sapiens agrin precursor mRNA, partial cds	0.465	0.456	0.075	0.322	0.192	0.810	
R89082	Homo sapiens A-kinase anchoring protein (AKAP18) mRNA, complete cds	0.057	0.614	0.145	-0.208	0.272	0.866	
N53512	Homo sapiens alpha 2 delta calcium channel subunit isoform I mRNA, complete cds	-0.061	-0.173	-0.008	-0.543	-0.293	1.050	
AA425754	Homo sapiens alpha SNAP mRNA, complete cds	0.371	0.531	0.134	0.059	0.417	0.915	
H45455	Homo sapiens alpha-mannosidase (6A8) mRNA, complete cds	-0.198	-0.004	-0.086	0.318	-0.231	1.019	
H15703	Homo sapiens ALR mRNA, complete cds	-0.030	-0.124	0.378	0.238	0.060	0.577	
AA453175	Homo sapiens amphiphysin II mRNA, complete cds	0.305	0.845	0.452	-0.125	1.068	0.870	
AA156793	Homo sapiens Amplified in Breast Cancer (AIB1) mRNA, complete cds	0.167	0.461	0.329	-0.202	0.192	0.734	
AA456636	Homo sapiens androgen receptor associated protein 24 (ARA24) mRNA, complete cds	0.571	0.327	0.334	0.083	0.116	0.224	
AA452648	Homo sapiens angio-associated migratory cell protein (AAMP) mRNA, complete cds	-0.215	0.156	-0.292	-0.863	-0.116	0.089	
AA125872	Homo sapiens angiopoietin-2 mRNA, complete cds	-0.445	-0.328	-0.939	-1.157	-0.269	-0.009	
R68555	Homo sapiens apoptosis-related protein TFAR15 (TFAR15) mRNA, complete cds	-0.157	-0.206	0.472	0.168	0.372	0.489	
N51014	Homo sapiens apoptotic protease activating factor 1 (Apaf-1) mRNA, complete cds	0.275	0.814	0.090	0.168	0.372	0.489	
AA621132	Homo sapiens AQP9 mRNA for aquaporin 9, complete cds	0.262	0.425	0.197	-0.106	0.200	0.862	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA142922	Homo sapiens Arg/Abi-interacting protein ArgBP2a (ArgBP2a) mRNA, complete cds	0.002	0.318	-0.133	0.308	0.171	0.797	
W55964	Homo sapiens Arp2/3 protein complex subunit p18-Arc (ARC18) mRNA, complete cds	0.135	0.388	0.082	0.291	0.490	0.832	
H54627	Homo sapiens Arp2/3 protein complex subunit p20-Arc (ARC20) mRNA, complete cds	0.630	0.318	1.037	0.275	1.040	0.462	
H23276	Homo sapiens Arp2/3 protein complex subunit p21-Arc (ARC21) mRNA, complete cds	-0.100	0.218	0.057	-0.318	0.033	0.525	
H25917	Homo sapiens Arp2/3 protein complex subunit p34-Arc (ARC34) mRNA, complete cds	1.800	0.858	0.958	0.484	1.176	0.881	
AA188179	Homo sapiens Arp2/3 protein complex subunit p41-Arc (ARC41) mRNA, complete cds	0.182	0.150	0.214	-0.023	0.256	0.698	
AA504809	Homo sapiens arsenite translocating ATPase (ASNA1) mRNA, complete cds	0.230	0.317	0.042	-0.118	0.057	0.895	
AA055486	Homo sapiens ataxia-telangiectasia group D-associated protein mRNA, complete cds	0.810	0.769	-0.004	0.363	0.291	1.942	
W87752	Homo sapiens ATF family member ATF6 (ATF6) mRNA, complete cds	0.144	0.464	0.007	0.602	-0.006	0.385	
AA448286	Homo sapiens atrophin-1 interacting protein 4 (AIP4) mRNA, partial cds	-0.055	0.134	0.226	0.054	0.146	0.633	
AA446557	Homo sapiens autoantigen mRNA, complete cds	0.077	-0.117	-0.362	-0.908	-0.205	0.701	
AA447593	Homo sapiens axonemal dynein light chain (h28) mRNA, complete cds	0.414	-0.024	0.396	0.263	0.082	0.356	
AA410383	Homo sapiens B lymphocyte chemoattractant BLC mRNA, complete cds	-0.238	0.214	0.252	0.054	-0.231	0.641	
AA596120	Homo sapiens BAF57 (BAF57) gene, complete cds	-0.305	-0.072	0.124	-0.178	-0.065	0.509	
H17398	Homo sapiens BAI 3 mRNA, complete cds	0.169	0.552	-0.139	0.518	-0.291	0.534	
W72437	Homo sapiens basic transcription factor 2 p44 (btf2p44) gene, partial cds, neuronal apoptosis inhibitory	-0.173	-0.275	-0.194	0.368	0.137	0.859	
N25578	Homo sapiens BC-2 protein mRNA, complete cds	0.199	0.248	0.203	0.177	0.558	-0.035	
N62514	Homo sapiens BCL2/adenovirus E1B 19kD-interacting protein 2 (BNIP2) mRNA, complete cds	0.307	0.142	0.061	0.146	0.421	0.410	
H54289	Homo sapiens Bet1p homolog (hbet1) mRNA, complete cds	0.286	0.595	-0.006	0.055	0.937	-0.643	
AA429882	Homo sapiens bet3 (BET3) mRNA, complete cds	-0.114	-0.406	0.066	-0.123	-0.417	0.559	
AA878280	Homo sapiens beta-3A-adaptin subunit of the AP-3 complex mRNA, complete cds	0.340	0.717	-0.162	0.326	0.010	0.672	
AA159359	Homo sapiens beta-dystrobrevin (BDTN) mRNA, complete cds	0.164	0.656	-0.283	0.080	-0.178	0.310	
AA64287	Homo sapiens bicaudal-D (BICD) mRNA, complete cds	0.611	0.397	0.402	0.125	0.495	-0.190	
AC350595	Homo sapiens breakpoint cluster region protein 1 (BCRG1) mRNA, complete cds	-0.121	0.185	0.125	0.043	0.553	0.217	
AA443638	Homo sapiens breast cancer-specific protein 1 (BCSG1) mRNA, complete cds	-0.209	-0.684	-0.253	-0.413	-0.018	0.027	
AA701929	Homo sapiens bystin mRNA, complete cds	0.076	0.382	-0.281	0.590	-0.280	0.778	
R22179	Homo sapiens CAGF28 mRNA, partial cds	0.305	0.704	0.148	0.496	0.863	0.729	
AA147043	Homo sapiens CAGH1a (CAGH1) mRNA, partial cds	0.008	0.290	0.405	0.024	0.174	0.968	
N57754	Homo sapiens CAGH3 mRNA, complete cds	-0.582	-0.134	-0.879	-0.385	-0.406	0.181	
AA427519	Homo sapiens CAGH32 mRNA, partial cds	-0.112	0.064	0.685	0.207	0.430	0.020	
R53527	Homo sapiens CAGH4 mRNA, partial cds	0.093	0.393	0.218	-0.138	0.634	0.405	
AA056626	Homo sapiens calcium/calmodulin-dependent protein kinase II mRNA, partial cds	-0.196	0.010	0.187	-0.372	0.098	0.463	
AA491238	Homo sapiens calcium-activated potassium channel (SKCA3) mRNA, complete cds	0.221	0.696	0.085	0.247	0.335	0.231	
AA457238	Homo sapiens calpamodulin (CalpM) mRNA, complete cds	0.243	1.217	0.027	0.417	0.186	0.960	
R78585	Homo sapiens calumenin mRNA, complete cds	0.640	0.989	0.167	0.770	1.208	0.708	
H28922	Homo sapiens cam kinase I mRNA, complete cds	-0.082	0.130	0.130	-0.331	0.246	0.405	
AA463631	Homo sapiens CaM kinase II isoform mRNA, complete cds	0.417	-0.447	-0.597	0.119	-0.276	0.881	
T50699	Homo sapiens cancer associated surface antigen (RCAS1) mRNA, complete cds	0.069	0.650	-0.054	-0.212	0.842	0.763	
AA171613	Homo sapiens carbonic anhydrase precursor (CA 12) mRNA, complete cds	-0.256	-0.638	-0.159	-1.198	0.098	0.967	
AA427725	Homo sapiens carboxypeptidase Z precursor, mRNA, complete cds	0.123	0.308	-0.029	0.265	0.001	0.907	
AA052632	Homo sapiens casein kinase I gamma 2 mRNA, complete cds	0.440	0.153	-0.387	-0.185	-0.316	0.738	
AA045865	Homo sapiens CASK mRNA, complete cds	0.118	0.285	0.353	1.003	0.266	0.820	
R42202	Homo sapiens catechol-O-methyltransferase (COMT) mRNA, complete cds	-0.189	0.032	0.211	0.035	-0.163	-0.005	
R42202	Homo sapiens catechol-O-methyltransferase (COMT) mRNA, complete cds	0.924	0.691	0.446	0.156	0.336	-0.013	
T89381	Homo sapiens caveolin-2 mRNA, complete cds	0.117	0.555	0.248	-0.145	1.031	0.454	
AA148230	Homo sapiens CC3 (CC3) mRNA, complete cds	0.114	0.764	0.038	-0.144	0.347	0.890	
N68854	Homo sapiens cdc14 homolog mRNA, complete cds	0.336	-0.082	0.141	0.345	-0.021	0.233	
AA487206	Homo sapiens cDNA for dihydroxyacetone phosphate acyltransferase (DAP-AT)	-0.113	0.068	-0.007	0.487	0.185	0.967	
AA451903	Homo sapiens cDNA similar to RNA binding protein C. elegans, complete	0.302	0.235	0.048	0.028	0.113	0.792	
AA676387	Homo sapiens cell cycle progression 2 protein (CPR2) mRNA, complete cds	0.045	0.880	-0.013	0.490	-0.194	0.578	
AA504482	Homo sapiens cell matrix adhesion regulator variant (CMAR) mRNA, complete cds	0.421	0.899	0.133	0.389	0.349	1.337	
R87989	Homo sapiens centrosomal Nek2-associated protein 1 (C-NAP1) mRNA, complete cds	0.240	-0.208	0.024	-0.075	0.250	0.941	
AA481028	Homo sapiens CEV14 mRNA, partial cds	0.507	0.977	0.548	0.813	0.225	0.920	
N65968	Homo sapiens CG1 mRNA, complete cds	-0.093	0.076	0.112	-0.161	-0.048	1.005	
AA417919	Homo sapiens cGMP phosphodiesterase delta subunit mRNA, complete cds	1.702	0.271	1.098	0.097	0.187	1.879	
N39958	Homo sapiens chaperonin containing t-complex polypeptide 1, beta subunit (Cctb) mRNA, complete cd	0.846	0.818	0.352	0.262	0.145	0.891	
AA676588	Homo sapiens chaperonin containing t-complex polypeptide 1, eta subunit (Cctb) mRNA, complete cds	0.135	0.782	0.155	-0.132	-0.223	0.562	
H99736	Homo sapiens CHD1 mRNA, complete cds	0.251	0.654	0.342	0.028	0.716	0.572	
N49703	Homo sapiens CHD2 mRNA, complete cds	0.204	0.711	0.480	-0.032	0.634	-0.208	
AA778077	Homo sapiens CHD3 mRNA, complete cds	0.026	0.142	0.086	-0.089	0.203	0.872	
N53057	Homo sapiens checkpoint kinase Chk1 (CHK1) mRNA, complete cds	-0.455	0.165	0.734	0.044	0.502	1.364	
N26062	Homo sapiens chloride channel protein (ClC-2) mRNA, complete cds	0.109	0.087	-0.273	-0.310	0.227	0.898	
R15740	Homo sapiens chondroitin-6-sulfotransferase mRNA, complete cds	0.149	-0.139	0.084	-0.295	-0.031	0.958	
T95113	Homo sapiens cig5 mRNA, partial sequence	-0.014	0.939	-0.165	0.264	-0.122	1.152	
H11464	Homo sapiens clk2 kinase (CLK2), proin1, cote1, glucocerebrosidase (GBA), and metaxin genes, con	0.202	0.858	0.044	0.341	-0.185	-0.938	
AA282845	Homo sapiens clk2 mRNA, complete cds	-0.170	-0.003	-0.417	-0.299	0.003	-1.043	
AA630459	Homo sapiens clk3 mRNA, complete cds	0.061	0.682	0.049	0.506	-0.094	-0.165	
AA489633	Homo sapiens clone 22 mRNA, alternative splice variant alpha-1, complete cds	-0.037	0.307	0.020	0.185	0.199	-0.187	
AA421284	Homo sapiens clone 23619 phosphoprotein mRNA, partial cds	-0.443	-0.216	-0.689	-1.085	-0.872	0.220	
H23124	Homo sapiens clone 23876 neuronal olfactomedin-related ER localized protein mRNA, partial cds	0.732	-0.501	-0.103	0.111	-0.544	0.466	
AA569222	Homo sapiens clone rasi-1 matrix metalloproteinase RASI-1 mRNA, complete cds	0.207	-0.555	0.455	0.739	1.024	0.341	
N54848	Homo sapiens coatamer protein (COPA) mRNA, complete cds	-0.434	0.025	-0.121	-0.324	-0.305	0.131	
R60995	Homo sapiens Coch-5B2 mRNA, complete cds	0.106	0.249	0.284	0.509	0.396	0.613	
N30404	Homo sapiens copper chaperone for superoxide dismutase (CCS) mRNA, complete cds	0.775	0.767	0.378	0.453	0.790	0.733	
AA099855	Homo sapiens COX17 mRNA, complete cds	-0.066	-0.050	-0.020	-0.212	-0.322	0.274	
AA188413	Homo sapiens COX4AL mRNA, complete cds	-0.091	0.359	-0.200	0.411	-0.193	-0.183	
AA292226	Homo sapiens creatine transporter mRNA, complete cds	0.260	0.016	0.328	0.119	0.453	0.517	
AA489647	Homo sapiens cyclin G2 mRNA, complete cds	-1.131	-0.424	0.704	-0.408	0.880	0.151	
T90767	Homo sapiens cyclin T mRNA, complete cds	0.104	0.148	-0.149	0.084	-0.140	-0.058	
R63702	Homo sapiens cyclin T2a mRNA, complete cds	1.152	0.783	0.216	0.641	0.204	-0.001	
N78843	Homo sapiens cyclophilin-33A (CYP-33) mRNA, complete cds	-0.033	-0.498	-0.209	-0.392	-0.308	0.806	
AA777187	Homo sapiens Cyr61 mRNA, complete cds	0.518	0.442	0.498	0.651	0.958	0.996	
T59334	Homo sapiens cysteine and glycine-rich protein 2 (CSR2) mRNA, complete cds	-0.033	0.167	-0.412	-0.136	0.232	0.843	
W61361	Homo sapiens cytoplasmic antipeptidase 2 (CAP2) mRNA, complete cds	0.052	0.015	-0.156	0.167	0.093	0.558	
AA430512	Homo sapiens cytoplasmic antipeptidase 3 (CAP3) mRNA, complete cds	0.080	0.431	0.194	-0.139	-0.142	-0.167	
R06254	Homo sapiens D54 isoform (hD54) mRNA, partial cds	0.072	0.612	0.324	-0.046	0.468	-0.851	
AA599175	Homo sapiens dbpB-like protein mRNA, complete cds	0.471	0.714	-0.049	0.145	0.584	-0.125	
H84871	Homo sapiens DCHT mRNA, complete cds	0.286	0.103	-0.043	-0.127	0.292	0.126	
AA626845	Homo sapiens dead box, X isoform (DBX) mRNA, alternative transcript 2, complete cds	0.364	0.302	-0.292	-0.015	-0.090	0.056	
AA447588	Homo sapiens dead box, Y isoform (DBY) mRNA, alternative transcript 2, complete cds	0.303	0.113	0.153	0.056	0.130	-0.133	
T71272	Homo sapiens decoy receptor 1 (DcR1) mRNA, complete cds	0.369	0.612	-0.031	0.084	0.069	0.435	
H85454	Homo sapiens delayed-rectifier K+ channel alpha subunit (KCNS1) mRNA, complete cds	1.172	0.897	0.403	0.336	0.727	1.009	
H17139	Homo sapiens delta-catenin mRNA, partial cds	0.302	-0.172	-0.239	-0.060	0.459	0.801	
AA629338	Homo sapiens DGS-A mRNA, 3' end	0.431	0.232	0.390	0.149	0.332	0.670	
AA011681	Homo sapiens DGS-D mRNA, 3' end	0.522	0.381	0.333	0.575	0.557	-1.461	
AA463452	Homo sapiens DGS-I mRNA, 3' end	0.071	-0.069	0.262	0.379	0.042	-0.425	
W33050	Homo sapiens di-N-acetylchitinase mRNA, complete cds	-0.666	-1.270	-1.058	-1.275	-0.661	-0.023	
AA488866	Homo sapiens dishevelled 2 (DVL2) mRNA, complete cds	0.245	0.762	0.035	-0.888	1.308	0.157	
AA705382	Homo sapiens DNA binding protein homolog (DRIL1) mRNA, complete cds	1.007	0.409	0.967	1.268	1.308	-0.021	
AA448664	Homo sapiens DNA polymerase epsilon subunit B (DPE2) mRNA, complete cds	-0.204	0.116	-0.087	0.565	0.324	0.640	
R92124	Homo sapiens DNA recombination and repair protein hNgs1 (hNGS1) mRNA, complete cds	0.442	0.389	0.305	-0.046	0.188	0.366	
R64101	Homo sapiens DNA-binding protein (CROC-1A) mRNA, complete cds	0.254	0.006	0.194	-0.705	0.438	0.445	
AA447986	Homo sapiens DnaJ protein (HSPF2) mRNA, complete cds	0.888	-0.038	0.762	0.721	0.710	0.161	
H12338	Homo sapiens DNAX activation protein 12 (DAP12) mRNA, complete cds	0.759	1.152	0.519	-0.001	0.143	-0.031	
AA677397	Homo sapiens DNJ3/CPR3 mRNA, complete cds	-0.005	0.234	0.131	-0.077	-0.161	-0.465	
AA004759	Homo sapiens dolichol monophosphate mannose synthase (DPM1) mRNA, partial cds	0.175	0.394	0.017	-0.077	-0.161	-0.465	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA629707	Homo sapiens down syndrome candidate region 1 (DSCR1) gene, alternative exon 1, complete cds	0.145	-0.463	-0.404	-0.361	-0.111	-0.342	
AA182680	Homo sapiens Drosophila fat facets related Y protein (DFFRY) mRNA, complete cds	0.278	0.224	0.347	-0.047	0.094	-0.001	
AA490811	Homo sapiens drp1 mRNA, complete cds	-0.522	-0.320	-0.493	-0.597	-0.532	0.074	
AA780897	Homo sapiens dynamin (DNM1) mRNA, complete cds	0.596	0.646	0.738	1.636	0.119	-0.159	
AA045528	Homo sapiens dynamin-like protein mRNA, complete cds	0.446	0.405	0.616	0.601	0.488	-0.117	
AA454959	Homo sapiens dynein light intermediate chain 2 (LIC2) mRNA, complete cds	-0.479	-0.692	-0.372	-0.839	-0.523	0.323	
AA446839	Homo sapiens E1B 19K/Bcl-2-binding protein Nip3 mRNA, nuclear gene encoding mitochondrial protein	0.196	0.440	0.177	0.256	0.415	0.266	
W46493	Homo sapiens E2F-related transcription factor (DP-1) mRNA, complete cds	-0.267	0.494	-0.136	-0.703	0.023	-0.846	
AA001749	Homo sapiens EB1 mRNA, complete cds	0.366	0.324	0.117	-0.084	-0.026	-0.856	
R20729	Homo sapiens EEN-91 mRNA, complete cds	-0.667	-0.056	-1.091	-0.342	-1.033	-0.630	
H50251	Homo sapiens EEN-82-L1 mRNA, complete cds	-0.105	0.473	-0.631	0.317	-0.147	-0.581	
AA047039	Homo sapiens eIF-1A, Y isoform (EIF1AY) mRNA, complete cds	0.140	-0.017	-0.045	0.060	0.015	0.210	
R37276	Homo sapiens eIF4G1 mRNA, complete cds	0.822	0.755	0.273	0.075	0.835	-0.291	
AA457547	Homo sapiens eIF4GII mRNA, complete cds	-0.125	-0.057	0.177	-0.334	0.040	-0.068	
H76466	Homo sapiens embryonic lung protein (HUEL) mRNA, complete cds	0.086	0.484	1.103	0.613	0.711	0.596	
T47443	Homo sapiens endothelial cell protein C/APC receptor (EPCR) mRNA, complete cds	0.014	0.492	-0.095	-0.265	0.021	-0.331	
H11003	Homo sapiens endothelin-1 (EDN1)	-0.855	-0.418	-0.418	-0.052	-0.269	0.448	
H11003	Homo sapiens endothelin-1 (EDN1)	0.328	0.516	0.003	0.035	0.096	-0.355	
R46320	Homo sapiens Eph-like receptor tyrosine kinase hEphB1c (EphB1) mRNA, complete cds	-0.076	0.186	0.558	-0.111	0.511	-0.080	
AA434373	Homo sapiens epithelial-specific transcription factor ESE-1b (ESE-1) mRNA, complete cds	-0.363	-0.152	0.126	0.099	-0.173	-0.241	
R16667	Homo sapiens eps8 binding protein e3B1 mRNA, complete cds	0.301	0.365	0.711	0.673	0.448	-1.857	
AA432066	Homo sapiens epsilon-sarcoglycan mRNA, partial cds	0.408	0.806	-0.062	0.224	0.079	-0.133	
AA568703	Homo sapiens eukaryotic translation initiation factor 3 subunit (p42) mRNA, complete cds	-0.143	0.102	0.010	0.333	-0.058	0.418	
AA402440	Homo sapiens exportin 1 mRNA, complete cds	0.059	0.473	0.174	-0.109	-0.091	-0.312	
AA431813	Homo sapiens EXT like protein 3 (EXTL3) mRNA, complete cds	0.061	0.044	0.488	0.224	0.397	0.112	
AA490078	Homo sapiens EXT2 mRNA, complete cds	0.008	-0.587	0.388	0.107	-0.343	0.042	
AA425299	Homo sapiens ezrin-radixin-moesin binding phosphoprotein-50 mRNA, complete cds	0.221	0.460	-0.036	0.087	0.142	0.416	
AA405989	Homo sapiens Fas-binding protein Daxx mRNA, complete cds	-0.061	0.030	0.171	-0.110	-0.083	0.337	
AA071526	Homo sapiens fb19 mRNA	0.918	1.149	0.254	0.587	0.566	-0.217	
AA490046	Homo sapiens FGF-1 intracellular binding protein (FIBP) mRNA, complete cds	0.767	0.912	0.418	1.078	1.083	-1.044	
R08267	Homo sapiens FK-506 binding protein (fkbp12.6) gene, complete cds	-0.291	-0.579	-0.976	-0.882	-0.200	-0.464	
AA453766	Homo sapiens FLICE-like inhibitory protein long form mRNA, complete cds	0.170	0.246	0.092	-0.175	0.813	-1.959	
AA460688	Homo sapiens FMRFamide-related prepropeptide mRNA, complete cds	0.544	0.261	0.460	0.052	0.216	-0.839	
AA465236	Homo sapiens forkhead protein (FKHL1) mRNA, complete cds	0.241	0.249	-0.097	0.159	0.417	-0.357	
AA113339	Homo sapiens FRG1 mRNA, complete cds	1.791	1.892	1.971	1.622	0.990	-0.231	
AA487193	Homo sapiens frizzled related protein frpHE mRNA, complete cds	0.313	0.724	-0.024	0.121	0.272	-0.128	
H06753	Homo sapiens G protein beta 5 subunit mRNA, complete cds	0.606	0.803	0.248	0.260	0.273	-0.127	
AA419092	Homo sapiens G protein-coupled receptor Edg-4 mRNA, complete cds	0.262	0.041	0.240	0.029	0.216	0.181	
H41122	Homo sapiens GABA-A receptor delta subunit (GABRD) mRNA, complete cds	0.373	0.001	0.287	0.502	0.109	0.258	
AA010503	Homo sapiens gamma SNAP mRNA, complete cds	0.656	0.808	0.119	0.045	0.526	-0.035	
H05619	Homo sapiens GDNF family receptor alpha 2 (GFRalpha2) mRNA, complete cds	0.333	0.419	0.211	0.350	0.227	-0.302	
R36619	Homo sapiens GDP-L-fucose pyrophosphorylase (GFPP) mRNA, complete cds	0.403	0.147	0.075	0.722	0.140	-1.667	
AA488188	Homo sapiens gene for protein involved in sexual development, complete cds	0.165	0.228	-0.504	-0.957	0.133	-1.217	
H16573	Homo sapiens germline mRNA sequence	0.609	0.950	0.477	-0.039	0.290	-1.589	
AA152347	Homo sapiens glutathione transferase (GSTA4) mRNA, complete cds	-0.215	0.025	0.162	-0.095	0.227	-0.418	
R49305	Homo sapiens glycogenin-2 delta (glycogenin-2)	0.077	0.207	0.255	0.166	0.096	-0.760	
R49305	Homo sapiens glycogenin-2 delta (glycogenin-2)	0.177	0.350	0.184	-0.147	0.226	-0.064	
H04789	Homo sapiens glycogenin-2 gamma (glycogenin-2) mRNA, complete cds	0.042	0.204	-0.113	0.254	-0.018	-0.462	
AA157018	Homo sapiens GOK (STIM1) mRNA, complete cds	0.165	-0.208	0.316	0.731	-0.062	0.015	
R44140	Homo sapiens Golgi complex autoantigen golgin-97 mRNA, complete cds	1.400	-0.075	1.197	1.250	0.542	0.448	
AA460981	Homo sapiens golgin-245 mRNA, complete cds	-0.141	0.102	-0.333	-0.496	-0.181	0.437	
R24266	Homo sapiens Grb14 mRNA, complete cds	-0.565	-0.738	-0.394	-0.655	-0.002	-0.084	
N35574	Homo sapiens growth inhibitor p33ING1 (ING1) mRNA, complete cds	0.217	0.785	0.192	0.028	0.190	0.217	
AA461110	Homo sapiens growth-arrest-specific protein (gas) mRNA, complete cds	0.241	-0.090	-0.075	-0.330	-0.121	-0.544	
AA427906	Homo sapiens GT197 partial ORF mRNA, 3' end of cds	0.000	0.220	0.199	-0.001	0.564	-0.215	
AA134555	Homo sapiens GT198 mRNA, complete ORF	0.013	-0.300	-0.234	0.090	-0.074	-0.212	
H82877	Homo sapiens GT212 mRNA	0.003	0.184	0.125	0.174	0.769	-0.083	
AA160906	Homo sapiens GTPase-activating protein (SIPA1) mRNA, complete cds	0.804	0.171	0.833	0.178	1.358	0.294	
AA775872	Homo sapiens GTR2-2 mRNA, complete cds	0.249	0.494	-0.021	0.069	-0.041	-0.135	
AA431439	Homo sapiens guanylate cyclase activating protein (GCAP) gene, complete cds	0.070	0.430	0.217	0.522	0.179	-0.035	
AA419264	Homo sapiens hair and skin epidermal-type 12-lipoxygenase-related protein (ALOX12E) mRNA, compl	0.930	1.209	0.215	0.638	0.414	0.228	
AA430665	Homo sapiens hCPE-R mRNA for CPE-receptor, complete cds	0.472	0.660	0.134	0.418	0.931	0.100	
T55756	Homo sapiens heparan sulfate 3-O-sulfotransferase-1 precursor (JOST1) mRNA, complete cds	-0.692	-0.160	-0.428	-0.578	-0.564	0.238	
AA699732	Homo sapiens hepatocyte nuclear factor 6 (HNF-6) mRNA, partial cds	1.399	1.267	0.097	1.225	0.588	0.123	
AA448667	Homo sapiens heterochromatin protein p25 mRNA, complete cds	-0.232	-0.004	0.380	-0.344	0.196	-0.292	
AA488402	Homo sapiens heterogeneous nuclear ribonucleoprotein R mRNA, complete cds	-0.220	-0.157	-0.553	-0.991	-0.085	-0.325	
AA455301	Homo sapiens hGAA1 mRNA, complete cds	-0.284	-0.505	-0.264	-0.662	-0.466	-0.627	
AA825662	Homo sapiens histone acetyltransferase 1 mRNA, complete cds	0.120	0.638	0.280	0.634	0.255	0.596	
H79779	Homo sapiens histone deacetylase 3 (HDAC3) mRNA, complete cds	0.362	-0.170	0.435	0.305	0.783	0.152	
AA047280	Homo sapiens histone H2A.2 mRNA, complete cds	0.421	0.743	0.173	0.390	0.615	0.383	
AA447674	Homo sapiens HIV-Nef associated acyl CoA thioesterase (hNAACTE) mRNA, complete cds	0.510	0.495	-0.020	0.132	0.705	0.007	
R26082	Homo sapiens HKL1 mRNA, complete cds	0.000	0.466	0.342	-0.160	0.654	0.133	
AA459244	Homo sapiens hMed7 (MED7) mRNA, complete cds	-0.105	0.081	0.336	-0.367	0.203	0.139	
R08932	Homo sapiens HMG box containing protein 1 mRNA, complete cds	0.361	0.459	-0.191	-0.066	0.721	0.071	
R16195	Homo sapiens HNK-1 sulfotransferase mRNA, complete cds	0.000	0.219	-0.670	-0.241	-0.670	0.047	
AA490991	Homo sapiens HnRNP F protein mRNA, complete cds	0.203	0.163	0.208	-0.284	-0.124	0.102	
AA148641	Homo sapiens homeobox protein MEIS2 (MEIS2) mRNA, partial cds	0.129	0.905	0.099	-0.315	-0.156	-0.782	
AA479928	Homo sapiens homeodomain protein (OG12) mRNA, complete cds	-0.294	0.226	0.097	-0.085	-0.312	-0.911	
AA293653	Homo sapiens homolog of mouse MAT-1 oncogene mRNA, complete cds	0.213	0.236	-0.145	0.297	0.061	-0.567	
T54144	Homo sapiens homolog of the Aspergillus nidulans sudD gene product mRNA, complete cds	0.082	0.185	0.313	0.837	0.195	-0.385	
AA427954	Homo sapiens hook2 protein (HOOK2) mRNA, complete cds	-0.527	-0.308	-0.110	-0.030	-0.233	-0.461	
AA679864	Homo sapiens HP protein (HP) mRNA, complete cds	-0.381	-0.171	0.192	0.154	-0.214	-0.248	
AA630784	Homo sapiens HPV16 E1 protein binding protein mRNA, complete cds	-0.335	-0.262	0.181	-0.250	-0.059	-0.028	
AA434144	Homo sapiens hRVP1 mRNA for RVP1, complete cds	0.351	0.655	-0.385	-0.252	-0.480	-0.925	
AA456621	Homo sapiens human gamma-glutamyl hydrolase (hGH) mRNA, complete cds	0.182	-0.503	-0.392	-0.211	-1.974	-1.753	
AA464196	Homo sapiens hyaluronoglucosaminidase 1 (HYAL1) mRNA, complete cds	0.237	0.586	0.117	0.318	0.154	-0.787	
R73584	Homo sapiens hydroxysteroid sulfotransferase SUL2B1a (HSST2) mRNA, complete cds	0.630	0.295	0.257	0.387	0.560	-0.213	
H10959	Homo sapiens IB3089A (IB3089A) mRNA, complete cds	0.116	0.321	-0.041	-0.083	0.346	-0.457	
AA495898	Homo sapiens importin beta subunit mRNA, complete cds	-0.121	-0.099	0.423	-0.024	-0.059	-0.633	
AA688178	Homo sapiens importin-alpha homolog (SRP1gamma) mRNA, complete cds	0.085	0.320	0.168	0.499	0.169	-0.499	
AA406180	Homo sapiens imprinted multi-membrane spanning polyspecific transporter-related protein (IMPT1) mF	0.183	0.021	0.279	0.116	0.302	-0.868	
AA633751	Homo sapiens inactive palmitoyl-protein thioesterase-2i (PPT2) mRNA, complete cds	0.197	0.208	0.196	0.584	-0.108	-0.596	
AA047778	Homo sapiens incomplete cDNA for a mutated allele of a myosin class I, myh-1c	-0.144	0.177	0.393	0.196	-0.131	-0.589	
H12044	Homo sapiens inducible protein mRNA, complete cds	0.116	0.387	0.200	0.282	0.357	-0.047	
T68317	Homo sapiens inner mitochondrial membrane translocase Tim23 (TIM23) mRNA, nuclear gene encodi	1.007	0.242	0.504	1.207	0.471	-0.614	
AA455597	Homo sapiens inositol polyphosphate 4-phosphatase type II-alpha mRNA, complete cds	-0.007	-0.100	0.273	-0.090	-0.265	-1.054	
H59620	Homo sapiens insulin induced protein 1 (INSIG1) gene, complete cds	0.340	0.487	0.219	0.263	0.204	-0.553	
R87964	Homo sapiens integrin alpha 8 subunit mRNA, 3' end	0.885	0.797	0.432	0.352	0.353	-1.343	
AA457038	Homo sapiens integrin cytoplasmic domain associated protein (Icap-1a) mRNA, complete cds	-0.342	1.387	-0.417	-0.469	-0.569	0.076	
AA148200	Homo sapiens integrin-linked kinase (ILK) mRNA, complete cds	0.342	-0.110	-0.116	0.381	-0.130	0.011	
AA458912	Homo sapiens interferon-inducible protein (AIM2) mRNA, complete cds	0.569	0.059	-0.136	0.230	0.186	-0.497	
AA121428	Homo sapiens interleukin-1 receptor-associated kinase (IRAK) mRNA, complete cds	0.682	0.281	0.386	0.445	0.424	-0.508	
AA443903	Homo sapiens intermediate conductance calcium-activated potassium channel (hKCa4) mRNA, compl	-0.058	-0.015	0.011	-0.588	0.205	-0.359	
H38839	Homo sapiens interphotoreceptor matrix proteoglycan 150 (IMPG1) mRNA, complete cds	-0.069	0.549	0.196	0.038	0.431	-0.208	
H20547	Homo sapiens inwardly rectifying potassium channel (Kir3.2) mRNA, complete cds	0.722	0.623	0.204	0.569	0.598	-0.369	
H68885	Homo sapiens IPL (IPL) mRNA, complete cds	0.116	-0.112	0.389	-0.251	0.226	0.060	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
H93310	Homo sapiens IPW mRNA sequence	0.337	0.351	-0.330	-0.254	0.374	-0.216	
R70685	Homo sapiens Jagged 1 (JH1) mRNA, complete cds	-0.124	0.215	0.179	-0.021	0.045	0.186	
R72432	Homo sapiens Jagged 2 mRNA, complete cds	0.887	1.347	0.075	-0.226	0.842	-0.455	
H85962	Homo sapiens JNK kinase 2 (JNKK2) mRNA, complete cds	0.881	1.349	0.824	0.125	0.778	-0.281	
AA702422	Homo sapiens Josephin MJD1 mRNA, complete cds	0.262	0.093	-0.081	0.164	-0.020	0.064	
AA013095	Homo sapiens K+ channel beta-subunit (Kv1.3) mRNA, complete cds	0.520	0.543	0.422	0.261	0.710	0.299	
N58558	Homo sapiens kallistatin (P14) mRNA, complete cds	0.491	0.434	0.010	0.832	0.033	0.072	
R08897	Homo sapiens karyopherin beta2b homolog mRNA, complete cds	0.128	0.186	0.324	0.001	0.648	0.733	
AA457696	Homo sapiens katanin p80 subunit mRNA, complete cds	0.068	0.475	-0.009	-0.217	-0.124	-0.779	
W93500	Homo sapiens kidney and cardiac voltage dependent K+ channel (KvLQT1) mRNA, complete cds	-0.416	0.086	-0.776	-0.546	-0.445	-0.687	
AA446908	Homo sapiens kinesin-related protein (KIF3C) mRNA, complete cds	0.179	0.255	0.076	0.727	0.172	-0.533	
H45668	Homo sapiens Kruppel-like zinc finger protein (EZF) mRNA, complete cds	0.555	0.499	-0.071	0.129	0.288	-0.207	
AA193116	Homo sapiens L-glycerol-3-phosphate:NAD oxidoreductase mRNA, complete cds	-1.091	-0.865	-0.443	-1.110	-1.274	1.142	
H73914	Homo sapiens LIM homeobox protein cofactor (CLIM) mRNA, complete cds	-0.586	0.202	-1.041	-0.232	-0.705	0.350	
N70057	Homo sapiens LST1 mRNA, cLST1A splice variant, complete cds	0.386	-0.107	0.258	-0.232	0.028	-0.075	
AA461304	Homo sapiens Luman mRNA, complete cds	0.201	-0.107	-0.113	-0.653	-0.578	-0.136	
AA401883	Homo sapiens lysosomal neuraminidase precursor, mRNA, complete cds	0.316	0.199	0.158	-0.100	0.117	0.250	
AA664004	Homo sapiens lysosomal pepstatin insensitive protease (CLN2) mRNA, complete cds	0.488	0.412	0.512	1.207	0.549	0.301	
AA136707	Homo sapiens lysyl hydroxylase isoform 2 (PLOD2) mRNA, complete cds	0.347	0.572	1.388	0.742	1.117	0.048	
AA417713	Homo sapiens m6A methyltransferase (MT-A70) gene, complete cds	-1.061	-0.598	-0.875	-0.975	-0.348	0.158	
AA485867	Homo sapiens macrophage receptor MARCO mRNA, complete cds	1.490	1.543	0.205	0.731	0.025	-0.041	
W72201	Homo sapiens mad protein homolog (MAD-3) mRNA, complete cds	-0.370	-0.002	0.039	-0.329	-0.192	-0.492	
AA447515	Homo sapiens Mad4 homolog (Mad4) mRNA, complete cds	0.052	0.534	-0.261	0.034	-0.015	-0.426	
R82176	Homo sapiens MAD-related gene SMAD7 (SMAD7) mRNA, complete cds	-0.181	-0.623	-0.930	-1.050	-1.174	-0.072	
AA190508	Homo sapiens meltrin-L precursor (ADAM12) mRNA, complete cds	-0.214	0.142	-0.082	-0.135	-0.265	-0.076	
W73474	Homo sapiens microsomal glutathione S-transferase 2 (MGST2) mRNA, complete cds	-0.065	0.752	0.013	-0.362	0.076	0.451	
AA496565	Homo sapiens microsomal glutathione S-transferase 3 (MGST3) mRNA, complete cds	0.527	0.228	0.702	1.541	-0.038	0.008	
R96626	Homo sapiens MIP-1 delta mRNA, complete cds	-0.049	0.459	-0.300	-0.049	0.313	-0.545	
AA488324	Homo sapiens mitotic checkpoint kinase Mad3L (MAD3L) mRNA, complete cds	0.542	0.365	0.117	-0.073	0.586	0.282	
AA448462	Homo sapiens mitotic checkpoint protein kinase (BUB1) mRNA, complete cds	-0.224	-0.613	-0.753	-0.313	-0.301	0.499	
AA481076	Homo sapiens mitotic feedback control protein Madp2 homolog mRNA, complete cds	-0.900	-0.234	-1.021	-1.896	-0.647	0.752	
AA448676	Homo sapiens MMS2 (MMS2) mRNA, complete cds	1.453	0.190	1.539	0.572	1.598	0.838	
AA705112	Homo sapiens molybdenum cofactor biosynthesis protein A and molybdenum cofactor biosynthesis prc	0.175	0.086	0.364	0.234	0.088	0.586	
AA129777	Homo sapiens monocarboxylate transporter (MCT3) mRNA, complete cds	0.045	-0.454	-0.135	-0.615	-0.157	0.919	
H54023	Homo sapiens monocyte/macrophage Ig-related receptor MIR-10 (MIR cl-10) mRNA, complete cds	0.238	-0.007	0.034	0.515	-0.099	0.428	
AA496002	Homo sapiens mRNA capping enzyme (HCE) mRNA, complete cds	0.415	0.652	0.213	0.277	0.361	0.127	
AA410188	Homo sapiens mRNA expressed in osteoblast, complete cds	0.182	0.793	0.226	0.216	0.242	0.207	
AA497055	Homo sapiens mRNA for 26S proteasome subunit p55, complete cds	1.102	0.560	0.127	0.455	0.544	0.036	
W74254	Homo sapiens mRNA for 36 kDa phosphotyrosine protein	1.629	0.543	2.632	1.049	2.835	0.667	
AA598578	Homo sapiens mRNA for A+U-rich element RNA binding factor, complete cds	-0.304	0.048	-0.155	0.635	-0.015	-0.179	
AA490462	Homo sapiens mRNA for AEBP1, complete cds	-0.002	0.166	0.336	0.154	0.523	0.266	
H51645	Homo sapiens mRNA for alpha actinin 4, complete cds	-0.070	0.368	-0.502	0.057	0.217	0.510	
AA432271	Homo sapiens mRNA for AMP-activated protein kinase beta 1	-0.399	-0.082	0.151	0.315	-0.128	-0.063	
N78582	Homo sapiens mRNA for AMP-activated protein kinase beta 2 subunit	0.416	0.552	0.014	0.240	0.138	0.437	
AA495781	Homo sapiens mRNA for AMY-1, complete cds	-0.247	0.044	0.072	0.291	-0.435	0.661	
R67376	Homo sapiens mRNA for ARNO3 protein	0.441	0.383	0.156	-0.106	0.521	0.195	
AA085749	Homo sapiens mRNA for ATP binding protein, complete cds	0.252	0.250	0.195	-0.098	0.099	0.279	
AA431433	Homo sapiens mRNA for ATP synthase subunit e, complete cds	0.317	-0.414	-0.365	0.033	-0.630	0.281	
N74897	Homo sapiens mRNA for ATP-dependent RNA helicase #46, complete cds	0.070	0.953	-0.086	-0.425	-0.025	0.231	
R19158	Homo sapiens mRNA for aurora/PL1-related kinase, complete cds	0.467	0.075	-0.127	0.322	0.220	-0.428	
AA504615	Homo sapiens mRNA for CAB1, complete cds	0.014	0.015	0.218	0.284	0.186	0.465	
AA421819	Homo sapiens mRNA for cadherin-5, complete cds	0.198	0.130	0.699	-0.208	0.047	0.174	
AA778675	Homo sapiens mRNA for calmodulin, complete cds	-0.003	0.258	0.178	-0.061	0.026	0.811	
AA055163	Homo sapiens mRNA for cardiac casein, complete cds	-0.067	-0.686	-0.414	0.154	-0.653	0.507	
AA495955	Homo sapiens mRNA for CC chemokine, complete cds	0.419	0.494	0.770	-0.135	0.799	0.216	
AA443118	Homo sapiens mRNA for CD151, complete cds	0.167	0.061	0.173	0.163	0.135	0.605	
R62245	Homo sapiens mRNA for Cdc42-interacting protein 4 (CIP4)	-0.078	-0.107	0.235	0.939	-0.021	0.066	
AA485435	Homo sapiens mRNA for Cdc7-related kinase, complete cds	-0.374	0.057	0.364	-0.678	1.163	-0.283	
T58775	Homo sapiens mRNA for CDEP, complete cds	-0.188	-0.156	-0.445	-0.615	-0.237	0.175	
AA894694	Homo sapiens mRNA for chemokine LEC precursor, complete cds	-0.325	0.364	0.042	-0.214	-0.153	0.332	
R10896	Homo sapiens mRNA for CIRP, complete cds	0.835	0.212	0.354	0.625	0.152	0.383	
T59055	Homo sapiens mRNA for COX7RP, complete cds	-0.106	-0.099	0.150	0.570	-0.204	0.492	
W84331	Homo sapiens mRNA for CRM1 protein, complete cds	0.052	0.261	0.276	0.121	0.408	0.334	
AA062805	Homo sapiens mRNA for cytochrome b large subunit of complex II, complete cds	-0.487	-0.271	-0.255	-1.193	-0.364	0.826	
W04674	Homo sapiens mRNA for cytochrome b5, partial cds	0.037	0.142	0.228	-0.216	0.075	0.744	
R97540	Homo sapiens mRNA for DCRA, complete cds	0.109	0.145	0.373	-0.197	0.501	0.353	
H75632	Homo sapiens mRNA for DEC1, complete cds	0.035	0.010	0.481	0.323	0.890	0.471	
AA757754	Homo sapiens mRNA for dihydropyrimidinase related protein 4, complete cds	-0.009	0.131	-0.240	0.354	0.177	0.578	
N73761	Homo sapiens mRNA for dihydropyrimidinase, complete cds	0.348	0.301	-0.154	-0.023	0.452	0.832	
AA757764	Homo sapiens mRNA for DNA-binding protein, complete cds	1.818	0.863	1.662	1.674	0.385	-0.464	
AA620421	Homo sapiens mRNA for doublecortin	-0.194	-0.327	-0.725	0.003	-0.356	0.031	
H09695	Homo sapiens mRNA for EDF-1 protein	0.897	0.082	0.861	0.165	0.613	0.187	
AA460282	Homo sapiens mRNA for Efs1, complete cds	-0.412	-0.066	-0.352	-0.527	-0.559	-0.130	
AA609284	Homo sapiens mRNA for Eph-family protein, complete cds	1.061	1.099	1.396	0.491	2.248	0.882	
N31585	Homo sapiens mRNA for epiregulin, complete cds	-0.133	0.070	0.142	0.130	0.515	0.965	
AA682851	Homo sapiens mRNA for ERp28 protein	0.082	0.482	-0.317	-0.489	-0.099	0.713	
W72051	Homo sapiens mRNA for fatty acid binding protein, complete cds	-0.025	-0.033	-0.454	-0.371	-0.297	0.562	
N21170	Homo sapiens mRNA for Fin29, complete cds	-0.330	0.065	-0.476	-1.020	-0.019	0.559	
AA025150	Homo sapiens mRNA for fructose-1,6-bisphosphatase	0.016	0.103	0.245	-0.072	0.173	-0.085	
N70841	Homo sapiens mRNA for GABA-BR1a (hGB1a) receptor	0.653	0.170	1.006	0.084	0.534	-0.078	
AA434102	Homo sapiens mRNA for galectin-9 isoform, complete cds	-0.241	-0.226	-0.243	-0.718	-0.148	0.722	
AA663910	Homo sapiens mRNA for GCP170, complete cds	-1.019	-1.713	-1.501	-1.061	-1.157	1.144	
R92806	Homo sapiens mRNA for GDP dissociation inhibitor beta	0.002	0.079	0.234	-0.030	0.160	1.172	
H88599	Homo sapiens mRNA for GS3786, complete cds	0.311	-0.195	-0.401	0.218	-0.092	0.269	
AA458653	Homo sapiens mRNA for GS3955, complete cds	-0.255	-0.397	-0.181	-0.510	-0.363	0.944	
AA416783	Homo sapiens mRNA for H-2K binding factor-2, complete cds	-0.193	-0.333	-0.277	-0.197	0.174	0.792	
AA454619	Homo sapiens mRNA for Hic-5, partial cds	-0.101	0.044	0.188	0.122	0.257	0.659	
N20338	Homo sapiens mRNA for Hrs, complete cds	0.635	0.638	0.715	0.640	0.844	0.491	
AA428959	Homo sapiens mRNA for HsGAK, complete cds	0.199	0.198	0.303	1.278	-0.079	0.273	
AA608512	Homo sapiens mRNA for hSNF2h, complete cds	1.497	0.222	0.657	0.631	0.618	0.646	
AA419628	Homo sapiens mRNA for hTCF-4	0.024	0.665	0.494	-0.551	0.062	-0.047	
R01638	Homo sapiens mRNA for HYA22, complete cds	-0.759	-0.236	-0.372	-0.109	-0.566	0.691	
NA6828	Homo sapiens mRNA for inositol 1,4,5-trisphosphate 3-kinase isoenzyme, partial cds	-0.289	-0.199	-0.359	-0.284	-0.355	0.712	
AA256132	Homo sapiens mRNA for interleukin 1 receptor accessory protein, complete cds	-0.309	-0.049	-0.898	-1.164	-0.548	0.803	
H62387	Homo sapiens mRNA for ISLR, complete cds	0.277	0.290	-0.166	-0.288	-0.059	0.874	
AA677655	Homo sapiens mRNA for Klotho, complete cds	0.355	-0.060	-0.390	-0.192	0.137	0.821	
N75028	Homo sapiens mRNA for L-3-phosphoserine-phosphatase homologue	0.571	-0.584	0.132	0.551	0.960	0.894	
AA156632	Homo sapiens mRNA for latent transforming growth factor-beta binding protein-4	0.014	-0.010	-0.188	-0.325	-0.175	0.282	
AA700647	Homo sapiens mRNA for LECT2 precursor, complete cds	0.460	-0.123	0.182	-0.280	0.518	-0.125	
AA682386	Homo sapiens mRNA for lectin-like oxidized LDL receptor, complete cds	0.442	0.116	0.413	0.475	0.173	0.438	
AA013268	Homo sapiens mRNA for leucine zipper bearing kinase, complete cds	0.475	0.300	0.197	0.617	0.054	0.014	
AA425755	Homo sapiens mRNA for leukemia associated gene 1	0.134	0.628	0.062	0.067	0.339	0.382	
N25204	Homo sapiens mRNA for leukemia associated gene 2	0.440	0.355	0.068	-0.040	0.325	0.225	
AA133191	Homo sapiens mRNA for low molecular mass ubiquitin-binding protein, complete cds	-0.397	-0.306	0.048	-0.622	1.326	0.572	
AA486220	Homo sapiens mRNA for Lysyl tRNA Synthetase, complete cds	0.032	0.197	0.238	0.187	0.781	0.433	
		2.042	0.879	1.742	1.106	2.623	0.741	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA046430	Homo sapiens mRNA for membrane glycoprotein gp36	0.215	0.098	0.254	0.331	0.098	0.464	
R23752	Homo sapiens mRNA for mitochondrial ribosomal protein S12	-0.094	0.134	0.058	0.351	-0.083	0.674	
AA669126	Homo sapiens mRNA for myosin phosphatase target subunit 1 (MYPT1)	0.261	-0.105	-0.733	-0.333	-0.265	0.675	
N91887	Homo sapiens mRNA for NB thymosin beta, complete cds	-0.756	0.136	-0.307	-0.436	-0.557	0.410	
AA625859	Homo sapiens mRNA for Nck, Ash and phospholipase C gamma-binding protein NAP4, partial cds	-0.317	0.271	-0.087	0.210	-0.513	0.078	
R63918	Homo sapiens mRNA for neuronatin alpha, complete cds	1.037	0.858	0.746	0.301	1.323	0.172	
AA186348	Homo sapiens mRNA for neuropathy target esterase	-0.413	-0.313	0.125	-0.105	-0.259	0.838	
AA706226	Homo sapiens mRNA for NTAk, complete cds	0.467	0.580	-0.081	0.034	0.337	0.690	
AA894577	Homo sapiens mRNA for nucleolar protein hNop56	0.332	-0.207	-0.454	0.248	-0.157	0.618	
N52533	Homo sapiens mRNA for osteoblast specific cysteine-rich protein, complete cds	0.128	0.055	0.508	0.199	0.072	0.102	
AA598653	Homo sapiens mRNA for osteoblast specific factor 2 (OSF-2os)	-0.142	0.859	-0.512	-0.255	-0.254	-0.205	
N32201	Homo sapiens mRNA for osteomodulin, complete cds	-0.078	0.151	-0.346	-0.093	-0.007	0.371	
AA478199	Homo sapiens mRNA for osteonidogen, complete cds	0.157	0.379	0.382	0.639	0.245	0.838	
AA838730	Homo sapiens mRNA for OTK18, complete cds	0.232	0.139	-0.181	0.141	-0.276	0.638	
AA608583	Homo sapiens mRNA for OTK27, complete cds	-0.264	-0.273	-0.117	-0.256	-0.304	0.505	
AA504342	Homo sapiens mRNA for p115, complete cds	0.354	0.142	0.338	-0.006	0.350	0.968	
N91962	Homo sapiens mRNA for p18 component of aminoacyl-tRNA synthetase complex, complete cds	-0.538	-0.429	-0.140	-1.487	-0.530	0.537	
AA456077	Homo sapiens mRNA for p27, complete cds	0.789	0.245	0.062	-0.221	0.353	0.804	
AA458622	Homo sapiens mRNA for PCOH7 (BH-Podh)a, complete cds	0.197	0.204	-0.117	0.292	0.111	0.897	
AA005153	Homo sapiens mRNA for PDZ domain protein	0.982	0.796	0.645	1.011	0.994	0.346	
T70586	Homo sapiens mRNA for perilipin, complete cds	0.474	0.577	0.158	0.063	0.756	-0.281	
AA446906	Homo sapiens mRNA for peroxisomal integral membrane protein	0.050	-0.031	0.331	0.057	0.312	-0.302	
AA447595	Homo sapiens mRNA for phosphatidylinositol 4-kinase, complete cds	0.159	0.533	-0.209	0.319	-0.108	-0.503	
AA599008	Homo sapiens mRNA for PKU-alpha, partial cds	-0.344	0.243	-0.445	-0.281	-0.759	0.487	
N26836	Homo sapiens mRNA for polyspecific organic cation transporter, complete cds	1.493	0.859	0.896	0.601	1.379	0.449	
AA485052	Homo sapiens mRNA for proteasome subunit p58, complete cds	-1.249	-0.170	-0.600	-0.914	-0.542	0.559	
H62029	Homo sapiens mRNA for protein kinase, Dyrk3	0.107	0.586	-0.115	0.745	-0.231	0.809	
AA465723	Homo sapiens mRNA for protein phosphatase 2C gamma	0.374	-0.281	0.122	0.170	0.276	0.936	
AA879414	Homo sapiens mRNA for PRP8 protein, complete cds	-0.198	0.319	-0.017	0.176	0.543	0.811	
N95462	Homo sapiens mRNA for putative ABC transporter, partial	0.419	0.814	0.146	0.441	0.511	0.648	
AA463411	Homo sapiens mRNA for putative bamacan protein, partial	0.143	-0.067	0.162	-0.074	-0.017	0.223	
AA490159	Homo sapiens mRNA for putative glucose 6-phosphate translocase	0.010	-0.012	0.214	0.413	0.093	0.558	
AA173926	Homo sapiens mRNA for putative glucosyltransferase, partial cds	-0.274	-0.275	0.075	-0.037	-0.140	0.891	
AA495949	Homo sapiens mRNA for putative GTP-binding protein	0.753	0.285	0.046	-0.095	0.129	-0.237	
W72965	Homo sapiens mRNA for putative lipase acid synthetase, partial	0.667	0.842	0.592	0.574	0.329	0.194	
AA047587	Homo sapiens mRNA for putative progesterone binding protein	0.228	-0.784	-0.069	0.113	0.118	0.229	
AA485633	Homo sapiens mRNA for putative ribulose-5-phosphate-epimerase, partial cds	0.090	0.174	-0.292	-0.041	-0.017	0.367	
H98943	Homo sapiens mRNA for quinoline phosphoribosyl transferase, complete cds	0.580	0.338	0.256	0.185	0.781	0.988	
W776294	Homo sapiens mRNA for rab geranylgeranyl transferase, alpha-subunit	0.207	0.287	0.226	0.044	0.027	0.958	
H64815	Homo sapiens mRNA for Rab9 effector p40, complete cds	1.400	0.949	1.181	1.940	1.173	0.848	
AA453404	Homo sapiens mRNA for RB18A protein	0.186	0.029	0.046	0.002	-0.118	0.714	
AA457153	Homo sapiens mRNA for repressor protein, partial cds	0.132	-0.001	0.061	-0.060	-0.273	0.633	
AA029578	Homo sapiens mRNA for Rer1 protein	0.448	0.074	-0.088	0.228	-0.114	0.400	
AA668470	Homo sapiens mRNA for RGS5, complete cds	0.413	0.583	0.153	1.179	0.199	-0.245	
N45123	Homo sapiens mRNA for ryanodine receptor 3, complete CDS	0.137	0.912	-0.251	-0.228	-0.121	-0.541	
AA074222	Homo sapiens mRNA for SART-1, complete cds	-0.763	-0.400	-0.254	-0.461	-0.710	-0.542	
AA600655	Homo sapiens mRNA for SCP-1, complete cds	-0.447	0.043	-0.111	-0.537	-0.467	0.309	
AA732873	Homo sapiens mRNA for serine/threonine protein kinase SAK	-0.315	-0.023	-0.139	-0.143	-0.221	0.274	
R48132	Homo sapiens mRNA for SH3 binding protein, complete cds, clone:RES4-23A	-0.890	-0.023	-0.907	-1.551	-1.041	1.040	
R01170	Homo sapiens mRNA for SKAP55 protein	-0.545	-0.328	-0.296	-0.115	-0.171	0.645	
AA035384	Homo sapiens mRNA for small subunit of cytochrome b in succinate dehydrogenase complex, complet	-0.152	0.336	0.487	0.434	-0.039	0.861	
AA629862	Homo sapiens mRNA for smallest subunit of ubiquinol-cytochrome c reductase, complete cds	0.053	0.087	-0.040	-0.110	0.104	0.764	
AA449234	Homo sapiens mRNA for smoothelin	1.125	0.727	0.398	0.358	0.696	0.061	
AA704255	Homo Sapiens mRNA for spinocerebellar ataxia 7	0.956	0.354	0.838	0.360	0.848	0.728	
R35231	Homo sapiens mRNA for SPOP	-0.320	-0.198	-0.028	0.162	-0.351	-0.411	
R01118	Homo sapiens mRNA for squalene epoxidase, complete cds	0.157	0.280	0.428	0.210	0.185	-0.033	
AA137031	Homo sapiens mRNA for STAT induced STAT inhibitor-2, complete cds	0.192	0.340	0.224	0.470	0.171	0.022	
AA001219	Homo sapiens mRNA for STAT induced STAT inhibitor-3, complete cds	0.502	0.558	0.164	0.122	0.786	0.136	
AA489785	Homo sapiens mRNA for steroid receptor coactivator 1a	-0.172	0.129	0.167	0.640	-0.322	0.433	
AA007632	Homo sapiens mRNA for synaptogyrin 1a	0.741	0.932	-0.085	0.226	0.406	1.197	
N46419	Homo sapiens mRNA for synaptogyrin 3	1.787	0.284	0.883	0.971	1.676	0.825	
H49443	Homo sapiens mRNA for synaptopodin	-0.759	-0.125	-0.786	-0.724	-0.581	0.641	
AA460969	Homo sapiens mRNA for TGF-beta activated kinase 1a, complete cds	0.115	0.239	0.071	-0.001	0.422	0.650	
AA450062	Homo sapiens mRNA for TGF-beta superfamily protein, complete cds	0.183	0.278	0.252	0.036	0.472	0.676	
AA102634	Homo sapiens mRNA for TRAF5, complete cds	0.041	-0.074	0.140	0.078	0.004	0.061	
AA489067	Homo sapiens mRNA for transducin (beta) like 1 protein	0.443	-0.101	0.543	0.209	-0.107	-0.083	
N72715	Homo sapiens mRNA for translational inhibitor protein p14.5	2.805	0.859	2.251	0.936	0.845	-0.294	
AA465355	Homo sapiens mRNA for U3 snoRNP associated 55 kDa protein	0.683	0.312	0.448	0.456	0.825	0.315	
AA424578	Homo sapiens mRNA for UDP-Gal:GlcNAc galactosyltransferase	0.169	0.101	-0.235	-0.074	-0.265	0.508	
AA486112	Homo sapiens mRNA for vacuolar proton-ATPase subunit M9.2	-0.187	0.044	0.508	0.237	0.289	0.738	
H56595	Homo sapiens mRNA for vesicle associated membrane protein 2 (VAMP2)	0.279	0.067	0.213	0.806	-0.095	1.123	
H51419	Homo sapiens mRNA for voltage gated potassium channel	3.394	0.466	1.151	1.570	1.735	0.978	
AA112979	Homo sapiens mRNA for VRK1, complete cds	-0.073	-0.040	0.247	-0.068	0.198	0.975	
AA490617	Homo sapiens mRNA for VRK2, complete cds	1.042	0.675	0.634	0.551	0.546	0.913	
R01991	Homo sapiens mRNA for zinc finger protein	0.839	-0.020	0.655	0.191	0.825	1.344	
AA421783	Homo sapiens mRNA for zinc finger protein FPM315, complete cds	0.146	-0.148	0.376	-0.073	0.694	1.168	
H17943	Homo sapiens mRNA for zinc finger protein, complete cds, clone:RES4-26	-0.061	-0.118	-0.053	0.368	0.000	1.293	
AA496887	Homo sapiens MTGS-like protein (MTGR1) mRNA, complete cds	0.028	-0.032	-0.150	0.187	0.017	0.480	
AA127685	Homo sapiens multispanning membrane protein mRNA, complete cds	0.352	1.410	0.037	0.155	0.089	0.366	
AA16685	Homo sapiens Munc13 mRNA, complete cds	-0.237	-0.340	-0.112	-0.434	-0.020	0.634	
AA621155	Homo sapiens MutS homolog (MSH5) mRNA, complete cds	-0.297	-0.100	-0.005	0.347	-0.095	0.884	
R42685	Homo sapiens myo-inositol monophosphatase 2 mRNA, complete cds	0.368	0.037	0.274	1.482	-0.142	0.760	
AA157261	Homo sapiens N-acetylglucosaminyl transferase component Gpi1 (GPI1) mRNA, complete cds	0.381	0.044	0.052	0.029	0.197	0.326	
AA448959	Homo sapiens NADH:ubiquinone oxidoreductase 15 kDa IP subunit mRNA, nuclear gene encoding mit	0.104	-0.023	0.413	-0.022	0.196	0.345	
AA055102	Homo sapiens NADH:ubiquinone oxidoreductase 18 kDa IP subunit mRNA, nuclear gene encoding mit	0.228	0.566	-0.088	0.038	0.800	0.884	
AA460251	Homo sapiens NADH:ubiquinone oxidoreductase subunit CI-KFYI mRNA, complete cds	-0.276	-0.015	0.244	0.214	0.174	0.768	
N93053	Homo sapiens NADH:ubiquinone oxidoreductase subunit CI-SGDH mRNA, complete cds	0.910	1.039	0.501	0.873	0.947	0.420	
AA402891	Homo sapiens NBMPR-insensitive nucleoside transporter ei (ENT2) mRNA, complete cds	-0.289	-0.023	-0.148	-0.197	-0.087	0.089	
AA400187	Homo sapiens nephrocystin (NPHP1) mRNA, partial cds	0.938	0.526	-0.007	1.068	0.721	0.820	
R40400	Homo sapiens neural cell adhesion molecule (CALL) mRNA, complete cds	0.280	0.177	0.380	0.531	0.464	2.493	
W40336	Homo sapiens neuroendocrine-specific protein A (NSP) mRNA, complete cds	-0.156	-0.170	0.555	-0.237	1.036	-0.003	
AA482508	Homo sapiens neuronal apoptosis inhibitory protein mRNA, complete cds	-0.287	-0.382	-0.755	-0.513	0.159	0.890	
AA486676	Homo sapiens neuronal tissue-enriched acidic protein (NAP-22) mRNA, complete cds	-0.194	0.100	0.229	-0.167	-0.368	0.858	
AA088867	Homo sapiens neuropilin mRNA, complete cds	0.059	0.208	0.050	0.321	-0.125	0.738	
N26125	Homo sapiens neuropilin-2(a17) mRNA, complete cds	-0.518	1.576	-0.751	-0.577	-0.474	0.675	
AA394127	Homo sapiens NF-A3 mRNA, complete cds	0.421	0.492	0.158	0.148	0.728	0.691	
H58953	Homo sapiens NF-E2 protein (NF-E2) mRNA, complete cds	0.092	0.386	-0.132	-0.093	0.557	0.478	
H50114	Homo sapiens NMDA receptor mRNA, complete cds	0.143	-0.320	0.247	0.088	0.087	0.591	
AA279762	Homo sapiens Nmi mRNA, complete cds	-0.555	-0.536	-0.549	-0.607	-0.227	0.622	
T63511	Homo sapiens Notch3 (NOTCH3) mRNA, complete cds	0.372	0.554	-0.303	0.247	0.168	-0.161	
AA055440	Homo sapiens novel antagonist of FGF signaling (sprout-1) mRNA, partial cds	-0.658	0.318	-0.495	-0.791	-0.161	-0.582	
AA630302	Homo sapiens NRD convertase mRNA, complete cds	0.829	0.580	-0.697	0.311	0.310	0.235	
N71003	Homo sapiens nuclear antigen H731-like protein mRNA, complete cds	0.828	1.049	0.585	0.414	0.933	0.604	
AA48821	Homo sapiens nuclear autoantigen GS2NA mRNA, complete cds	0.715	1.432	-0.199	0.212	0.103	0.477	
H72030	Homo sapiens nuclear domain 10 protein (ndp52) mRNA, complete cds	1.158	0.187	1.128	1.022	0.332	0.204	
AA282301	Homo sapiens nuclear dual-specificity phosphatase (SBF1) mRNA, partial cds	1.680	0.795	2.088	0.387	1.366	0.385	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
V80085	Homo sapiens nuclear hormone receptor (shp) gene, 3' end of cds	0.147	-0.176	0.191	-0.147	0.097	0.371	
V86860	Homo sapiens nuclear VCP-like protein NVLP.2 (NVLP.2) mRNA, complete cds	0.277	0.093	0.191	0.304	0.249	0.630	
AA491224	Homo sapiens nuclear-encoded mitochondrial cytochrome c oxidase Va subunit mRNA, complete cds	0.308	0.752	-0.024	0.384	0.218	0.312	
V81191	Homo sapiens nucleolar autoantigen No55 mRNA, complete cds	0.019	-0.383	0.228	0.020	-0.022	0.890	
AA488979	Homo sapiens nucleolar protein (MSP58) mRNA, complete cds	-0.167	-0.334	-0.284	-0.472	-0.232	0.166	
AA443058	Homo sapiens Opa-interacting protein OIP2 mRNA, partial cds	0.271	0.332	0.490	0.382	0.368	0.396	
H54393	Homo sapiens Opa-interacting protein OIP5 mRNA, partial cds	-0.054	0.309	-0.168	0.059	0.236	0.575	
R55705	Homo sapiens orexin receptor-1 mRNA, complete cds	0.154	0.138	-0.317	-0.325	-0.029	0.564	
V86471	Homo sapiens orexin receptor-2 mRNA, complete cds	-1.018	-0.689	-0.316	-0.822	-0.636	0.593	
AA430503	Homo sapiens orIP binding protein (OBP-1) mRNA, 3' end	0.179	0.129	0.205	0.497	0.275	0.731	
AA419229	Homo sapiens orphan G protein-coupled receptor (GPR39) mRNA, complete cds	-0.051	-0.133	0.166	0.064	0.115	0.573	
AA425685	Homo sapiens orphan nuclear hormone receptor BD73 mRNA, 3' end	0.663	0.698	0.420	0.578	0.588	0.168	
AA400408	Homo sapiens outer dense fiber protein 2 (odf2) mRNA, complete cds	-0.113	-0.080	0.465	0.190	0.304	-0.450	
R60723	Homo sapiens P2x purinoceptor mRNA, complete cds	0.237	0.346	-0.077	-0.072	0.553	-0.115	
R31521	Homo sapiens P52rPK mRNA, complete cds	1.184	0.490	1.855	0.908	0.591	-0.352	
AA683321	Homo sapiens PAR-5 mRNA, probable 5' end	-0.067	-0.247	0.316	-0.369	-0.185	0.233	
AA446028	Homo sapiens paraoxonase 3 (PON2) mRNA, complete cds	0.376	0.600	0.194	0.609	0.180	0.198	
T57089	Homo sapiens paraoxonase 3 (PON3) mRNA, 3' end of cds	-0.060	0.132	-0.126	-0.008	-0.097	0.361	
W73811	Homo sapiens PCF11p homolog mRNA, complete cds	0.666	0.314	0.191	-0.155	0.868	0.647	
R02189	Homo sapiens peroxisomal membrane protein 69 (PMP69) mRNA, complete cds	0.247	0.395	0.034	0.281	0.013	0.424	
N63845	Homo sapiens peroxisomal phytyl-CoA alpha-hydroxylase (PAHX) mRNA, complete cds	0.042	0.185	0.091	0.189	0.051	0.327	
AA598527	Homo sapiens peroxisome biogenesis disorder protein 1 (PEX1) mRNA, complete cds	0.592	0.780	0.102	0.311	0.298	-0.411	
R37665	Homo sapiens pescadillo mRNA, complete cds	0.155	0.205	0.509	0.359	0.411	-0.445	
AA682855	Homo sapiens PHD Finger 1 (PHF1) mRNA, complete cds	0.045	-0.081	0.288	-0.208	0.189	0.073	
AA682293	Homo sapiens phenylalanine hydroxylase (PAH) mutant Q20stop mRNA	-0.099	-0.239	0.109	0.188	-0.119	0.055	
R59165	Homo sapiens phosphatase 2A B56-alpha (PP2A) mRNA, complete cds	-0.112	-0.048	0.068	0.404	-0.045	0.005	
R40460	Homo sapiens phosphatidylinositol 4-kinase mRNA, complete cds	-0.033	0.093	0.129	-0.069	0.220	0.251	
R40460	Homo sapiens phosphatidylinositol 4-kinase mRNA, complete cds	-0.021	-0.059	0.040	-0.061	0.055	0.511	
AA430520	Homo sapiens phosphatidylinositol synthase (PIS) mRNA, complete cds	-0.040	-0.258	0.294	0.164	-0.183	0.288	
AA678335	Homo sapiens phosphodiesterase 1/nucleotide pyrophosphatase beta (PDN3P) mRNA, complete cds	-0.118	-0.082	0.231	-0.033	-0.238	0.250	
H12279	Homo sapiens phosphoglucomutase-related protein (PGMRP) gene, complete cds	-0.191	-0.316	0.056	0.192	-0.220	0.012	
AA418524	Homo sapiens phospholipase D2 (PLD2) mRNA, complete cds	1.048	0.457	0.209	0.026	0.131	0.215	
N25945	Homo sapiens phospholipid scramblase mRNA, complete cds	0.208	0.044	0.165	0.136	-0.161	0.008	
H09819	Homo sapiens phosphomethyltransferase kinase mRNA, complete cds	-0.014	-0.316	0.022	0.148	-0.358	0.336	
AA100036	Homo sapiens Pig10 (PIG10) mRNA, complete cds	0.252	0.396	0.636	0.863	0.874	0.032	
H11660	Homo sapiens Pig11 (PIG11) mRNA, complete cds	1.190	0.824	0.687	0.341	1.726	-0.046	
AA436163	Homo sapiens Pig12 (PIG12) mRNA, complete cds	-0.298	-0.102	0.125	0.001	-0.348	-0.532	
AA668595	Homo sapiens Pig3 (PIG3) mRNA, complete cds	0.378	-0.074	0.008	0.053	0.535	0.187	
AA625666	Homo sapiens Pig7 (PIG7) mRNA, complete cds	0.055	-0.303	0.078	-0.167	-0.250	0.151	
AA702548	Homo sapiens Pig8 (PIG8) mRNA, complete cds	-0.369	-0.153	-0.193	0.263	-0.313	0.370	
AA732983	Homo sapiens PIGGP1 pseudogene	-0.345	-0.035	0.012	-0.109	0.348	0.047	
AA458849	Homo sapiens placental bikunin mRNA, complete cds	0.264	-0.350	-0.102	-0.396	-0.189	-0.190	
N64508	Homo sapiens podocalyxin-like protein mRNA, complete cds	0.181	0.484	0.078	-0.220	-0.043	-0.104	
AA040742	Homo sapiens poly(A) binding protein II (PABP2) gene, complete cds	0.915	0.313	0.369	0.869	-0.265	-0.068	
H95088	Homo sapiens poly(ADP-ribose) glycohydrolase (hPARG) mRNA, complete cds	0.103	0.115	0.088	0.298	0.560	0.021	
AA090904	Homo sapiens Porc-P1 gene similar to yeast CDC45	-0.446	-0.371	-0.102	0.014	-0.278	0.149	
R39954	Homo sapiens post-synaptic density protein 95 (PSD95) mRNA, complete cds	-0.084	-0.048	0.058	-0.281	-0.166	-0.122	
H08545	Homo sapiens potassium channel homolog (KCNG3) mRNA, partial cds	0.538	0.758	0.068	0.285	0.487	-0.315	
AA069770	Homo sapiens potassium channel Kv2.1 mRNA, complete cds	0.486	-0.212	0.151	-0.143	0.169	-0.544	
N99154	Homo sapiens PRKY exon 1 and joined CDS	0.122	0.268	-0.916	-0.271	-0.603	-0.841	
N30161	Homo sapiens proline-rich Gla protein 1 (PRGP1) mRNA, complete cds	-0.164	0.068	-0.421	-0.235	-0.142	-0.245	
AA430552	Homo sapiens proline-rich Gla protein 2 (PRGP2) mRNA, complete cds	0.001	-0.638	-0.133	-0.148	-0.393	-1.448	
AA037014	Homo sapiens prostaglandin transporter hPGT mRNA, complete cds	0.542	0.171	0.315	0.885	-0.134	-0.622	
AA872020	Homo sapiens prostatein mRNA, complete cds	-0.486	-0.112	-0.377	-0.272	0.003	-0.182	
AA863149	Homo sapiens proteasome subunit XAPC7 mRNA, complete cds	0.036	-0.406	0.305	-0.071	0.078	-0.536	
AA449738	Homo sapiens protein 4.1-G mRNA, complete cds	0.112	0.417	-0.139	0.542	0.217	-0.209	
T64878	Homo sapiens protein H5 (H5) mRNA, complete cds	0.240	0.191	-0.093	0.271	0.397	0.064	
AA071486	Homo sapiens protein kinase mRNA, complete cds	0.300	0.151	0.106	0.279	0.137	0.563	
AA129171	Homo sapiens protein phosphatase 2A B56-beta (PP2A) mRNA, complete cds	0.543	0.350	0.300	0.324	0.069	-0.529	
R53787	Homo sapiens protein phosphatase 2A B56-epsilon (PP2A) mRNA, complete cds	-0.169	0.378	0.045	0.167	0.824	-0.175	
N33965	Homo sapiens protein phosphatase Wp1 mRNA, complete cds	0.502	0.430	0.093	0.043	0.368	-0.392	
H18855	Homo sapiens protein phosphatase with EF-hands-1 (PPEF-1) mRNA, complete cds	0.384	0.227	0.017	0.105	0.498	0.235	
AA449336	Homo sapiens protein regulating cytokinesis 1 (PRC1) mRNA, complete cds	0.044	0.226	-0.223	0.759	0.020	-0.582	
R59598	Homo sapiens protein tyrosine kinase (Syk) mRNA, complete cds	0.141	0.032	0.205	0.086	0.481	-0.441	
R59598	Homo sapiens protein tyrosine kinase (Syk) mRNA, complete cds	0.697	0.507	0.412	-0.029	0.706	0.070	
W72792	Homo sapiens protein-tyrosine kinase EPHB2v (EPHB2) mRNA, complete cds	-0.031	0.412	0.332	0.465	0.535	0.132	
N90783	Homo sapiens purinergic receptor P2Y5 mRNA, complete cds	-0.134	-0.141	-0.394	-0.292	-0.307	0.227	
AA046407	Homo sapiens putative ATP-dependent mitochondrial RNA helicase (SUV3) mRNA, nuclear gene enc	0.746	0.279	0.289	0.694	0.948	0.021	
R95732	Homo sapiens putative DNA methyltransferase (DNMT2) mRNA, complete cds	0.522	0.424	-0.028	-0.387	0.463	0.142	
W49667	Homo sapiens putative fatty acid desaturase MLD mRNA, complete cds	0.119	0.152	-0.081	-0.202	0.272	0.571	
AA704995	Homo sapiens putative glycine-N-acetyltransferase mRNA, complete cds	0.431	0.301	0.389	0.056	0.332	0.201	
R69593	Homo sapiens putative monocarboxylate transporter MCT mRNA, complete cds	0.621	-0.431	1.048	1.421	0.703	-0.772	
AA610004	Homo sapiens putative oncogene protein mRNA, partial cds	0.013	0.087	0.615	0.296	0.027	-0.478	
R78607	Homo sapiens putative oral tumor suppressor protein (doc-1) mRNA, complete cds	0.312	0.460	0.427	0.255	0.351	0.571	
AA457738	Homo sapiens putative OSP like protein mRNA, partial cds	0.024	-0.149	0.124	-0.509	-0.109	-0.288	
AA011347	Homo sapiens putative RNA binding protein KOC (koc) mRNA, complete cds	-0.386	0.140	-0.462	-0.610	-0.389	-0.160	
AA520979	Homo sapiens putative seven pass transmembrane protein (TM7SF1) mRNA, complete cds	0.331	0.173	0.399	0.480	0.202	0.233	
W84524	Homo sapiens putative tetraspan transmembrane protein L6H (TM4SF5) mRNA, complete cds	0.599	0.574	0.309	0.359	0.575	-0.029	
AA045180	Homo sapiens putative transcription factor CA150 mRNA, complete cds	0.421	-0.017	0.209	0.454	0.032	0.280	
AA454950	Homo sapiens putative tumor suppressor protein (101F6) mRNA, complete cds	1.430	0.382	0.788	0.840	0.345	0.213	
R44982	Homo sapiens putative tumor suppressor protein unspliced form (Fus-2) mRNA, complete cds	-0.023	0.367	0.513	0.295	0.224	0.727	
H29475	Homo sapiens pyruvate dehydrogenase kinase isoenzyme 2 (PDK2) mRNA, complete cds	0.219	0.007	-1.112	-1.152	-0.869	-0.015	
N63567	Homo sapiens pyruvate dehydrogenase kinase isoenzyme 3 (PDK3) mRNA, complete cds	0.205	-0.218	-0.327	-0.261	-0.322	-0.388	
AA464152	Homo sapiens quiescin (Q6) mRNA, complete cds	-0.378	-0.256	-0.323	-0.157	-0.127	-0.121	
N51095	Homo sapiens Rac3 (RAC3) mRNA, complete cds	0.533	0.522	0.033	0.178	0.161	-0.269	
T64150	Homo sapiens Rad51C (RAD51C) mRNA, complete cds	0.290	0.790	-0.045	0.410	-0.077	-0.142	
N26765	Homo sapiens RAD51D mRNA, complete cds	-0.160	-0.207	0.091	-0.139	0.019	-0.043	
T72338	Homo sapiens RalBP1-interacting protein (POB1) mRNA, complete cds	0.863	0.697	0.114	0.209	0.844	0.227	
AA430178	Homo sapiens Ran binding protein 2 (RanBP2alpha) mRNA, partial cds	0.918	1.248	0.928	0.323	0.936	0.059	
R11189	Homo sapiens RANBP8 mRNA, complete cds	-0.155	-0.084	-0.414	-0.114	-0.437	-1.139	
AA683172	Homo sapiens Rap2 interacting protein 8 (RPIP8) mRNA, complete cds	-0.316	-0.287	-0.797	-1.060	-0.183	0.142	
AA132086	Homo sapiens RCL (Rcl) mRNA, complete cds	-0.071	0.331	-0.292	-0.313	0.403	0.191	
H70047	Homo sapiens regulator of G protein signaling (RGS13) mRNA, complete cds	0.082	0.492	-1.180	-0.763	-0.498	-0.307	
AA709036	Homo sapiens regulator of G protein signaling 10 mRNA, complete cds	-0.052	0.075	0.419	0.556	-0.050	-0.081	
AA158244	Homo sapiens regulator of G protein signaling RGS12 (RGS) mRNA, complete cds	0.287	0.301	0.529	0.399	0.111	0.196	
W72679	Homo sapiens retinoblastoma-associated protein HEC mRNA, complete cds	0.508	0.895	0.634	0.246	1.068	-1.043	
R51021	Homo sapiens retinoic acid hydroxylase mRNA, complete cds	0.255	0.303	-0.261	0.702	0.088	-0.053	
T41177	Homo sapiens retinoic acid-inducible endogenous retroviral DNA	0.178	0.047	0.377	0.150	0.474	0.282	
AA405000	Homo sapiens ribonuclease 6 precursor, mRNA, complete cds	-0.032	0.446	-0.088	0.861	-0.471	-0.015	
T95053	Homo sapiens Rigui (RIGUI) mRNA, complete cds	-0.050	-0.031	0.429	0.613	0.030	-0.029	
AA598640	Homo sapiens ring finger protein (FXY) mRNA, complete cds	0.022	-0.105	1.250	-0.061	0.147	0.382	
AA449361	Homo sapiens RING zinc finger protein (RZF) mRNA, complete cds	-0.087	0.031	0.130	0.195	0.223	-0.284	
AA733038	Homo sapiens RNA polymerase I subunit hRPA39 mRNA, complete cds	-0.223	-0.082	-0.234	-0.225	0.198	0.005	
V81685	Homo sapiens RNA polymerase II elongation factor SIII, p15 subunit mRNA, complete cds	0.269	0.450	-0.243	-0.075	0.186	0.085	
AA630017	Homo sapiens RNA polymerase II transcription factor SIII p18 subunit mRNA, complete cds	-0.298	-0.175	-0.685	-0.847	-0.327	-0.241	
AA777406	Homo sapiens roundabout 1 (robo1) mRNA, complete cds	-0.456	-0.020	-0.022	-0.149	0.043	0.131	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA186327	Homo sapiens RRM RNA binding protein Gry-rbp (GRY-RBP) mRNA, complete cds	0.918	0.287	0.593	-0.412	-0.822	-0.117	
AA620859	Homo sapiens sarcospan-2 (SPN2) mRNA, complete cds	-0.117	-0.434	-0.224	-0.471	-0.187	-0.454	
T68892	Homo sapiens secreted frizzled related protein mRNA, complete cds	0.173	0.547	-0.404	-0.032	-0.172	-0.148	
AA430443	Homo sapiens secretory carrier membrane protein (SCAMP2) mRNA, complete cds	-1.245	-0.588	-1.487	-1.790	-0.792	0.150	
R72518	Homo sapiens secretory carrier membrane protein (SCAMP3) mRNA, complete cds	0.493	0.097	0.379	0.098	0.396	0.058	
AA490945	Homo sapiens secretory carrier-associated membrane protein (SCAMP) mRNA, complete cds	0.057	0.188	-0.006	0.186	0.557	-0.059	
AA436152	Homo sapiens semaphorin F homolog mRNA, complete cds	0.284	0.266	0.164	0.602	0.404	0.222	
T65211	Homo sapiens serine kinase SRPK2 mRNA, complete cds	0.470	0.487	0.198	0.410	0.586	0.924	
AA459401	Homo sapiens serine protease-like protease (nes1) mRNA, complete cds	0.355	-0.091	0.173	-0.265	1.061	0.499	
AA282196	Homo sapiens serine/threonine protein kinase mRNA, complete cds	0.219	0.476	0.319	0.276	0.065	0.453	
AA486082	Homo sapiens sgk gene	0.297	0.064	0.031	-0.222	-0.031	0.917	
AA700222	Homo sapiens SH3-containing adaptor molecule-1 mRNA, complete cds	-0.182	-0.108	0.111	0.058	0.269	0.254	
AA455640	Homo sapiens signalosome subunit 3 (Sgn3) mRNA, complete cds	-0.037	-0.119	-0.085	-0.286	0.530	0.211	
R18237	Homo sapiens sin3 associated polypeptide p18 (SAP18) mRNA, complete cds	0.369	0.069	0.306	-0.121	0.328	0.265	
AA496357	Homo sapiens SKB1Hs mRNA, complete cds	0.024	-0.223	-0.515	-0.736	-0.149	-0.015	
AA455925	Homo sapiens skeletal muscle LIM-protein FHL1 mRNA, complete cds	0.431	0.095	0.219	0.593	-0.190	0.309	
AA460438	Homo sapiens skeletal muscle LIM-protein FHL3 mRNA, complete cds	0.167	0.063	0.075	0.751	-0.168	-0.156	
AA424700	Homo sapiens SMAD5 (Sma5) mRNA, complete cds	1.323	0.621	1.224	0.618	0.657	-1.107	
AA628430	Homo sapiens Sm-like protein CaSm (CaSm) mRNA, complete cds	-0.508	-0.621	-0.644	-1.184	-0.558	0.102	
AA452278	Homo sapiens sodium bicarbonate cotransporter (HNBC1) mRNA, complete cds	0.463	0.752	-0.029	0.228	0.238	0.049	
AA490044	Homo sapiens sodium/myo-inositol cotransporter (SLC5A3) gene, complete cds	0.959	0.510	0.717	0.724	1.011	0.151	
AA171463	Homo sapiens sorting nexin 2 (SNX2) mRNA, complete cds	-0.726	-0.619	-0.721	-0.659	-0.540	0.091	
AA428551	Homo sapiens SOX22 protein (SOX22) mRNA, complete cds	0.091	0.097	-0.049	-0.327	-0.074	0.395	
N54552	Homo sapiens spindie pole body protein spc88 homolog mRNA, complete cds	0.234	0.182	-0.009	0.270	-0.029	-0.401	
AA449693	Homo sapiens spindie pole body protein BUB3 (BUB3) mRNA, complete cds	-0.447	0.178	0.242	0.217	0.404	0.207	
H47069	Homo sapiens spleen mitotic checkpoint CC1.3 mRNA, complete cds	0.632	0.219	0.264	0.154	0.326	0.220	
H78241	Homo sapiens splicing factor Sfp1 mRNA, complete cds	0.116	0.234	0.338	0.247	-0.068	-0.476	
AA453759	Homo sapiens Sprouty 2 (SPRY2) mRNA, complete cds	0.435	0.147	0.046	-0.256	0.075	0.030	
AA609599	Homo sapiens SRSX3 (SRSX3) mRNA, complete cds	0.155	0.507	0.724	0.762	0.247	-0.968	
AA085319	Homo sapiens stanniocalcin precursor (STC) mRNA, complete cds	0.021	-0.012	-0.289	0.113	0.129	-0.492	
AA488247	Homo sapiens stat-like protein (Fe65) mRNA, complete cds	-0.027	-0.012	0.136	-0.291	0.182	-0.072	
AA425401	Homo sapiens STE20-like kinase 3 (mst3) mRNA, complete cds	-0.390	-0.405	-0.853	-1.329	-0.593	0.067	
H61188	Homo sapiens STE20-like kinase 3 (mst3) mRNA, complete cds	0.375	0.173	-0.147	-0.119	0.359	0.082	
T57810	Homo sapiens Su(var)3-9 homolog (SUV39H) mRNA, complete cds	0.549	1.355	0.396	0.651	0.371	0.244	
AA425806	Homo sapiens suppressin (spn) mRNA, complete cds	1.728	0.526	0.515	0.433	0.330	0.067	
N26026	Homo sapiens survival of motor neuron protein interacting protein 1 (SIP1) mRNA, complete cds	0.069	0.090	0.182	-0.322	0.115	-0.423	
H87106	Homo sapiens T245 protein (T245) mRNA, complete cds	0.344	0.287	0.118	0.187	0.228	0.107	
AA679208	Homo sapiens TAK1 binding protein (TAB1) mRNA, complete cds	0.156	0.068	0.384	-0.171	0.195	0.285	
T69304	Homo sapiens tapasin (NGS-17) mRNA, complete cds	0.227	0.254	0.503	0.774	0.470	-0.346	
AA434159	Homo sapiens Tax interaction protein 2 mRNA, partial cds	-0.187	0.228	0.238	-0.486	-0.854	-0.169	
AA757170	Homo sapiens Tax interaction protein 33 mRNA, partial cds	-0.369	-0.254	-0.197	-0.472	-0.393	0.022	
AA621019	Homo sapiens Tax interaction protein 40 mRNA, partial cds	1.089	0.582	0.193	0.368	0.420	-0.170	
R10726	Homo sapiens Tax interaction protein 43 mRNA, partial cds	0.537	0.791	1.594	2.572	0.072	0.204	
V85892	Homo sapiens TAF-172 associated factor 172 (TAF-172) mRNA, complete cds	0.013	0.082	0.218	0.521	0.246	0.314	
H67086	Homo sapiens TBP-associated factor 172 (TAF-172) mRNA, complete cds	0.391	0.111	0.153	-0.009	0.455	0.353	
AA151294	Homo sapiens telomeric repeat binding factor (TRF1) mRNA, complete cds	0.654	0.553	0.405	0.352	1.131	0.189	
AA406064	Homo sapiens testis-specific Basic Protein Y 1 (BPLY1) mRNA, complete cds	0.455	0.455	-0.292	0.610	0.454	-0.391	
AA100696	Homo sapiens tetraspanin (TAG-2) mRNA, complete cds	0.155	0.030	0.052	0.015	0.147	-1.194	
AA464601	Homo sapiens tetraspanin Tapan-5 (TSPAN-5) gene, complete cds	0.420	1.218	0.213	-0.535	0.592	-0.205	
AA156940	Homo sapiens tetraspanin Tapan-5 (TSPAN-5) gene, complete cds	0.110	0.819	0.128	-0.132	-0.264	-0.125	
AA078976	Homo sapiens thiodoxin-like protein mRNA, complete cds	-0.356	-0.328	-0.280	0.289	-0.357	-0.182	
AA774044	Homo sapiens thiodoxin-like protein (THBS3) gene, complete cds	0.281	0.818	0.115	0.378	-0.151	-0.147	
AA486239	Homo sapiens thymosin alpha (thymosin alpha) mRNA, complete cds	0.667	1.037	0.626	0.921	0.627	0.071	
AA489011	Homo sapiens thyroid autoantigen (truncated actin-binding protein) mRNA, complete cds	0.336	0.750	0.383	0.768	0.090	0.322	
AA476490	Homo sapiens thyroid receptor interactor (TRIP4) mRNA, 3' end of cds	0.138	0.731	0.230	0.589	0.301	0.473	
AA431321	Homo sapiens thyroid receptor interactor (TRIP7) mRNA, 3' end of cds	-0.007	0.524	0.317	0.446	0.665	0.640	
AA806371	Homo sapiens thyroid receptor interactor (TRIP9) gene, complete cds	1.960	-0.085	1.016	0.624	1.832	-0.321	
AA916906	Homo sapiens TNF receptor-1 associated protein (TRADD) mRNA, 3' end of cds	0.472	0.539	0.225	0.271	0.641	-0.079	
AA485752	Homo sapiens TNF-related ligand TRANCE mRNA, partial cds	0.035	0.118	0.212	0.030	0.704	-0.410	
AA504211	Homo sapiens TNF-related ligand TRANCE mRNA, partial cds	0.088	0.643	-0.249	-0.160	0.086	-0.402	
AA394148	Homo sapiens torsinA (DYT1) mRNA, complete cds	0.272	0.365	0.101	1.223	0.196	-0.266	
AA040879	Homo sapiens torsinB (DQ1) mRNA, partial cds	0.993	0.552	0.174	0.541	0.436	-0.672	
AA487031	Homo sapiens TPA inducible protein mRNA, complete cds	0.299	-0.111	0.156	0.006	0.299	-0.287	
AA453410	Homo sapiens TRAIL receptor 2 mRNA, complete cds	0.189	0.596	0.195	0.038	0.614	0.213	
AA454218	Homo sapiens transcription factor SL1 mRNA, complete cds	-0.095	-0.260	-0.153	-0.210	-0.344	0.242	
R32478	Homo sapiens transcription factor SL1 mRNA, partial cds	-0.098	0.093	0.463	0.446	0.323	0.379	
AA454673	Homo sapiens transcription factor ZFM1 isoform B3 mRNA, complete cds	0.084	0.695	0.490	0.818	0.747	0.860	
R39430	Homo sapiens transcription intermediary factor 1 (TIF1) mRNA, complete cds	0.332	0.801	-0.023	0.204	0.386	0.950	
H82891	Homo sapiens trans-golgi network glycoprotein 46 (hTGN46) mRNA, complete cds	0.185	0.331	-0.152	-0.125	0.371	-0.833	
H94482	Homo sapiens transmembrane protein mRNA, complete cds	0.517	1.02	-0.126	-0.191	-0.131	-0.748	
AA190941	Homo sapiens Trio mRNA, complete cds	0.751	1.056	0.874	0.580	0.064	-0.256	
AA678590	Homo sapiens TTAGGG repeat binding factor 2 (hTRF2) mRNA, complete cds	-0.234	-0.115	-0.296	-0.657	-0.154	-0.860	
AA434139	Homo sapiens TTF-1 interacting peptide 20 mRNA, partial cds	0.141	0.186	-0.139	-0.253	0.070	-0.195	
AA857195	Homo sapiens tumor-suppressing subchromosomal transferable fragment 1 (TSSC1) mRNA, complete	-0.467	0.058	0.002	0.462	0.385	-0.478	
N35070	Homo sapiens TWEAK mRNA, complete cds	0.242	0.041	0.359	0.541	0.186	-0.527	
T49657	Homo sapiens TWIK-related acid-sensitive K+ channel (TASK) mRNA, complete cds	0.230	0.053	-0.158	-0.391	-0.178	-0.532	
R45941	Homo sapiens tyrosine phosphatase (IA-2/PTP) mRNA, complete cds	0.754	0.189	-0.382	-0.150	0.069	0.093	
AA703250	Homo sapiens U4/U6 small nuclear ribonucleoprotein hPrp4 mRNA, complete cds	-0.045	-0.010	-0.094	-0.073	0.116	0.461	
AA598470	Homo sapiens U5 snRNP 100 kD protein mRNA, complete cds	-0.039	0.153	0.211	0.425	0.302	0.607	
AA292074	Homo sapiens ubiquitin conjugating enzyme (UbcH8) mRNA, complete cds	0.021	0.347	-0.248	0.461	-0.152	0.767	
AA443634	Homo sapiens ubiquitin conjugating enzyme G2 (UBE2G2) mRNA, complete cds	-0.038	0.368	0.243	-0.039	-0.197	0.349	
H90287	Homo sapiens ubiquitously TPR motif, X isoform (UTX) mRNA, alternative transcript 1, complete cds	0.012	0.390	-0.220	-0.206	-0.024	-0.057	
AA280832	Homo sapiens UDP-galactose-4-epimerase (GALE) mRNA, complete cds	0.212	0.537	-0.148	-0.719	-0.466	0.023	
AA118410	Homo sapiens U-snRNP-associated cyclophilin (USA-CyP) mRNA, complete cds	0.552	0.310	0.247	-0.045	0.238	-0.098	
AA088475	Homo sapiens vasopressin-activated calcium mobilizing putative receptor protein (VACM-1) mRNA, co	-0.586	-0.003	-1.043	-0.972	-1.216	-0.942	
AA704511	Homo sapiens vesicle soluble NSF attachment protein receptor (VT1) mRNA, complete cds	-0.235	0.200	-0.172	0.262	0.381	0.086	
N64051	Homo sapiens Werner syndrome gene, complete cds	0.442	0.609	0.003	-0.166	0.463	-0.068	
AA459013	Homo sapiens X-ray repair cross-complementing protein 3 (XRCC3) mRNA, complete cds	-0.110	0.111	-0.055	-0.033	0.336	-0.727	
AA115537	Homo sapiens zinc finger protein (ZNF198) mRNA, complete cds	1.267	0.416	0.825	0.741	0.871	-0.195	
AA252169	Homo sapiens zinc finger protein mRNA, complete cds	-0.151	0.592	0.351	0.480	0.833	0.744	
N59119	Homo sapiens zinc finger transcription factor (ZNF207) mRNA, complete cds	1.843	0.726	1.448	1.331	1.484	0.470	
AA046525	Homo sapiens, alpha-1 (VI) collagen	1.446	1.525	2.008	0.699	1.321	0.899	
AA448277	Homolog 1 of Drosophila forkhead (rhaddomyosarcoma)	0.310	1.070	-0.043	-0.259	0.420	0.536	
R60019	Homolog 2 of Drosophila large discs	0.625	0.086	0.227	0.155	-0.195	0.027	
W44685	Homolog 3 of Drosophila large discs	-0.197	-0.186	-0.033	-0.004	0.454	0.439	
AA598758	Homologue of mouse tumor rejection antigen gp96	0.093	0.304	-0.118	-0.056	0.347	-0.865	
N04487	Hormone receptor (growth factor-inducible nuclear protein N10)	0.687	0.585	0.457	0.452	0.977	-0.399	
T74142	HPV16 E1 protein binding protein	0.389	0.920	0.238	-0.489	-0.036	0.116	
T74142	HPV16 E1 protein binding protein	1.146	0.834	0.150	0.262	0.470	0.024	
H63260	HSPM-1	-0.097	-0.096	-1.198	-0.078	0.124	-0.033	
AA446017	HTS1	0.263	0.139	0.214	-0.149	0.215	0.046	
AA456008	Human (AF1q) mRNA, complete cds	0.168	0.188	-0.322	-0.600	0.047	0.889	
N66208	Human (ard-1) mRNA, complete cds	0.022	-0.031	-0.374	-0.324	-0.389	0.530	
AA496784	Human (chromosome 3p25) membrane protein mRNA	0.319	1.059	0.359	0.851	0.539	0.862	
H53340	Human (clone 14VS) metallothionein-IG (MT1G) gene, complete cds	1.139	0.455	0.938	0.244	0.761	0.453	
AA418564	Human (clone 8B1) Br-cadherin mRNA, complete cds	-0.021	0.751	0.558	0.433	0.887	-0.525	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA496879	Human (clone E5.1) RNA-binding protein mRNA, complete cds	0.059	0.906	0.589	0.522	0.379	0.222	
AA281366	Human (clone N5-4) protein p84 mRNA, complete cds	-0.047	0.599	0.237	0.196	0.052	0.115	
AA430615	Human (clone pA3) protein disulfide isomerase related protein (ERP72) mRNA, complete cds	-0.078	0.081	0.399	-0.110	0.103	0.087	
AA424786	Human (clone SY11) golgin-95 mRNA, complete cds	-0.108	-0.047	0.341	-0.326	0.959	0.201	
H58873	Human (HepG2) glucose transporter gene mRNA, complete cds	0.319	0.544	-0.144	0.165	0.362	0.311	
AA479741	Human (Hin-3)/HIV1 promoter region chimeric mRNA, complete cds	-0.102	0.209	-0.370	-0.577	0.448	0.578	
N26665	Human (lambda) DNA for immunoglobulin light chain	-0.899	1.052	-1.001	-0.233	-0.605	0.061	
AA669341	Human (p23) mRNA, complete cds	0.119	0.004	0.387	0.831	-0.166	0.832	
AA017383	Human 100 kDa coactivator mRNA, complete cds	-0.687	-0.171	-0.654	-0.892	-0.227	1.023	
N21624	Human 14-3-3 epsilon mRNA, complete cds	-0.078	0.526	-0.105	0.361	0.363	0.751	
AA099134	Human 150 kDa oxygen-regulated protein ORP150 mRNA, complete cds	0.280	0.019	-0.122	-0.131	0.316	0.470	
AA086038	Human 180 kDa transmembrane PLA2 receptor mRNA, complete cds	0.456	0.610	0.373	0.333	0.524	0.933	
AA458100	Human 19.8 kDa protein mRNA, complete cds	-0.190	0.127	0.467	0.242	0.566	0.691	
AA877166	Human 20-kDa myosin light chain (MLC-2) mRNA, complete cds	0.045	0.122	0.344	0.218	0.349	-1.017	
R08876	Human 26S proteasome-associated pad1 homolog (POH1) mRNA, complete cds	-0.540	0.105	-0.212	-0.489	0.254	-0.350	
AA400893	Human 3' 5' cyclic nucleotide phosphodiesterase (HSPDE1A3A) mRNA, complete cds	-0.540	0.044	-0.242	-0.451	0.212	-0.050	
AA521228	Human 3-hydroxyisobutyryl-coenzyme A hydrolase mRNA, complete cds	0.655	0.745	0.248	0.727	0.055	0.037	
R32459	Human 44.9 kDa protein C18B11 homolog gene, partial cds	0.041	0.349	0.092	0.388	0.074	0.221	
T32411	Human 53K isoform of Type II phosphatidylinositol-4-phosphate 5-kinase (PIPK) mRNA, complete cds	0.076	0.615	0.949	1.209	0.421	0.190	
W06653	Human 54 kDa progesterone receptor-associated immunophilin FKBP54 mRNA, partial cds	0.818	0.793	0.184	0.566	0.171	0.490	
AA056465	Human 54 kDa protein mRNA, complete cds	-0.243	-0.221	-0.157	-0.303	-0.210	0.853	
AA070495	Human 5'-AMP-activated protein kinase, gamma-1 subunit mRNA, complete cds	0.229	0.164	0.459	0.399	-0.246	0.634	
AA010352	Human 60-kDa ribonucleoprotein (Ro) mRNA, complete cds	-0.249	0.356	0.135	0.535	-0.410	0.743	
N64014	Human 68 kDa type I phosphatidylinositol-4-phosphate 5-kinase alpha mRNA, clone PIP5K1a1, comple	0.356	0.017	0.247	0.787	-0.179	0.428	
N52958	Human 76 kDa tyrosine phosphoprotein SLP-76 mRNA, complete cds	0.436	-0.524	-0.232	0.216	-0.353	0.564	
R44334	Human 90 kD heat shock protein gene, complete cds	0.486	1.114	0.436	-0.016	0.539	-0.424	
R44334	Human 90 kD heat shock protein gene, complete cds	0.668	0.790	0.060	0.104	0.542	-0.307	
AA453774	Human A28-RGS14p mRNA, complete cds	0.042	0.126	0.613	0.495	0.036	-0.351	
AA055811	Human A33 antigen precursor mRNA, complete cds	0.285	-0.124	0.316	0.323	-0.020	0.159	
AA451935	Human Aec11 (aec11) mRNA, complete cds	-0.134	-0.199	-0.285	-0.170	-0.108	0.224	
T71209	Human abnormal beta-hexosaminidase alpha chain (HEXA) mRNA, partial cds	1.334	1.130	0.281	0.319	0.493	0.164	
AA451741	Human acetoacetyl synthase homolog mRNA, complete cds	-0.204	-0.048	-0.186	0.219	-0.300	0.646	
AA772816	Human acidic 82 kDa protein mRNA, complete cds	0.160	0.463	-0.499	0.017	-0.653	0.759	
AA427891	Human activated p21cdc42Hs kinase (ack) mRNA, complete cds	0.072	-0.199	-0.105	-0.148	0.146	0.694	
AA035455	Human acyl-CoA thioester hydrolase mRNA, complete cds	0.468	0.295	0.275	0.185	0.248	0.477	
AA045508	Human acetyl-CoA cyclase-associated protein homolog CAP2 (CAP2) mRNA, complete cds	0.608	0.235	0.540	0.686	0.446	0.245	
R61295	Human ADP/ATP translocase mRNA, 3' end, clone pAT8	0.526	0.513	-0.083	-0.274	0.078	0.268	
R61295	Human ADP/ATP translocase mRNA, 3' end, clone pAT8	0.698	0.797	-0.511	-0.864	-0.008	-0.316	
H11049	Human ADP-ribosylation factor 1 (ARF1) mRNA, complete cds	-0.331	0.062	0.021	0.294	-0.161	-0.081	
H11049	Human ADP-ribosylation factor 1 (ARF1) mRNA, complete cds	0.640	0.725	0.218	0.343	0.322	0.242	
H28952	Human ADP-ribosylation factor mRNA, complete cds	-0.367	-0.260	0.097	0.438	-0.173	0.237	
H28952	Human ADP-ribosylation factor mRNA, complete cds	0.128	0.389	0.337	-0.111	0.226	0.219	
AA779165	Human ADP-ribosylation factor-like protein 4 mRNA, complete cds	-0.501	-0.227	0.126	-0.398	-0.247	0.380	
AA284856	Human adult heart mRNA for neutral calponin, complete cds	-0.020	0.030	-0.157	-0.266	-0.185	0.758	
N26539	Human AF-6 mRNA, complete cds	1.553	-1.607	1.097	1.104	-1.057	0.612	
N59115	Human alpha1-fetoprotein transcription factor (hFTF) mRNA, complete cds	-0.997	0.224	-0.066	-0.995	0.209	0.677	
AA633747	Human alpha-2 collagen type VI mRNA, 3' end	1.007	0.292	0.469	0.271	0.441	0.663	
R43753	Human alpha2,8-sialyltransferase mRNA, complete cds	-0.031	0.323	-0.104	0.385	-0.197	0.433	
H06516	Human alpha-2-macroglobulin mRNA, complete cds	0.406	0.144	0.559	-0.030	-0.230	-0.089	
H06516	Human alpha-2-macroglobulin mRNA, complete cds	0.154	0.347	0.212	0.336	-0.225	0.156	
N90109	Human alpha-cardiac actin gene, 5' flank and	0.432	0.071	0.160	-0.082	0.203	-0.054	
AA490047	Human alpha-CP1 mRNA, complete cds	0.246	0.567	0.447	0.444	-0.342	0.141	
AA626658	Human alpha-tubulin isotype H2-alpha gene, last exon	0.122	-0.168	0.218	0.125	0.354	0.161	
AA855469	Human alpha-tubulin mRNA, 3' end	2.299	1.325	1.643	0.184	0.869	0.445	
R40634	Human AMP deaminase (AMPD2) mRNA	-0.074	-0.010	0.198	0.198	0.088	0.318	
R40634	Human AMP deaminase (AMPD2) mRNA	0.107	0.165	0.305	-0.080	-0.002	-0.946	
AA126860	Human amyloid precursor protein-binding protein 1 mRNA, complete cds	0.054	-0.437	0.123	-0.209	-0.055	0.496	
N52866	Human amyloid precursor-like protein 1 mRNA, complete cds	0.444	0.152	0.259	0.284	0.706	0.167	
AA609880	Human anion exchanger 3 brain isoform (BAE3) mRNA, complete cds	0.121	-0.206	-0.350	0.168	0.282	-0.478	
AA089759	Human antimicrobial LPS-binding protein CAP18 precursor mRNA, complete cds	0.358	0.040	0.447	-0.045	0.154	-0.335	
AA459663	Human antioxidant enzyme AOE37-2 mRNA, complete cds	0.325	-0.828	0.394	0.261	0.226	0.057	
AA450227	Human antiseptory factor-1 mRNA, complete cds	0.345	-1.675	-0.058	0.355	0.584	-0.191	
AA630776	Human AP-3 complex delta subunit mRNA, complete cds	0.257	-0.712	-0.441	0.245	-0.396	-0.139	
R43778	Human APEG-1 mRNA, complete cds	0.097	0.022	0.113	-0.027	-0.002	0.320	
H45618	Human apM1 mRNA for GS3109 (novel adipose specific collagen-like factor), complete cds	-0.262	0.150	0.155	0.420	0.128	0.249	
H80712	Human apoptotic cysteine protease Mch4 (Mch4) mRNA, complete cds	0.917	0.026	0.583	0.643	0.161	-0.406	
AA598510	Human APRT gene for adenine phosphoribosyltransferase	0.449	0.528	0.229	0.347	0.088	-0.739	
AA626014	Human ARF-activated phosphatidylcholine-specific phospholipase D1a (hPLD1) mRNA, complete cds	0.337	0.479	0.266	0.500	-0.099	-0.350	
AA425908	Human arfaptin 2, putative target protein of ADP-ribosylation factor, mRNA, complete cds	-0.304	0.110	-0.595	0.093	0.068	-0.954	
H56944	Human arginine-rich nuclear protein mRNA, complete cds	-0.229	0.435	0.163	0.464	0.455	-0.062	
R91550	Human arginine-rich protein (ARP) gene, complete cds	-0.274	-0.002	-0.250	0.058	0.235	-0.075	
H17975	Human armadillo repeat protein mRNA, complete cds	-0.040	0.278	0.235	-0.018	0.827	-0.200	
R01211	Human associated microfibrillar protein mRNA, complete cds	-0.071	0.191	-0.772	-0.362	-0.645	-0.041	
AA029964	Human ataxin-2 related protein mRNA, partial cds	0.214	0.469	0.100	-0.010	0.260	0.194	
AA054277	Human ATP binding cassette transporter (ABCR) mRNA, complete cds	0.131	0.335	0.119	0.335	0.187	0.104	
AA459407	Human ATPase, DNA-binding protein (HIP116) mRNA, 3' end	0.718	-0.058	0.352	0.504	0.373	0.791	
R83876	Human ATP-binding cassette protein mRNA 06B09 clone, partial cds	0.592	0.402	0.243	0.231	0.549	0.644	
AA227982	Human autoantigen DFS70 mRNA, partial cds	0.552	0.224	1.130	0.083	0.539	0.193	
AA481276	Human autoantigen mRNA, complete cds	0.230	-0.448	0.461	0.178	-0.099	-1.277	
AA164440	Human autoantigen pericentriol material 1 (PCM-1) mRNA, complete cds	-0.337	-0.184	-0.168	-0.437	-0.388	-0.647	
R38717	Human autotaxin mRNA, complete cds	0.324	0.428	-0.030	-0.023	0.331	-0.764	
R50953	Human B lymphocyte serine/threonine protein kinase mRNA, complete cds	0.504	0.177	-0.110	0.064	0.274	-1.467	
AA456314	Human B12 protein mRNA, complete cds	0.580	0.399	0.150	0.281	0.448	0.021	
AA669637	Human B4-2 protein mRNA, complete cds	0.050	-0.111	-0.172	0.154	0.222	-0.387	
N90281	Human B7 mRNA, complete cds	-0.065	-0.063	-0.046	-0.301	-0.422	-0.075	
H52673	Human Bak mRNA, complete cds	0.732	1.166	0.628	0.808	0.735	0.187	
R43576	Human basic-leucine zipper nuclear factor (JEM-1) mRNA, complete cds	-0.162	-0.271	-0.930	-1.026	0.462	0.496	
AA113291	Human B-cell mRNA for a member of the short-chain alcohol dehydrogenase family, partial cds	1.029	0.343	0.876	0.233	0.515	0.930	
AA464567	Human B-cell receptor associated protein (hBAP) mRNA, partial cds	0.050	0.349	0.114	0.437	-0.044	1.008	
AA460291	Human Bcl-2 binding component 6 (bbc6) mRNA, complete cds	0.579	0.991	0.801	0.683	0.396	0.841	
AA459263	Human Bcl-2 related (Bfl-1) mRNA, complete cds	-0.105	0.082	-0.176	-0.528	-0.333	-1.108	
N48652	Human Bcl2, p53 binding protein Bbp/53BP2 (BBP/53BP2) mRNA, complete cds	0.164	0.568	0.498	0.327	0.304	-0.786	
AA041400	Human beige-like protein (BGL) mRNA, partial cds	0.430	0.572	0.015	0.030	0.396	-0.674	
AA778392	Human BENE mRNA, partial cds	-0.071	0.071	-0.272	-0.105	0.080	-0.336	
AA888148	Human beta 2 gene for beta-tubulin	0.806	-0.115	0.292	0.447	0.140	-0.029	
AA043806	Human beta 3-endonexin mRNA, long form and short form, complete cds	-0.548	-0.430	-0.565	-0.377	-0.769	0.535	
AA485653	Human beta-1,2-N-acetylglucosaminyltransferase II (MGAT2) gene, complete cds	0.393	-0.239	-0.136	0.162	0.236	0.413	
AA521339	Human beta2-chimaerin (SNT B2) mRNA, complete cds	-0.005	-0.445	0.078	-0.587	0.400	0.542	
AA491439	Human beta2-syntrophin (SNT B2) mRNA, complete cds	0.214	0.506	-0.085	0.024	0.254	0.467	
AA487614	Human beta-A3A1 crystallin (CYRBA3A1) mRNA, partial cds	0.186	0.252	0.498	0.120	-0.217	0.874	
R54807	Human beta-sarcoglycan A3b mRNA, complete cds	0.418	0.445	0.330	0.262	0.088	0.920	
N74524	Human beta-tubulin gene (5-beta) with ten Alu family members	0.341	0.216	0.166	-0.094	0.333	0.890	
H17528	Human bHLH-PAS protein JAP3 mRNA, complete cds	0.288	0.395	-0.077	0.513	0.509	0.684	
AA192419	Human biliverdin IXalpha reductase mRNA, complete cds	-1.111	-0.637	-1.146	-0.975	-1.006	0.222	
H39192	Human BMK1 alpha kinase mRNA, complete cds	0.444	0.296	0.122	0.229	0.347	-0.152	
R52085	Human bone morphogenetic protein-3b	0.787	1.128	0.754	0.855	0.856	0.179	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
N54053	Human bone phosphoprotein spp-24 precursor mRNA, complete cds	0.806	0.619	0.182	0.253	0.688	0.529	
T98019	Human Br140 mRNA, complete cds	0.739	0.923	0.118	0.619	0.569	0.451	
R44018	Human brain mRNA for photolyase homolog, complete cds	0.399	0.638	0.257	0.275	0.602	-0.002	
H59916	Human brain mRNA homologous to 3'UTR of human CD24 gene, partial sequence	0.372	0.603	0.131	0.237	0.452	0.402	
R78597	Human brain secretory protein hSec10p (HSEC10) mRNA, complete cds	-0.016	-0.184	0.310	0.330	-0.063	0.449	
AA678295	Human BRCA1-associated RING domain protein (BARD1) mRNA, complete cds	0.335	0.343	0.199	0.368	-0.191	0.466	
N59893	Human BRCA2 region, mRNA sequence CG005	0.235	0.141	0.288	-0.037	0.674	0.870	
W80632	Human BRCA2 region, mRNA sequence CG006	0.457	0.925	0.470	0.696	0.840	0.277	
AA699390	Human BRCA2 region, mRNA sequence CG012	0.110	0.230	0.582	0.855	0.693	0.900	
AA487590	Human BRCA2 region, mRNA sequence CG018	0.782	0.429	-0.111	-0.535	0.601	0.885	
H29315	Human breast cancer, estrogen regulated LIV-1 protein (LIV-1) mRNA, partial cds	0.230	0.408	0.336	0.277	0.227	0.661	
H50323	Human breast carcinoma fatty acid synthase mRNA, complete cds	-0.116	-0.173	0.322	0.048	-0.014	0.875	
AA449687	Human breast epithelial antigen BA46 mRNA, complete cds	0.084	0.212	0.091	-0.192	0.447	0.147	
H27986	Human breast tumor autoantigen mRNA, complete sequence	-0.058	-0.075	-0.651	-0.317	-0.498	-0.016	
AA115186	Human Bruton's tyrosine kinase-associated protein-135 mRNA, complete cds	0.701	0.501	0.433	0.120	0.513	0.200	
H69583	Human BTG2 (BTG2) mRNA, complete cds	0.403	-0.035	0.241	-0.018	0.525	1.218	
AA679345	Human BTK region clone Rp-3 mRNA	0.046	0.657	0.278	0.562	0.568	0.476	
H44785	Human bullous 230 kDa pemphigoid antigen (BPAG1) mRNA, complete cds	-0.055	0.201	-0.321	-0.315	-0.162	1.074	
AA262080	Human bumetanide-sensitive Na-K-Cl cotransporter (NKCC1) mRNA, complete cds	0.376	0.387	0.186	0.154	0.642	0.710	
H68107	Human butyrophilin (BTFL1) mRNA, complete cds	0.124	0.414	0.344	0.227	0.681	0.864	
H29295	Human butyrophilin (BTFL2) mRNA, complete cds	-0.255	-0.111	-0.179	0.328	-0.374	0.872	
AA478585	Human butyrophilin protein (BT3.3) mRNA, partial cds	0.160	0.500	0.292	0.259	0.142	0.577	
AA253430	Human C-1 mRNA, complete cds	0.140	0.510	-0.058	-0.085	-0.227	1.378	
AA701981	Human C2f mRNA, complete cds	-0.276	0.046	0.030	-0.079	0.125	0.354	
R42894	Human Ca2+-dependent activator protein for secretion mRNA, complete cds	-0.872	-0.951	0.374	-0.441	0.238	0.778	
R32410	Human Ca2+-dependent phospholipase A2 mRNA, complete cds	0.474	0.158	0.504	0.482	0.564	0.356	
H45976	Human cadherin-associated protein-related (cap-r) mRNA, complete cds	-0.322	-0.073	0.063	0.485	-0.077	0.651	
H51117	Human calmodulin dependent phosphodiesterase PDE1B1 mRNA, complete cds	0.378	-0.143	-0.063	-0.180	0.095	0.364	
AA663828	Human calmodulin mRNA, complete cds	-0.076	0.004	-0.191	-0.018	0.303	0.662	
W44860	Human calmodulin mRNA, complete cds	-0.108	0.396	0.439	0.249	0.015	0.611	
AA777637	Human calpain-like protease (hita-3) mRNA, complete cds	-0.041	0.141	0.288	0.313	0.207	0.420	
H65034	Human cAMP phosphodiesterase mRNA, 3' end	0.294	0.782	0.585	0.158	0.963	0.595	
R22790	Human cAMP responsive element binding protein beta subunit (CREBPA) mRNA, complete cds	0.398	0.508	0.565	0.247	0.899	0.576	
AA083228	Human cAMP responsive element mRNA, partial cds	0.392	0.462	0.319	-0.063	0.854	0.504	
R42609	Human capping protein alpha mRNA, partial cds	0.647	0.888	0.473	0.028	0.469	0.624	
R42609	Human capping protein alpha mRNA, partial cds	-0.096	1.023	-0.335	-0.756	-0.133	0.436	
AA449753	Human capping protein alpha subunit isoform 1 mRNA, complete cds	0.225	0.485	0.258	0.457	0.588	0.327	
AA099487	Human carboxylesterase (hCE-2) mRNA, complete cds	0.441	0.419	0.158	-0.011	0.547	0.128	
AA084403	Human cardiotrophin-1 (CTF1) mRNA, complete cds	-0.137	0.168	0.010	-0.118	0.191	0.367	
W85710	Human carnitine palmitoyltransferase I (CPT1) mRNA, complete cds	-0.181	0.435	-0.099	0.116	0.197	0.098	
AA456014	Human carnitine palmitoyltransferase II precursor (CPT1) mRNA, complete cds	-0.324	-1.258	-0.443	-0.213	-0.623	-0.168	
AA418118	Human cartilage-specific homeodomain protein Cart-1 mRNA, complete cds	-0.498	-0.247	0.012	0.143	0.399	0.473	
AA052960	Human Cblf5p homolog (CBF5) mRNA, complete cds	0.086	-0.001	-0.087	-0.056	-0.011	0.570	
AA704729	Human cbl-b mRNA, complete cds	-0.276	-0.096	-0.333	-0.028	0.179	0.621	
AA167728	Human CD27BP (Slva) mRNA, complete cds	0.184	0.480	-0.224	-0.336	1.113	-0.017	
AA410604	Human CDC18Hs mRNA, complete cds	0.844	0.950	0.659	0.723	0.238	0.259	
N35067	Human cdc2-related protein kinase (CHED) mRNA, complete cds	0.114	-0.036	-0.178	-0.571	0.011	0.324	
AA458870	Human CDC37 homolog mRNA, complete cds	0.155	-0.103	0.523	0.853	0.081	-0.361	
N74285	Human Cdc5-related protein (PCDC5RP) mRNA, complete cds	0.064	0.074	0.258	-0.147	0.719	0.174	
H59204	Human Cdc5-related protein (HsCDC5) mRNA, complete cds	0.334	0.377	0.375	0.581	0.649	-0.425	
R77517	Human CDK inhibitor p19INK4d mRNA, complete cds	-0.062	0.314	0.209	-0.126	0.671	-0.033	
N72115	Human CDK6 inhibitor p18 mRNA, complete cds	0.877	1.207	0.585	0.506	0.314	0.126	
R31562	Human CDP-diacylglycerol synthase (CDS) mRNA, complete cds	0.572	0.946	0.406	0.397	0.129	0.658	
AA488332	Human cell cycle protein p38-2G4 homolog (hG4-1) mRNA, complete cds	-0.706	-0.084	-0.215	-0.079	0.280	0.454	
AA676705	Human cell growth regulator CGR19 mRNA, complete cds	-0.245	-0.590	-0.836	-0.847	-0.746	0.326	
N25352	Human cell surface protein HCAR mRNA, complete cds	1.810	0.599	1.577	1.164	1.808	-0.246	
AA436564	Human cellular proto-oncogene (c-met) mRNA, complete cds	-0.024	-0.113	-0.223	-0.089	-0.092	-0.940	
AA701455	Human CENP-F kinetochore protein mRNA, complete cds	0.103	0.313	0.196	-0.030	-0.129	-0.185	
AA872034	Human centrin mRNA, complete cds	0.521	0.330	0.964	1.282	1.445	0.483	
H07880	Human chaperonin protein (Tg20) gene complete cds	-0.331	-0.034	0.173	0.210	0.048	-0.045	
H07880	Human chaperonin protein (Tg20) gene complete cds	0.595	0.663	0.092	-0.112	0.212	0.330	
H64882	Human checkpoint suppressor 1 mRNA, complete cds	-0.309	-0.815	-0.844	-0.595	-0.709	-0.048	
N73958	Human chemokine (TECK) mRNA, complete cds	0.072	-0.258	0.610	-0.097	0.033	0.129	
T94579	Human chitotriosidase precursor mRNA, complete cds	0.122	0.248	-0.005	0.420	0.462	0.378	
AA402879	Human CHL1 potential helicase (CHL1), complete cds	-0.444	0.907	-0.473	-0.403	-0.778	0.476	
H93364	Human chloride channel protein (CLCN7) mRNA, partial cds	-0.472	-0.343	-0.236	-0.803	-0.095	0.541	
AA704459	Human chromatin assembly factor-1 p150 subunit mRNA, complete cds	-0.101	0.240	-0.098	-0.002	0.273	-0.297	
AA428096	Human chromatin assembly factor-1 p60 subunit mRNA, complete cds	0.567	0.323	0.168	0.535	1.130	-0.204	
R56871	Human chromatin assembly factor-1 p60 subunit mRNA, complete cds	-0.658	-0.042	0.154	-0.619	0.096	-0.133	
R56871	Human chromatin assembly factor-1 p60 subunit mRNA, complete cds	0.313	0.234	0.409	-0.027	0.007	0.760	
R21511	Human chromatin structural protein homolog (SUPT5H) mRNA, complete cds	0.224	0.475	0.350	0.284	0.832	0.694	
N47099	Human chromosome 18 Mad homolog JV18-1 mRNA, complete cds	0.322	0.392	0.315	0.240	0.281	0.216	
R83757	Human chromosome 4 Mad homolog Smad1 mRNA, complete cds	0.290	0.518	0.767	1.520	0.193	0.314	
N69204	Human chromosome segregation gene homolog CAS mRNA, complete cds	0.139	0.324	0.423	0.035	0.618	0.094	
W72697	Human cisplatin resistance associated alpha protein (hCRA alpha) mRNA, complete cds	0.140	0.323	0.211	-0.251	0.377	0.111	
AA676877	Human citrate transporter protein mRNA, nuclear gene encoding mitochondrial protein, complete cds	0.678	-0.196	0.776	-0.290	0.358	0.351	
W66155	Human c-jun proto oncogene (JUN), complete cds, clone hCJ-1	0.150	0.110	0.443	-0.027	0.839	0.750	
AA873499	Human class I histocompatibility antigen-like protein mRNA, complete cds	-0.282	-0.459	-0.187	-0.562	-0.287	-0.185	
AA441930	Human clathrin assembly protein lymphoid myeloid leukemia (CALM) mRNA, complete cds	0.305	0.851	0.119	0.180	-0.067	0.361	
N92864	Human cleavage and polyadenylation specificity factor mRNA, complete cds	0.548	1.854	0.093	0.112	1.192	0.597	
AA458502	Human Clik-associated RS cyclophilin CARS-Cyp mRNA, complete cds	0.185	0.184	0.320	-0.589	0.015	0.616	
T53022	Human clone 121711 defective mariner transposon Hsmar2 mRNA sequence	0.468	1.356	-0.049	-0.101	-0.246	0.362	
R66155	Human clone 230971 defective mariner transposon Hsmar2 mRNA sequence	0.493	0.536	0.291	0.198	-0.103	0.494	
AA521389	Human clone 53BP1 p53-binding protein mRNA, partial cds	-0.553	-0.277	-0.345	-0.492	-0.314	0.467	
AA496149	Human clone HSH1 HMG CoA synthase mRNA, partial cds	0.364	0.410	0.028	0.295	0.017	-0.243	
AA459380	Human clone ID 193225 NAD (H)-specific isocitrate dehydrogenase gamma subunit mRNA, alternative	0.922	1.035	1.427	1.328	1.324	-0.168	
AA454570	Human clone lambda 5 semaphorin mRNA, complete cds	0.215	0.108	0.249	-0.002	0.044	0.640	
AA485216	Human clone N9 Rep-8 mRNA, complete cds	-0.035	0.423	-0.630	-0.381	-0.335	0.297	
AA449440	Human clone pSK1 interferon gamma receptor accessory factor-1 (AF-1) mRNA, complete cds	-0.151	0.125	0.074	0.028	-0.285	0.445	
R40324	Human clones 23667 and 23775 zinc finger protein mRNA, complete cds	0.680	0.515	0.019	0.275	0.564	0.842	
R40212	Human coatomer protein (HEPCOP) mRNA, complete cds	0.013	-0.201	-0.267	-0.220	0.042	0.603	
R40212	Human coatomer protein (HEPCOP) mRNA, complete cds	0.591	0.276	-0.263	-0.754	-0.067	0.536	
AA872420	Human COL8A1 mRNA for alpha 1(VIII) collagen	0.548	-0.139	0.632	1.199	0.719	0.319	
AA028905	Human contactin associated protein (Caspr) mRNA, complete cds	0.598	-0.019	0.166	-0.329	-0.383	0.472	
AA489699	Human COP9 homolog (HCOP9) mRNA, complete cds	0.427	0.617	0.111	-0.019	0.526	0.616	
AA485922	Human copine I mRNA, complete cds	0.317	0.885	0.496	0.431	0.012	-0.018	
AA418694	Human copper transport protein HAH1 (HAH1) mRNA, complete cds	0.661	0.990	-0.744	-0.427	0.749	0.163	
W89077	Human CREB-binding protein (CBP) mRNA, complete cds	-0.064	0.069	0.024	0.061	0.021	0.546	
AA404327	Human CSaids binding protein (CSBP1) mRNA, complete cds	0.832	1.039	0.432	0.776	0.736	1.323	
H24301	Human CIBP interacting protein CIBP (CIBP) mRNA, complete cds	0.358	0.538	0.291	0.290	0.678	0.024	
AA478268	Human CIBP mRNA, complete cds	-0.270	0.110	-0.042	0.106	-0.102	0.071	
AA454094	Human CUL-2 (cul-2) mRNA, complete cds	0.445	-0.009	0.162	0.131	0.722	0.219	
R66139	Human CX3C chemokine precursor, mRNA, alternatively spliced, complete cds	0.396	0.625	0.086	0.614	-0.042	0.474	
AA630082	Human cyclin-dependent kinase inhibitor p27kip1 mRNA, complete cds	0.224	0.115	-0.049	-0.158	0.048	-0.093	
AA486208	Human cyclin-dependent protein kinase mRNA, complete cds	0.166	0.258	0.420	0.107	0.045	0.444	
AA430504	Human cyclin-selective ubiquitin carrier protein mRNA, complete cds	0.326	0.681	-0.276	-0.177	0.346	0.805	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA682506	Human cyclophilin-like protein mRNA, partial cds	0.223	0.447	-0.335	-0.219	-0.242	-0.275	
N36862	Human c-yes-1 mRNA	0.126	0.105	-0.110	-0.063	0.199	-0.204	
AA011446	Human cysteine protease CPP32 isoform alpha mRNA, complete cds	-0.009	0.203	-0.153	-0.121	-0.301	0.496	
W45688	Human cysteine protease Mch2 isoform alpha (Mch2) mRNA, complete cds	0.468	0.430	-0.169	0.224	0.055	0.414	
H66617	Human cysteine-rich fibroblast growth factor receptor (CFR-1) mRNA, complete cds	0.482	0.879	0.103	0.212	0.634	0.200	
AA873604	Human cysteine-rich heart protein (hCRHP) mRNA, complete cds	-0.619	-0.248	-0.382	-0.480	-0.208	0.291	
N59790	Human cysteine-rich sequence-specific DNA-binding protein NFX1 mRNA, complete cds	0.297	0.533	-0.262	-0.040	-0.161	0.516	
R12802	Human cytochrome bc-1 complex core protein II mRNA, complete cds	-0.196	0.771	-0.429	-0.509	0.221	0.122	
R12802	Human cytochrome bc-1 complex core protein II mRNA, complete cds	0.080	0.183	0.328	-0.073	0.131	-0.460	
T72804	Human cytochrome c-1 gene, complete cds	0.411	0.594	0.010	0.197	0.285	-0.272	
T72804	Human cytochrome c-1 gene, complete cds	0.207	0.400	0.153	-0.282	0.172	0.276	
AA495974	Human cytokine receptor (EBI3) mRNA, complete cds	0.488	1.004	0.104	-0.155	0.759	0.077	
R44290	Human cytoplasmic beta-actin gene, complete cds	0.057	0.261	-0.038	0.122	0.939	-0.371	
R44290	Human cytoplasmic beta-actin gene, complete cds	-0.086	0.335	-0.304	-0.023	0.865	-0.133	
R60933	Human cytoplasmic chaperonin hTRIC5 mRNA, partial cds	-0.616	-0.463	-0.414	-0.828	-0.402	0.182	
R60933	Human cytoplasmic chaperonin hTRIC5 mRNA, partial cds	0.589	-0.283	-0.437	-0.449	-0.310	0.159	
AA644679	Human cytoplasmic dynein light chain 1 (hdc1) mRNA, complete cds	0.296	0.698	-0.103	0.126	0.199	0.442	
AA504477	Human cytoskeleton associated protein (CG22) mRNA, complete cds	0.109	0.077	0.373	0.235	0.359	0.429	
AA453750	Human D5 splice variant A mRNA, complete cds	0.565	0.284	-0.127	0.070	0.405	0.219	
AA129397	Human DAZ mRNA, 3'UTR	0.864	0.756	0.935	0.147	1.172	0.257	
AA774538	Human DAZL mRNA, complete cds	0.033	0.127	-0.369	0.066	0.059	-0.016	
AA485944	Human DEAD-box protein p72 (P72) mRNA, complete cds	0.492	0.272	-0.142	-0.107	0.244	0.167	
R37937	Human death domain containing protein CRADD mRNA, complete cds	0.639	0.398	-0.009	-0.013	0.258	-0.278	
W71984	Human death receptor 3 (DR3) mRNA, complete cds	0.338	0.533	-0.284	-0.191	0.226	-0.159	
H85464	Human deleted in split hand/split foot 1 (DSS1) mRNA, complete cds	0.355	0.838	-0.103	0.015	0.612	-0.026	
AA281945	Human DENN mRNA, complete cds	-0.055	0.256	0.043	0.020	0.696	0.177	
AA045326	Human density enhanced phosphatase-1 mRNA, complete cds	0.088	0.495	-0.238	0.330	-0.152	0.096	
AA113238	Human dermatan sulfate proteoglycan 3 (DSPG3) mRNA, complete cds	-0.306	0.954	-0.170	-0.081	-0.267	-0.077	
AA262205	Human diacylglycerol kinase zeta mRNA, complete cds	1.013	0.781	0.333	0.687	0.457	0.334	
R60317	Human dihydrolipoamide dehydrogenase mRNA, complete cds	-1.647	-0.466	0.128	-1.475	-0.312	-0.008	
R60317	Human dihydrolipoamide dehydrogenase mRNA, complete cds	0.166	0.685	0.020	-0.210	0.022	0.458	
AA143437	Human DNA for rhoHP1, complete cds	0.345	0.457	-0.134	0.127	0.119	0.564	
AA487452	Human DNA fragmentation factor-45 mRNA, complete cds	-0.015	-0.090	-0.138	-0.279	0.061	0.195	
AA426377	Human DNA polymerase delta small subunit mRNA, complete cds	-0.554	0.047	-0.662	-0.304	-0.212	0.420	
AA402486	Human DNA repair endonuclease subunit (XPF) mRNA, complete cds	0.492	0.367	0.137	0.050	0.575	-0.463	
H20856	Human DNA repair helicase (ERCC3) mRNA, complete cds	-0.059	0.205	0.221	0.674	-0.104	-0.081	
H20856	Human DNA repair helicase (ERCC3) mRNA, complete cds	0.723	0.871	0.035	-0.159	0.036	-0.087	
AA430675	Human DNA repair protein XRCC9 (XRCC9) mRNA, complete cds	-0.119	0.201	0.059	0.268	0.248	0.064	
AA703660	Human DNA sequence from intron 22 of the factor VIII gene, Xq28. Contains the end of a 9.5kb repeat	0.165	0.392	0.374	-0.162	0.316	0.287	
N21546	Human DNA topoisomerase III mRNA, complete cds	-0.348	-0.044	-0.401	-0.203	-0.156	-0.127	
W88571	Human DNA-binding protein ABP/ZF mRNA, complete cds	-0.860	0.015	-1.141	-0.445	-0.854	0.184	
AA055585	Human DNA-binding protein CPBP (CPBP) mRNA, partial cds	0.187	0.657	0.268	0.594	0.462	0.026	
R27615	Human DNA-dependent protein kinase catalytic subunit (DNA-PKcs) mRNA, complete cds	0.018	0.398	0.135	0.410	0.208	0.525	
T73558	Human DNase1-Like III protein (DNAS1L3) mRNA, complete cds	0.102	0.240	0.391	0.629	0.280	0.390	
W02657	Human DOK180 protein mRNA, complete cds	1.691	1.557	1.067	0.516	2.007	0.059	
AA465369	Human DP2 (Hump2) mRNA, complete cds	-0.307	0.037	-0.112	-0.123	0.047	-0.250	
AA406285	Human Dr1-associated corepressor (DRAP1) mRNA, complete cds	0.297	-0.164	0.049	-0.169	0.327	-0.140	
AA392818	Human DR-nm23 mRNA, complete cds	-0.022	-0.025	0.191	0.389	0.617	0.267	
AA489331	Human dsRNA adenosine deaminase DRADA2b (DRADA2b) mRNA, complete cds	0.065	0.043	0.175	-0.114	0.233	0.077	
AA448194	Human duplicate spinal muscular atrophy mRNA, clone 5G7, partial cds	0.607	0.283	0.077	0.415	0.693	0.010	
AA291959	Human dynamilin mRNA, complete cds	-0.468	0.702	-0.406	-0.928	-0.519	0.610	
H09172	Human dystrobrevin-zeta mRNA, complete cds	0.435	0.499	0.364	0.318	0.803	0.278	
AA496691	Human dystroglycan (DAG1) mRNA, complete cds	0.625	0.549	0.068	0.160	0.616	0.416	
AA431869	Human E2 ubiquitin conjugating enzyme UbCH5B (UBCH5B) mRNA, complete cds	-0.009	0.040	-0.145	-0.054	0.166	0.286	
AA017200	Human E2 ubiquitin conjugating enzyme UbCH5C (UBCH5C) mRNA, complete cds	0.334	0.149	0.275	-0.188	0.162	0.382	
R51346	Human eIF-2-associated p67 homolog mRNA, complete cds	0.505	-0.003	0.131	-0.193	-0.132	0.546	
R51346	Human eIF-2-associated p67 homolog mRNA, complete cds	0.395	0.084	-0.062	0.250	-0.232	-1.263	
AA459308	Human elastin gene, partial cds and partial 3'UTR	0.414	0.542	-0.086	0.120	0.446	-0.443	
AA629686	Human embryonic ectoderm development protein homolog (eed) mRNA, partial cds	-0.039	-0.026	-0.196	-0.266	-0.780	-0.254	
AA701655	Human endogenous retrovirus envelope region mRNA (PL1)	0.379	0.484	0.423	0.922	0.367	0.107	
W56771	Human endometrial bleeding associated factor mRNA, complete cds	-0.574	-0.147	1.391	-0.342	0.856	-0.111	
N66043	Human endosome-associated protein (EEA1) mRNA, complete cds	0.155	0.784	-0.083	-0.326	-0.117	0.043	
AA880300	Human endothelial PAS domain protein 1 (EPAS1) mRNA, complete cds	0.034	0.119	0.342	0.419	0.477	-0.087	
AA504333	Human endothelial-monocyte activating polypeptide II mRNA, complete cds	0.088	0.074	-0.283	-0.537	-0.232	-0.084	
AA127096	Human enigma gene, complete cds	-0.239	0.064	-0.180	-0.324	-0.199	0.242	
H13523	Human epidermal growth factor receptor kinase substrate (Eps8) mRNA, complete cds	0.289	0.879	0.215	0.177	0.219	0.163	
R71691	Human Epstein-Barr virus-induced protein mRNA, complete cds	0.412	0.362	-0.064	0.164	0.046	0.480	
AA481554	Human ERPROT 213-21 mRNA, complete cds	0.234	0.275	-0.074	-0.006	0.018	0.630	
H65734	Human erythroid-specific transcription factor EKLF mRNA, complete cds	-0.763	-0.612	-0.134	0.196	-0.493	0.975	
AA449459	Human estrogen sulfotransferase (STE) mRNA, complete cds	0.119	0.528	-0.051	-0.162	0.739	0.313	
AA398458	Human estrogen sulfotransferase mRNA, complete cds	0.086	0.490	0.155	0.261	0.286	0.003	
W86216	Human ets domain protein ERF mRNA, complete cds	0.152	0.283	0.057	0.313	0.247	0.008	
AA447783	Human Ets transcription factor (NERF-2) mRNA, complete cds	0.487	0.515	-0.119	-0.066	0.134	-0.245	
R42479	Human ETS2 oncogene	0.206	0.343	-0.052	0.312	0.340	0.014	
R42479	Human ETS2 oncogene	0.641	0.896	0.425	0.280	0.634	0.211	
R54818	Human eukaryotic initiation factor 2B-epsilon mRNA, partial cds	1.920	0.950	1.429	0.850	1.450	-0.400	
R54818	Human eukaryotic initiation factor 2B-epsilon mRNA, partial cds	0.350	0.456	0.065	0.406	-0.096	0.106	
AA676471	Human eukaryotic translation initiation factor (eIF3) mRNA, complete cds	0.103	0.156	0.284	0.418	0.237	0.444	
N79484	Human extracellular matrix protein 1 (ECM1) mRNA, complete cds	-0.280	-0.072	0.391	0.696	0.189	0.824	
AA875933	Human extracellular protein (S1-5) mRNA, complete cds	0.322	-0.067	0.350	0.395	0.094	0.460	
AA262504	Human EYA3 homologue (EYA3) mRNA, complete cds	0.304	0.467	0.378	0.099	0.710	0.519	
H91456	Human farnesol receptor HRR-1 (HRR-1) mRNA, complete cds	-0.261	-0.163	0.462	1.113	-0.055	0.652	
AA431988	Human fatty acid amide hydrolase mRNA, complete cds	1.165	0.436	0.355	0.601	0.108	-0.211	
H79353	Human Fc-epsilon-receptor gamma-chain mRNA, complete cds	-0.263	-0.249	-0.077	-0.653	-0.136	-0.072	
AA866113	Human FE65-like protein (hFE65L) mRNA, partial cds	-0.325	-0.197	-0.120	-0.465	0.229	-0.203	
AA704421	Human fetal Alz-50-reactive clone 1 (FAC1) mRNA, complete cds	-0.137	0.321	-0.048	0.278	0.508	0.010	
AA020012	Human fetal brain (239FB) mRNA, from the WAGR region, complete cds	0.168	0.286	0.551	0.787	0.302	0.138	
AA447632	Human fetus brain mRNA for membrane glycoprotein M6, complete cds	-0.100	0.198	0.068	-0.051	0.503	0.219	
AA664077	Human fetus brain mRNA for vacuolar ATPase, complete cds	0.597	0.563	0.402	0.722	0.826	0.184	
N34095	Human FE22 mRNA, partial cds	-0.022	0.051	0.606	0.489	0.371	0.339	
AA405569	Human fibroblast activation protein mRNA, complete cds	0.680	1.216	0.278	0.518	1.206	0.472	
H19129	Human fibroblast growth factor homologous factor 1 (FHF-1) mRNA, complete cds	0.096	0.429	0.304	0.370	0.321	0.617	
N95418	Human FK-506 binding protein homologue (FKBP38) mRNA, complete cds	0.644	0.433	-0.153	-0.031	0.383	0.428	
AA630298	Human focal adhesion kinase (FAK) mRNA, complete cds	0.213	0.395	0.173	0.929	0.269	0.578	
AA701860	Human follistatin gene	-0.073	0.086	0.481	0.006	1.337	-0.238	
AA679177	Human follistatin-related protein precursor mRNA, complete cds	0.402	0.663	-0.131	0.294	0.237	-0.005	
N98485	Human forkhead protein FREAC-2 mRNA, partial cds	0.337	0.152	0.603	-0.057	0.193	-0.061	
AA454509	Human forkhead transcription factor HFH-4 (HFH-4) mRNA, complete cds	0.656	0.755	0.187	0.237	0.333	0.458	
N62761	Human fragile X mental retardation protein 1 homologue FXR1 mRNA, complete cds	0.318	0.574	0.894	1.470	0.289	0.527	
AA489628	Human fragile X mental retardation syndrome related protein (FXR2) mRNA, complete cds	0.436	0.548	0.772	2.209	0.052	0.250	
W58032	Human frezzled (fre) mRNA, complete cds	0.621	0.594	0.999	2.017	0.096	0.287	
N28860	Human FUSE binding protein 2 (FBP2) mRNA, partial cds	-0.025	0.149	0.020	-0.076	-0.271	0.462	
N81076	Human FUSE binding protein 3 (FBP3) mRNA, partial cds	0.814	0.636	0.178	0.153	0.497	0.232	
N75581	Human FUSE binding protein mRNA, complete cds	-0.053	0.196	-0.235	-0.258	-0.058	0.590	
AA421688	Human FX protein mRNA, complete cds	0.178	0.431	0.159	-0.004	0.657	0.594	
AA810225	Human G protein coupled receptor (GPCR-Br) mRNA, complete cds	-0.438	-0.209	-0.088	-0.302	-0.166	0.447	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA460286	Human G protein gamma-10 subunit mRNA, complete cds	-0.125	-0.404	-0.661	-0.767	-0.174	0.138	
N57964	Human G protein-coupled receptor (STRL22) mRNA, complete cds	0.287	-0.156	-0.139	-0.265	-0.123	0.312	
H07878	Human G protein-coupled receptor GPR-NGA gene, complete cds	0.816	0.608	-0.088	0.092	0.443	-0.028	
R91916	Human G protein-coupled receptor STRL33.1 (STRL33) mRNA, complete cds	0.722	0.840	0.023	0.235	0.540	-0.103	
AA496947	Human G/T mismatch-specific thymine DNA glycosylase mRNA, complete cds	0.860	1.601	0.799	0.310	0.597	-0.030	
T61948	Human GOS3 mRNA, complete cds	-0.809	-0.604	-0.587	-1.016	-0.624	0.331	
H50677	Human g16 protein (g16) mRNA, partial cds	0.349	0.641	0.985	1.454	0.079	0.289	
H63532	Human GABA-A receptor epsilon subunit mRNA, complete cds	0.558	0.963	0.129	0.204	0.227	0.107	
AA101225	Human GABA-A receptor pi subunit mRNA, complete cds	0.770	0.747	0.108	0.254	0.759	-0.405	
AA868515	Human Gal beta-1,3 GalNAc alpha-2,3 sialyltransferase (ST3Gal II) mRNA, complete cds	0.220	0.229	0.476	1.291	-0.100	0.016	
AA130579	Human galectin-4 (GAL4) mRNA, complete cds	0.820	0.128	0.572	0.186	1.687	0.288	
AA457288	Human gammaC-crystallin (CRYGC) mRNA, complete cds	0.000	-0.293	0.859	0.182	0.176	-0.109	
H72018	Human gamma-glutamyl transpeptidase (GGT) protein mRNA, complete cds	-0.588	-0.360	0.000	0.084	0.153	-0.057	
AA129537	Human GAP SH3 binding protein mRNA, complete cds	-0.323	-0.165	-0.203	-0.296	-0.740	0.181	
AA487426	Human GDP-dissociation inhibitor protein (Ly-GDI) mRNA, complete cds	0.273	0.243	0.340	0.587	0.342	0.158	
AA418077	Human Gem GTPase (gem) mRNA, complete cds	-0.071	0.585	0.452	0.093	0.389	0.253	
AA400329	Human gene for neurofilament subunit M (NF-M)	-0.108	-0.185	0.076	-0.496	0.001	0.427	
AA465378	Human germline IgD chain gene, C-region, C-delta-1 domain	0.953	0.104	0.465	0.484	0.374	0.649	
N94385	Human germline oligomeric matrix protein (COMP) mRNA, complete cds	-0.052	0.035	0.170	0.019	0.439	-0.535	
AA251930	Human glioma pathogenesis-related protein (GILPR) mRNA, complete cds	0.723	0.603	-0.007	0.303	0.605	-0.413	
AA284492	Human globin gene	1.438	0.216	0.473	0.648	1.937	-0.344	
H03954	Human glucose transporter pseudogene	-0.114	0.021	0.386	-0.343	-0.012	0.183	
R44776	Human glutamate receptor (GLUR5) mRNA, complete cds	-0.280	0.045	-1.144	-0.862	-1.169	0.066	
H06193	Human glutamate receptor 2 (HBGR2) mRNA, complete cds	0.358	0.568	0.087	0.132	0.194	0.313	
H06193	Human glutamate receptor 2 (HBGR2) mRNA, complete cds	0.483	0.805	-0.103	-0.129	0.614	0.507	
AA428334	Human glutathione transferase Zeta 1 (GSTZ1) mRNA, complete cds	0.288	0.792	0.369	0.256	0.002	0.130	
AA441895	Human glutathione-S-transferase homolog mRNA, complete cds	0.165	-0.258	-0.126	-0.252	-0.104	0.145	
H16958	Human glyceraldehyde 3-phosphate dehydrogenase mRNA	0.039	0.587	0.143	0.597	1.559	0.218	
H16958	Human glyceraldehyde 3-phosphate dehydrogenase mRNA	0.013	0.966	-0.051	0.535	1.540	0.356	
R76808	Human glycoprotein receptor gp330 precursor, mRNA, complete cds	0.349	0.458	0.384	0.578	0.171	0.449	
AA878391	Human glypican-5 (GPC5) mRNA, complete cds	0.064	0.380	0.320	0.472	0.137	0.552	
AA460986	Human GPI-H mRNA, complete cds	0.243	0.128	0.203	0.456	0.497	0.149	
AA521025	Human Gps1 (GPS1) mRNA, complete cds	-0.213	0.225	0.217	0.031	0.172	1.399	
N68193	Human Grb2-associated binder-1 mRNA, complete cds	-0.473	0.096	0.250	0.200	0.186	0.738	
AA418008	Human growth factor independence-1 (Gfi-1) mRNA, complete cds	0.061	0.448	0.046	0.665	-0.116	0.321	
AA449678	Human GS2 mRNA, complete cds	-0.095	0.143	0.271	0.194	0.397	0.391	
N65981	Human GT334 protein (GT334) gene mRNA, complete cds	0.592	0.996	-0.010	0.142	0.502	0.310	
AA644191	Human GTP binding protein (ARL3) mRNA, complete cds	0.505	0.198	0.922	0.681	2.154	0.330	
AA074446	Human GTP cyclohydrolase 1 feedback regulatory protein gene, complete cds	-0.197	0.001	-0.085	0.091	0.079	-0.118	
R43509	Human Gu binding protein mRNA, partial cds	-0.200	-0.008	-0.286	-0.404	-0.247	1.108	
AA465386	Human Gu protein mRNA, partial cds	-0.016	0.589	-0.132	0.280	0.139	0.532	
H64325	Human guanine nucleotide exchange factor mRNA, complete cds	0.637	1.249	0.416	0.627	0.138	0.223	
R78735	Human guanine nucleotide exchange factor mRNA, complete cds	0.651	0.672	0.751	0.795	0.141	0.158	
AA012882	Human guanine nucleotide exchange factor mss4 mRNA, complete cds	1.033	0.234	2.079	0.785	1.257	0.111	
AA481277	Human guanine nucleotide exchange factor p115-RhoGEF mRNA, partial cds	0.143	0.242	0.314	0.326	0.239	0.761	
AA464578	Human guanine nucleotide regulatory factor (LFP40) mRNA, complete cds	0.018	-0.069	-0.647	-1.109	-0.559	0.274	
AA045822	Human guanine nucleotide regulatory protein (tim1) mRNA, complete cds	0.274	-0.029	0.128	0.228	0.320	-0.065	
R43581	Human guanine nucleotide-binding protein G-s, alpha subunit mRNA, partial cds	-0.226	-0.431	-0.139	-0.871	-0.371	-0.095	
R43581	Human guanine nucleotide-binding protein G-s, alpha subunit mRNA, partial cds	0.445	0.114	-0.144	-1.163	-0.018	0.398	
R43320	Human guanine nucleotide-binding regulatory protein (Go-alpha) gene	0.051	0.028	-0.161	0.054	-0.245	0.147	
N59764	Human guanosine 5'-monophosphate synthase mRNA, complete cds	-0.252	0.164	-0.016	-0.073	-0.341	-1.317	
AA490902	Human guanylate kinase (GUK1) mRNA, complete cds	-0.128	0.234	0.064	0.431	0.321	-0.116	
AA454926	Human HBV-X associated (XAP2) mRNA, complete cds	0.001	-0.041	0.007	-0.354	-0.149	-0.086	
R41787	Human H-cadherin mRNA, complete cds	-0.104	0.153	0.361	0.384	0.096	0.469	
R69885	Human HCF1 gene related mRNA sequence	-1.505	-0.453	0.008	-0.866	-0.001	-0.053	
T69012	Human heat shock protein HSPA2 gene, complete cds	0.191	0.238	0.166	0.306	0.377	0.310	
AA479795	Human HEM45 mRNA, complete cds	0.450	0.957	0.097	0.105	0.276	0.103	
T50313	Human hematopoietic progenitor kinase (HPK1) mRNA, complete cds	0.267	0.362	0.323	-0.134	0.257	0.116	
AA428321	Human heparan N-deacetylase/N-sulfotransferase-2 mRNA, complete cds	0.625	-0.095	-0.006	0.433	0.112	0.101	
AA427561	Human heparan sulfate proteoglycan (HSPG2) mRNA, complete cds	-0.058	-0.023	0.531	0.362	0.550	0.424	
AA936757	Human heparin binding protein (HBp17) mRNA, complete cds	0.089	0.949	-0.056	0.159	0.046	-0.202	
N94820	Human hepatitis delta antigen interacting protein A (dipA) mRNA, complete cds	0.359	0.369	1.142	1.078	1.067	-0.817	
H47076	Human hepatocyte growth factor-like protein homolog (D1F15S1A) gene, complete cds	0.717	0.622	0.059	0.510	0.643	0.318	
R72075	Human heregulin-beta1 gene, complete cds	1.854	0.713	1.581	1.480	1.827	0.106	
AA455303	Human hERV1 mRNA, complete cds	0.020	0.103	-0.097	0.096	-0.681	0.461	
AA132226	Human heterochromatin protein HP1Hs-gamma mRNA, complete cds	0.046	0.378	-0.046	0.003	-0.306	0.183	
AA599176	Human heterogeneous ribonucleoprotein A0 mRNA, complete cds	0.168	0.278	0.159	-0.203	0.438	0.556	
AA544124	Human HIG-1 mRNA, complete cds	-0.156	0.363	-0.265	0.386	0.553	0.195	
AA457697	Human high density lipoprotein binding protein (HBP) mRNA, complete cds	0.167	0.151	0.441	0.095	0.487	0.824	
AA191488	Human high-affinity copper uptake protein (hCTR1) mRNA, complete cds	-0.303	-0.342	0.167	-0.364	-0.247	1.018	
H98218	Human high-mobility group phosphoprotein isoform I-C (HMGIC) mRNA, complete cds	0.529	1.140	0.048	0.105	0.420	0.244	
AA452933	Human histone 2A-like protein (H2A7) mRNA, complete cds	0.103	0.118	0.345	-0.150	0.578	0.057	
AA426352	Human histone H2A.1 (H2A) gene, complete cds	0.505	0.483	0.068	0.016	0.591	-0.805	
H06295	Human histone H2B.1 mRNA, 3' end	0.361	0.437	0.441	0.269	0.343	0.152	
AA456298	Human histone H2B.1 mRNA, 3' end	0.257	0.471	0.330	0.232	0.550	0.045	
H06295	Human histone H2B.1 mRNA, 3' end	0.286	0.509	0.091	-0.118	0.125	0.341	
AA529558	Human histone stem-loop binding protein (SLBP) mRNA, complete cds	0.038	0.134	0.350	0.069	-0.009	1.147	
AA425020	Human hkl-1 mRNA, complete cds	0.161	0.489	0.021	0.470	0.202	-0.325	
AA10896	Human HLA class III region containing NOTCH4 gene, partial sequence, homeobox PBX2 (HPBX) gen	0.853	0.731	0.790	0.554	1.051	-0.221	
AA402860	Human HLA class III region containing NOTCH4 gene, partial sequence, homeobox PBX2 (HPBX) gen	0.018	0.119	0.120	-0.012	0.095	0.629	
AA454656	Human Hlark mRNA, complete cds	-1.164	-0.756	-0.295	-0.286	-0.281	0.666	
R37286	Human hnRNP core protein A1	0.091	0.378	0.087	-0.395	-0.280	0.841	
R37286	Human hnRNP core protein A1	0.773	0.666	0.198	0.039	0.507	0.036	
W96058	Human hnRNP H mRNA, complete cds	-0.207	-0.121	0.107	0.129	0.030	-0.842	
W72693	Human hnRNP type A/B protein mRNA, complete cds	-0.225	-0.010	0.689	0.208	0.312	-0.432	
AA521026	Human hOGG1 mRNA, complete cds	0.182	0.224	0.285	0.213	0.638	0.195	
AA857101	Human homeo box c1 protein, mRNA, complete cds	-0.620	-0.280	-0.043	0.329	0.399	0.318	
AA447692	Human homeobox gene (clone HHO.c13)	0.440	1.005	0.041	0.795	0.324	-0.204	
AA293453	Human homeobox protein (PHOX1) mRNA, 3' end	0.450	0.306	0.594	0.101	0.669	-0.020	
T96688	Human homeobox-containing protein mRNA, complete cds	0.200	-0.018	-0.052	0.221	-0.259	0.297	
H24708	Human homolog of Drosophila discs large protein, isoform 2 (hdlg-2) mRNA, complete cds	-0.571	-0.302	-0.145	-0.225	-0.761	0.577	
AA485742	Human homolog of Drosophila enhancer of split m9/m10 mRNA, complete cds	0.338	0.221	0.394	0.515	0.397	0.799	
AA702973	Human homolog of Drosophila splicing regulator suppressor-of-white-apricot mRNA, complete cds	-0.380	-0.034	-0.094	-0.085	0.210	1.066	
H08820	Human homolog of yeast IPP isomerase	-0.224	-0.117	0.227	0.206	-0.319	0.555	
AA504838	Human homolog of yeast mutL (hPMS1) gene, complete cds	-0.386	-0.341	-0.249	-0.287	-0.177	0.530	
AA480859	Human homologue of yeast sec7 mRNA, complete cds	0.339	0.169	0.619	0.324	0.895	0.343	
AA456439	Human homozygous deletion target in pancreatic carcinoma (DPC4) mRNA, complete cds	0.082	0.162	0.186	0.072	0.074	0.406	
AA424871	Human HOXA4 mRNA for a homeobox protein	-0.124	0.475	0.591	0.347	0.274	0.714	
AA173290	Human HOXA1 mRNA, long transcript and alternatively spliced forms, complete cds	0.620	-0.016	0.169	0.134	0.002	1.011	
AA626028	Human HpaST (HPAST) mRNA, complete cds	-0.141	0.773	0.077	-0.227	0.200	0.753	
N56979	Human hPrp18 mRNA, complete cds	0.107	0.844	0.440	0.505	0.125	1.280	
AA459883	Human HRY gene, complete cds	1.372	0.764	1.825	1.302	0.328	0.792	
R76263	Human Hs1 binding protein HAX-1 mRNA, nuclear gene encoding mitochondrial protein, complete cds	-0.076	0.178	-0.011	0.149	0.047	0.807	
AA486790	Human Hs-cul-1 mRNA, complete cds	-0.256	-0.045	0.207	-0.642	-0.600	0.817	
N25141	Human Hs-cul-3 mRNA, partial cds	0.427	1.341	-0.221	0.336	0.137	0.519	
AA598836	Human Hs-cul-4A mRNA, partial cds	-0.038	0.156	-0.042	-0.215	-0.186	1.021	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
T72030	Human hSIAH1 mRNA, complete cds	-0.263	-0.174	-0.424	-0.859	-0.303	0.584	
AA029042	Human hSIAH2 mRNA, complete cds	0.099	0.253	-0.163	-0.519	-0.187	0.538	
T48741	Human Hsp27 ERE-TATA-binding protein (HET) mRNA, complete cds	2.037	0.824	0.969	1.976	1.759	1.014	
R16849	Human HsPex13p mRNA, complete cds	-0.059	0.300	0.287	0.458	0.414	0.289	
AA186427	Human hTRIP (hTRIP) mRNA, complete cds	-0.011	-0.084	0.617	0.237	0.076	0.371	
H15747	Human HU-K4 mRNA, complete cds	-0.069	0.239	0.620	0.364	0.032	1.418	
H78385	Human huntingtin interacting protein (HIP2) mRNA, complete cds	-0.676	-0.593	-0.592	-0.812	-0.417	0.427	
W72322	Human HuR RNA binding protein (HuR) mRNA, complete cds	0.650	0.531	0.599	0.459	0.632	-0.097	
AA143569	Human hVps41p (HVPS41) mRNA, complete cds	0.431	-0.003	0.150	0.349	0.423	0.053	
AA487543	Human hybrid receptor gp250 precursor mRNA, complete cds	1.450	1.464	-0.050	0.406	0.977	0.129	
AA404264	Human hypothetical protein A4 mRNA, complete cds	-0.431	-0.491	-0.844	-0.821	-0.302	-0.240	
AA702174	Human IAP homolog B (MIHB) mRNA, complete cds	-0.103	0.123	-0.272	-0.008	-0.323	0.015	
AA002126	Human IAP homolog C (MIHC) mRNA, complete cds	0.000	0.309	-0.175	0.040	-0.128	-0.165	
AA663981	Human Ig germline H-chain G-E-A region B: gamma-2 constant region, 3' end	-0.032	0.279	0.299	0.002	-0.001	0.106	
AA430668	Human IgG Fc receptor hFcRn mRNA, complete cds	-0.090	0.085	0.313	-0.002	-0.165	0.296	
AA442780	Human immunodeficiency virus type 1 enhancer-binding protein 1	0.987	0.652	-0.152	-0.214	0.626	-0.006	
AA683219	HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 ENHANCER-BINDING PROTEIN 2	-0.328	-0.018	0.756	-0.436	0.238	-0.697	
N63398	Human immunoglobulin-like transcript 1a mRNA, complete cds	-0.059	-0.193	-0.486	-0.056	-0.742	-0.229	
AA486221	Human inducible poly(A)-binding protein mRNA, complete cds	0.429	0.557	0.679	0.245	0.443	-0.277	
H09111	Human infant brain mRNA, clone 13cDNA73	0.387	0.364	-0.038	0.206	0.606	-0.007	
AA446018	Human Ini1 mRNA, complete cds	0.175	0.138	0.074	-0.197	0.195	0.505	
AA463931	Human inositol 1,3,4-trisphosphate 5/6-kinase mRNA, complete cds	-0.140	0.185	0.259	0.334	0.175	0.220	
H08561	Human insulin-like growth factor binding protein 5 (IGFBP5) mRNA	-0.056	0.107	0.402	0.614	0.075	0.010	
H55921	Human insulin-stimulated protein kinase 1 (ISPK-1) mRNA, complete cds	0.240	0.161	0.242	0.491	0.157	0.030	
AA669674	Human Int-6 mRNA, complete cds	-0.216	-0.239	0.396	-0.052	0.083	0.229	
AA443090	Human interferon regulatory factor 7 (humirf7) mRNA, complete cds	0.245	0.323	0.509	0.156	0.978	-0.198	
AA490996	Human interferon-gamma induced protein (IFI 16) gene, complete cds	-0.676	-0.399	-0.417	-0.632	-0.508	-0.593	
AA827287	Human interferon-induced leucine zipper protein (IFP35) mRNA, partial cds	0.032	0.660	0.328	0.588	0.666	-0.414	
AA454657	Human interleukin-11 receptor alpha chain mRNA, complete cds	-0.049	-0.257	0.053	0.507	-0.167	0.279	
H78244	Human intestinal and liver tetraspan membrane protein (IL-TMP) mRNA, complete cds	1.026	0.183	0.136	0.709	0.281	-0.167	
T94781	Human inward rectifier potassium channel (Kir1.3), complete cds	-0.348	-0.462	-0.935	-0.328	-0.565	0.232	
R43325	Human ionizing radiation resistance conferring protein mRNA, complete	-0.248	0.221	-0.072	0.182	-0.109	0.759	
R43325	Human ionizing radiation resistance conferring protein mRNA, complete	-0.164	0.550	-0.774	-0.254	-0.546	0.036	
AA044267	Human ionotropic ATP receptor P2X5a mRNA, complete cds	0.096	0.299	0.026	-0.073	0.110	0.453	
AA133187	Human iron-regulatory protein 2 (IRP2) mRNA, partial cds	1.209	0.428	0.243	0.294	0.227	0.308	
R46202	Human iron-class homeodomain protein IRX-2a mRNA, complete cds	0.285	0.200	0.255	0.285	0.208	1.054	
AA190583	Human isopeptidase T-3 (ISOT-3) mRNA, complete cds	0.200	0.506	0.240	-0.070	-0.033	-0.333	
AA419143	Human JTV-1 (JTV-1) mRNA, complete cds	0.194	0.358	0.612	0.266	0.282	-0.280	
H14383	Human K+ channel beta 2 subunit mRNA, complete cds	-0.172	0.183	-0.179	-0.364	0.048	-0.006	
AA528241	Human K-CI cotransporter (HKCC1) mRNA, complete cds	0.555	0.223	0.083	0.336	0.168	-0.189	
AA486324	Human Ki nuclear autoantigen mRNA, complete cds	0.642	0.450	-0.130	0.717	0.278	0.407	
AA146655	Human kidney mRNA for putative membrane protein with histidine rich charge clusters, complete cds	0.288	-0.010	-0.086	0.200	0.385	0.358	
AA476066	Human kinase Myt1 (Myt1) mRNA, complete cds	0.251	0.316	0.302	0.187	0.336	-0.102	
H88143	Human kinase suppressor of ras-1 (KSR1) mRNA, partial cds	0.197	0.268	0.220	-0.087	0.094	0.468	
AA504625	Human kinesin-like spindle protein HKSP (HKSP) mRNA, complete cds	-0.434	-0.333	-0.529	-0.650	-0.197	0.204	
N5249	Human K-ras oncogene protein mRNA, complete cds	-0.342	-0.193	0.322	0.308	0.027	0.284	
N54596	Human Krueppel-related zinc finger protein (H-pik) mRNA, complete cds	-0.028	-0.414	-0.118	-0.166	-0.078	-0.236	
T88890	Human Krueppel-type zinc finger protein (ZNF169) gene, partial cds	1.185	1.013	0.263	0.793	0.225	0.189	
AA456657	Human kruppel-related zinc finger protein (ZNF184) mRNA, partial cds	-0.010	0.365	0.152	-0.072	0.275	0.053	
AA505045	Human L2-9 transcript of unrearranged immunoglobulin V(H)5 pseudogene	-0.244	-0.112	-0.299	-0.373	-0.306	0.347	
T97710	Human laminin (LAD) mRNA, complete cds	-0.107	0.192	0.383	-0.191	0.105	0.522	
H98694	Human lambda/delta-protein kinase C-interacting protein mRNA, complete cds	-0.272	-0.244	0.199	0.014	0.019	0.155	
AA9751	Human LAR-interacting protein 1b mRNA, complete cds	0.047	0.262	0.070	0.460	-0.271	0.110	
W93370	Human lectin-like type II integral membrane protein (NKG2-E) mRNA, complete cds	-0.098	-0.006	0.271	-0.024	0.391	0.026	
W45972	Human leukemia virus receptor 1 (GLVR1) mRNA, complete cds	0.087	-0.089	0.311	0.309	0.221	-0.016	
T55870	Human leukemia virus receptor 2 (GLVR2) mRNA, complete cds	0.119	0.217	0.266	-0.101	0.214	-0.083	
W92011	Human LGN protein mRNA, complete cds	0.729	0.184	0.343	0.105	0.817	-0.372	
AA047443	Human LIM protein (LPP) mRNA, partial cds	0.089	0.163	0.104	-0.360	-0.074	0.483	
AA195959	Human LIM protein MLP mRNA, complete cds	1.100	0.744	0.112	0.503	0.250	-0.121	
AA098980	Human lipid-activated, protein kinase PRK2 mRNA, complete cds	0.193	-0.095	0.260	0.314	-0.154	0.457	
AA017175	Human liver glutamate dehydrogenase mRNA, complete cds	0.366	-0.178	0.233	0.219	-0.321	0.549	
R54424	Human liver glutamate dehydrogenase mRNA, complete cds	0.016	0.433	-0.279	0.998	0.637	0.236	
R54424	Human liver glutamate dehydrogenase mRNA, complete cds	0.050	0.136	0.350	-0.020	0.176	0.106	
H87471	Human L-tyrosine hydrolase mRNA, complete cds	0.007	0.207	0.293	0.058	0.014	0.081	
R62813	Human L-myc protein gene, complete cds	-0.205	0.343	-0.601	0.207	-0.412	0.185	
AA463204	Human LOT1 mRNA, complete cds	2.010	0.489	0.560	0.391	-0.488	-0.378	
T96082	Human low-Mr GTP-binding protein (RAB31) mRNA, complete cds	-0.112	-0.360	-0.449	-0.653	-0.355	0.590	
AA057378	Human low-Mr GTP-binding protein (RAB32) mRNA, partial cds	0.401	0.156	0.427	0.297	0.449	0.720	
R56562	Human lunatic fringe mRNA, partial cds	0.071	-0.129	0.297	0.083	-0.273	0.667	
AA867984	Human lung phospholipase A-2 (PLA-2) mRNA, complete cds, clone lung-1(hcDNA)	-0.320	-0.004	0.084	0.082	-0.285	1.072	
H99588	Human lymphoid nuclear protein (LAF-4) mRNA, complete cds	0.048	0.225	0.232	-0.092	-0.482	1.118	
AA457051	Human lymphoid-restricted membrane protein (Jaw1) mRNA, complete cds	0.585	0.572	0.521	0.245	0.755	0.202	
H66484	Human lymphoid-specific SP100 homolog (LYSP100-A) mRNA, complete cds	0.092	-0.065	0.407	0.250	0.033	0.353	
AA455955	Human lymphoma proprotein convertase (LPC) mRNA, complete cds	0.191	0.034	0.715	0.342	1.059	0.443	
AA458922	Human lysophosphatidic acid acyltransferase-alpha mRNA, complete cds	0.428	0.757	0.601	0.039	0.684	0.348	
T60135	Human lysophospholipase homolog (HU-K5) mRNA, complete cds	1.031	0.912	0.524	0.412	0.579	0.088	
R42153	Human lysosomal glycosylasparaginase (AGA) gene	0.072	0.250	0.040	-0.140	0.378	-0.002	
R42153	Human lysosomal glycosylasparaginase (AGA) gene	0.240	0.189	-0.114	-0.080	0.343	0.506	
AA676458	Human lysyl oxidase-related protein (WS9-14) mRNA, complete cds	-0.082	0.100	0.170	0.139	-0.065	0.473	
AA504272	Human M4 protein mRNA, complete cds	-0.234	0.066	-0.191	0.052	0.446	-0.569	
AA485353	Human Mac-2 binding protein mRNA, complete cds	0.075	0.115	0.243	1.251	0.171	0.219	
N62562	Human MAC30 mRNA, 3' end	0.273	0.129	0.249	0.715	-0.060	0.738	
R23725	Human MAGE-10 antigen (MAGE10) gene, complete cds	0.432	-0.114	0.060	0.612	-0.311	0.711	
R15814	Human malate dehydrogenase (MDHA) mRNA, complete cds	-0.259	-0.391	-0.015	0.375	-0.130	0.305	
R15814	Human malate dehydrogenase (MDHA) mRNA, complete cds	0.051	0.465	-0.016	-0.295	-0.078	0.892	
AA464595	Human malignant melanoma metastasis-suppressor (KiSS-1) gene, mRNA, complete cds	0.401	0.899	0.138	0.590	0.100	0.113	
H22922	Human manic fringe precursor mRNA, complete cds	0.247	-0.206	0.181	0.078	0.052	0.074	
H07920	Human MAP kinase kinase 6 (MKK6) mRNA, complete cds	-0.048	0.664	0.016	0.322	0.132	0.650	
R39221	Human MAP kinase mRNA, complete cds	-0.171	0.131	0.027	0.237	-0.326	0.322	
AA444049	Human MAP kinase phosphatase (MKP-2) mRNA, complete cds	-0.280	0.173	-0.019	-0.379	-0.218	0.032	
W68281	Human MAPKAP kinase (3pK) mRNA, complete cds	0.142	0.160	0.440	0.147	0.388	-0.262	
AA071473	Human matrilin-2 precursor mRNA, partial cds	-0.115	-0.192	0.101	-0.238	-0.165	0.113	
AA029299	Human MaxiK potassium channel beta subunit mRNA, complete cds	-1.108	-0.600	-0.901	-1.177	-0.932	0.528	
T50675	Human Mch3 isoform alpha (Mch3) mRNA, complete cds	0.117	0.255	-0.113	0.100	0.487	0.218	
AA281635	Human MDA-7 (mda-7) mRNA, complete cds	0.156	-0.051	-0.320	-0.236	-0.322	0.412	
AA703449	Human Meis1-related protein 2 (MRG2), mRNA, partial cds	-0.370	-0.176	0.028	-0.144	0.079	0.876	
W69649	Human MEK5 mRNA, complete cds	0.086	0.173	0.162	0.232	0.137	0.924	
AA432143	Human melanocyte-specific gene 1 (msg1) mRNA, complete cds	0.551	0.746	-0.045	-0.005	0.801	-0.149	
N32199	Human melanoma antigen recognized by T-cells (MART-1) mRNA	-0.279	0.044	0.277	-0.076	0.242	0.324	
AA686726	Human membrane-associated protein (HEM-1) mRNA, complete cds	0.034	-0.119	0.301	-0.409	-0.036	0.448	
T99793	Human meningioma-expressed antigen 11 (MEA11) mRNA, partial cds	0.123	0.141	-0.014	-0.097	-0.013	0.556	
R41928	Human mercurial-insensitive water channel mRNA, form 2, complete cds	0.355	0.482	0.408	-0.164	-0.300	0.214	
R41928	Human mercurial-insensitive water channel mRNA, form 2, complete cds	0.053	0.291	0.324	0.164	-0.401	0.148	
H59231	Human metalloprotease/disintegrin/cysteine-rich protein precursor (MDC9) mRNA, complete cds	0.167	-0.014	0.249	0.050	0.064	0.356	
T56281	Human metallothionein (MT)-I-F gene	0.000	-0.267	0.185	-0.084	-0.158	0.330	
H72723	Human metallothionein I-B gene	0.155	0.410	-0.114	0.019	0.304	0.784	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA872383	Human metallothionein-le gene (hMT-le)	-0.331	0.094	-0.066	-0.114	0.008	0.952	
AA292676	Human metargidin precursor mRNA, complete cds	0.795	0.535	0.186	-0.526	0.924	0.687	
N71159	Human metastasis-associated mta1 mRNA, complete cds	0.324	0.390	-0.173	-0.040	-0.150	0.213	
AA487589	Human methionine aminopeptidase mRNA, complete cds	1.308	0.895	0.503	0.024	0.120	-0.210	
AA157955	Human methyl sterol oxidase (ERG25) mRNA, complete cds	-0.042	-0.110	0.328	0.193	-0.134	0.382	
N62179	Human methylmalonate semialdehyde dehydrogenase gene, complete cds	0.109	0.308	-0.500	-0.775	-0.254	-0.036	
N50834	Human mevalonate pyrophosphate decarboxylase (MPD) mRNA, complete cds	0.252	0.522	0.268	0.418	0.203	0.290	
AA458966	Human MHC Class I region proline rich protein mRNA, complete cds	0.234	0.124	0.411	0.384	0.328	0.281	
AA056013	Human microfilament-associated glycoprotein-2 MAGP-2 mRNA, complete cds	-0.152	-0.234	0.472	0.232	-0.072	0.276	
H85557	Human microsomal stress 70 protein ATPase core (stch) mRNA, complete cds	0.106	0.342	0.401	0.035	0.298	0.466	
N21576	Human mitochondrial 1,25-dihydroxyvitamin D3 24-hydroxylase mRNA, complete cds	0.014	-0.157	0.533	-0.262	-0.124	0.155	
H72937	Human mitochondrial 2,4-dienoyl-CoA reductase mRNA, complete cds	0.645	0.469	0.287	0.108	0.328	0.160	
R53942	Human mitochondrial ADP/ADT translocator mRNA, complete cds	0.660	0.665	0.206	0.070	0.404	0.315	
R53942	Human mitochondrial ADP/ADT translocator mRNA, complete cds	0.582	0.657	-0.035	0.079	0.181	-0.041	
AA173369	Human mitochondrial ADP/ADT translocator mRNA, complete cds	0.697	0.133	-0.108	0.137	0.059	0.307	
AA843592	Human mitochondrial ATP synthase subunit 9, P3 gene copy, nuclear gene encoding mitochondrion	-0.036	-0.295	0.117	-0.275	0.343	0.352	
AA127014	Human mitochondrial intermediate peptidase precursor (MIPEP) mRNA, mitochondrial gene encoding	0.898	0.603	1.170	0.553	0.847	-0.266	
R31115	Human mitochondrial NADH dehydrogenase-ubiquinone Fe-S protein 8, 23 kDa subunit precursor (ND	0.418	0.259	0.313	0.135	0.782	0.068	
AA620477	Human mitochondrial RNA polymerase mRNA, nuclear gene encoding mitochondrial protein, complete	0.470	0.397	0.850	0.170	0.680	0.422	
H37761	Human mitochondrial serine hydroxymethyltransferase (MTHFR) mRNA, complete cds	0.213	0.480	0.206	0.557	-0.010	0.223	
AA150828	Human mitogen induced nuclear orphan receptor (MINOR) mRNA, complete cds	0.317	0.347	-0.207	-0.654	-0.068	0.492	
H54686	Human mitogen-activated kinase kinase kinase 5 (MAPKKK5) mRNA, complete cds	0.294	0.499	0.308	0.362	-0.063	0.288	
AA400476	Human mitogen-responsive phosphoprotein (DOC-2) mRNA, complete cds	0.145	-0.130	0.254	0.177	-0.124	0.095	
AA599173	Human mitotic centromere-associated kinesin mRNA, complete cds	0.710	0.242	0.370	0.257	0.579	0.145	
T64134	Human modulator recognition factor 1 (MRF-1) mRNA, 3' end	-0.023	0.685	-0.567	-0.098	-0.846	0.041	
AA599173	Human monocytic leukemia zinc finger protein (MOZ) mRNA, complete cds	0.255	0.311	-0.194	-0.029	0.528	-0.114	
AA598526	Human MOP1 mRNA, complete cds	0.032	0.435	0.043	0.097	0.515	-0.009	
AA426312	Human Mox1 protein (MOX1) mRNA, complete cds	0.284	-0.113	-0.042	-0.454	-0.314	-0.083	
H05820	Human MRL3 mRNA for ribosomal protein L3 homologue (MRL3 = mammalian ribosome L3)	0.119	0.313	0.090	-0.730	0.354	0.278	
H05820	Human MRL3 mRNA for ribosomal protein L3 homologue (MRL3 = mammalian ribosome L3)	1.091	0.214	1.344	0.171	0.983	0.275	
H16798	Human mRNA (HA0643) for ORF (Canis ovis ovis acetyltransferase 48 kDa subunit homologue), compl	-0.057	-0.044	0.185	0.601	0.128	0.378	
H16798	Human mRNA (HA0643) for ORF (Canis ovis ovis acetyltransferase 48 kDa subunit homologue), compl	0.198	0.724	-0.096	-0.071	-0.003	0.838	
AA504128	Human mRNA export protein Rae1 (RAE1) mRNA, complete cds	0.946	0.735	0.601	0.256	0.555	0.017	
AA485750	Human mRNA expressed in HCHCC livers and MolT-4 proliferating cells, partial sequence	-0.021	0.194	0.326	0.088	-0.047	0.102	
H05893	Human mRNA for 26S proteasome subunit p87	0.515	1.271	-0.069	-0.018	0.462	0.296	
H05893	Human mRNA for 26S proteasome subunit p87	0.521	0.586	0.119	0.019	0.397	0.243	
W69906	Human mRNA for 5'-terminal region of UMK, complete cds	0.193	0.389	0.433	0.278	0.150	-0.440	
AA703187	Human mRNA for acetyl-coenzyme A transporter, complete cds	0.235	0.090	0.454	0.032	0.072	-0.303	
AA047478	Human mRNA for actin binding protein p57, complete cds	0.552	0.218	0.597	0.164	0.306	0.049	
AA862992	Human mRNA for alanine aminotransferase	-0.555	-0.236	-0.124	-0.405	-0.194	0.607	
T65118	Human mRNA for alpha-catenin, complete cds	0.400	0.231	0.060	0.388	0.170	0.606	
T65118	Human mRNA for alpha-catenin, complete cds	0.248	0.356	-0.076	0.141	0.271	0.049	
AA281616	Human mRNA for alpha-fetoprotein enhancer binding protein	0.569	0.398	0.185	-0.168	0.289	0.053	
AA432261	Human mRNA for ankyrin motif, complete cds	0.739	0.325	0.416	0.012	0.609	0.501	
H19203	Human mRNA for Apo1_Human (MER5/Aop1-Mouse)-like protein, complete cds	-0.646	-0.523	-0.539	-1.255	-1.206	0.332	
W80637	Human mRNA for apolipoprotein E receptor 2, complete cds	0.473	0.095	0.526	0.239	0.237	-0.284	
AA644234	Human mRNA for ATP synthase gamma-subunit (H-type), complete cds	-1.107	-1.049	-0.421	-0.558	0.042	-0.821	
N27179	Human mRNA for BST-1, complete cds	0.112	0.138	-0.228	-0.385	0.192	-0.031	
AA485371	Human mRNA for BST-2, complete cds	0.402	-0.071	0.394	0.126	0.751	-0.580	
AA700005	Human mRNA for CAAF1 (calcium-binding protein in amniotic fluid 1), complete cds	-0.365	-0.084	0.044	-0.646	0.285	-0.464	
AA464731	Human mRNA for calgizzarin, complete cds	0.321	0.771	0.039	-0.222	1.212	-0.073	
R44288	Human mRNA for calmodulin	-0.015	0.094	-0.432	-0.502	-0.181	0.182	
R44288	Human mRNA for calmodulin	0.559	0.643	0.311	0.084	0.534	-0.125	
AA398400	Human mRNA for calponin, complete cds	0.595	0.081	0.280	-0.035	0.362	0.245	
AA456051	Human mRNA for ceramide glucosyltransferase, complete cds	0.430	0.073	0.112	0.113	-0.030	1.886	
AA460727	Human mRNA for clathrin coat assembly protein-like, complete cds	0.945	0.479	1.107	0.489	0.746	0.123	
R40767	Human mRNA for clathrin-like protein, complete cds	0.978	0.762	0.124	0.418	0.766	0.068	
AA460679	Human mRNA for CMP-sialic acid transporter, complete cds	0.437	0.485	0.373	0.067	0.460	1.306	
AA464553	Human mRNA for c-myc binding protein, complete cds	-0.177	0.174	0.182	-0.410	0.268	0.516	
R71093	Human mRNA for collagen binding protein 2, complete cds	1.001	0.512	0.139	0.120	0.371	-0.332	
AA070722	Human mRNA for cone-specific cGMP phosphodiesterase gamma subunit, complete cds	0.512	0.012	-0.083	0.027	0.193	-0.332	
N50511	Human mRNA for cyclin 1, complete cds	-0.472	-0.551	-0.150	-0.793	-0.091	0.040	
AA425038	Human mRNA for cysteine protease, complete cds	0.385	0.311	0.421	0.164	0.652	0.319	
R59927	Human mRNA for cytochrome c oxidase subunit VIc	0.275	-0.133	0.767	0.004	-0.319	0.202	
R59927	Human mRNA for cytochrome c oxidase subunit VIc	0.182	0.678	0.325	0.226	-0.020	-0.249	
T63988	Human mRNA for DB1, complete cds	1.022	0.224	0.672	0.095	0.062	-0.149	
AA487460	Human mRNA for dihydropyrimidinase related protein-2, complete cds	0.558	0.445	0.064	0.113	0.432	-0.053	
H16258	Human mRNA for dihydropyrimidinase related protein-3, complete cds	0.770	0.330	0.285	0.183	0.288	-0.319	
AA707650	Human mRNA for DNA polymerase alpha-subunit	0.355	0.112	0.381	0.206	0.170	-0.437	
AA680186	Human mRNA for EBI1-ligand chemokine, complete cds	-0.147	0.018	0.119	-0.506	0.822	0.511	
AA485427	Human mRNA for ESP1/CRP2, complete cds	-0.012	0.279	0.702	-0.167	0.250	0.814	
H09590	Human mRNA for eukaryotic initiation factor 4A1	0.678	0.261	0.658	0.851	0.873	-0.346	
H09590	Human mRNA for eukaryotic initiation factor 4A1	0.210	0.444	0.050	0.010	0.592	0.660	
H09519	Human mRNA for eukaryotic initiation factor 4A1	-0.151	0.145	-0.150	-1.050	-0.578	0.502	
H09519	Human mRNA for eukaryotic initiation factor 4A1	0.873	0.805	0.231	0.223	0.286	0.217	
N80235	Human mRNA for GC box binding protein, complete cds	0.240	0.397	0.317	0.455	0.134	-0.044	
AA485974	Human mRNA for golgi antigen gcp372, complete cds	0.388	0.156	0.143	-0.239	-0.185	-0.104	
AA102068	Human mRNA for heat shock transcription factor 4, complete cds	0.108	0.055	0.069	-0.238	0.052	-0.194	
AA453749	Human mRNA for hepatoma-derived growth factor, complete cds	0.545	0.250	0.556	0.128	0.480	-0.835	
H11069	Human mRNA for heterogeneous nuclear ribonucleoprotein D (hnRNP D)	0.078	0.248	0.356	0.529	-0.073	-0.879	
H11069	Human mRNA for heterogeneous nuclear ribonucleoprotein D (hnRNP D)	0.062	-0.048	-0.618	-0.595	-0.203	0.405	
AA180013	Human mRNA for HGF activator like protein, complete cds	0.155	0.243	0.415	0.393	0.130	0.326	
N98412	Human mRNA for HHR23A protein, complete cds	0.501	0.344	-0.125	0.329	0.173	0.464	
N31452	Human mRNA for histamine N-methyltransferase, complete cds	-0.249	0.036	-0.129	-0.025	0.099	0.382	
R60150	Human mRNA for histidyl-HRNA synthetase (HRS)	-0.314	-0.061	0.312	-0.325	0.246	0.101	
R60150	Human mRNA for histidyl-HRNA synthetase (HRS)	0.336	0.296	0.393	-0.048	0.506	-0.049	
W81318	Human mRNA for histone H1x, complete cds	-0.490	-0.337	-0.268	-0.567	-0.504	0.472	
N69491	Human mRNA for kinesin-related protein, partial cds	0.255	-0.010	0.474	0.038	-0.161	0.342	
H05914	Human mRNA for lactate dehydrogenase-A (LDH-A, EC 1.1.1.27)	0.210	0.493	0.137	0.504	1.707	-0.094	
H05914	Human mRNA for lactate dehydrogenase-A (LDH-A, EC 1.1.1.27)	0.526	0.441	0.314	0.419	1.352	0.319	
AA464566	Human mRNA for LDL-receptor related protein	0.050	-0.058	0.049	-0.117	-0.080	0.496	
AA877845	Human mRNA for LIMK-2, complete cds	0.541	0.553	-0.584	-0.516	-0.035	0.356	
AA176688	Human mRNA for lysosomal sialoglycoprotein, complete cds	0.136	0.067	0.661	-0.196	-0.046	0.112	
R38194	Human mRNA for LZTR-1, complete cds	-0.265	0.045	-0.323	-0.073	0.123	0.393	
H43855	Human mRNA for MDC protein	0.646	0.438	0.424	0.176	0.428	0.109	
R48926	Human mRNA for mitochondrial enoyl-CoA hydratase/3-hydroxyacyl-CoA dehydrogenase alpha-subunit	1.184	0.129	0.406	0.352	0.338	0.120	
R48926	Human mRNA for mitochondrial enoyl-CoA hydratase/3-hydroxyacyl-CoA dehydrogenase alpha-subunit	0.174	0.346	0.059	-0.254	-0.068	-0.460	
H23075	Human mRNA for mitochondrial 3-ketoacyl-CoA thiolase beta-subunit of trifunctional protein, complete	-0.308	-0.288	0.165	0.307	-0.147	-0.102	
H23075	Human mRNA for mitochondrial 3-ketoacyl-CoA thiolase beta-subunit of trifunctional protein, complete	0.452	0.539	0.383	-0.032	0.310	-0.272	
H07926	Human mRNA for mitochondrial 3-oxoacyl-CoA thiolase, complete cds	0.520	0.148	0.216	0.878	1.284	-0.216	
R43558	Human mRNA for mitochondrial short-chain enoyl-CoA hydratase, complet	1.874	1.137	0.593	0.749	0.153	-0.081	
R43558	Human mRNA for mitochondrial short-chain enoyl-CoA hydratase, complet	0.163	0.339	0.275	0.041	0.833	0.109	
AA431885	Human mRNA for MNK1, complete cds	0.161	-0.056	0.477	-0.455	-0.132	-0.040	
H23197	Human mRNA for MOBP (myelin-associated oligodendrocytic basic protein), complete cds, clone HOPI	-1.293	-0.750	-1.224	-2.096	-0.525	0.282	
AA857716	Human mRNA for motor protein, complete cds	0.010	-0.454	-0.223	-0.088	-0.525	0.282	
T46897	Human mRNA for Mr 110,000 antigen, complete cds	0.583	0.634	0.568	-0.010	0.497	0.575	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
N76927	Human mRNA for NADPH-flavin reductase, complete cds	0.764	0.874	0.116	0.752	0.480	-0.136	
H45300	Human mRNA for nel-related protein 2, complete cds	0.262	0.077	0.532	-0.076	-0.096	-0.171	
N79534	Human mRNA for nel-related protein, complete cds	0.409	0.194	0.586	-0.003	0.255	-0.056	
AA482070	Human mRNA for Neuroblastoma, complete cds	0.606	0.361	0.506	0.364	0.436	-0.667	
AA463251	Human mRNA for nucleosome assembly protein, complete cds	-0.438	-0.281	-0.482	-1.220	-0.313	-0.337	
AA487588	Human mRNA for ORF, Xq terminal portion	0.053	0.475	0.576	0.045	0.747	0.522	
AA487466	Human mRNA for ornithine decarboxylase antizyme, ORF 1 and ORF 2	0.316	0.118	-0.185	-0.189	0.000	0.214	
W93413	Human mRNA for p52 and p64 isoforms of N-Shc, complete cds	0.317	0.222	0.531	0.242	0.091	0.071	
AA682613	Human mRNA for p97 homologous protein, partial cds	2.534	0.312	2.591	1.295	1.258	0.171	
AA454868	Human mRNA for PDGF receptor beta-like tumor suppressor (PRLTS), complete cds	0.578	0.170	0.613	0.211	0.274	0.078	
AA007699	Human mRNA for phosphatidylinositol-glycan-class C (PIG-C), complete cds	-0.093	-0.639	-0.671	0.050	-0.539	-0.395	
R22219	Human mRNA for phosphoethanolamine cytidyltransferase, complete cds	0.241	0.400	0.523	0.281	0.068	-0.447	
AA406325	Human mRNA for phospholipase C, complete cds	0.103	0.095	0.315	0.289	-0.118	0.612	
R20554	Human mRNA for phospholipase C-alpha, complete cds	-0.240	0.558	-0.505	-0.220	0.336	-0.131	
R20554	Human mRNA for phospholipase C-alpha, complete cds	0.282	0.209	-0.199	0.241	-0.116	-0.102	
R44822	Human mRNA for phosphoribosylpyrophosphate synthetase-associated protein 39, complete cds	0.197	-0.010	0.637	0.430	-0.110	1.781	
T71686	Human mRNA for PIG-B, complete cds	0.223	0.849	-0.435	-0.197	-0.168	1.025	
T68453	Human mRNA for PIMT isozyme I, complete cds	-0.085	-0.412	-0.278	-0.119	0.802	0.924	
N73625	Human mRNA for PK-120	0.212	0.191	0.421	-0.153	-0.070	0.223	
AA464238	Human mRNA for platelet activating factor acetylhydrolase IB gamma-subunit, complete cds	-0.583	0.361	0.016	-0.504	-0.488	-0.096	
R38433	Human mRNA for platelet-type phosphofructokinase, complete cds	0.179	0.083	-0.147	0.163	0.440	0.509	
R38433	Human mRNA for platelet-type phosphofructokinase, complete cds	0.356	0.361	0.210	0.061	0.347	-0.257	
AA629923	Human mRNA for pM5 protein	-0.368	-0.506	-0.160	-0.372	-0.449	0.010	
AA486531	Human mRNA for polyA binding protein	-0.810	-0.374	-0.014	-0.270	-0.137	-0.554	
N50745	Human mRNA for prepro cortistatin like peptide, complete cds	-0.795	-0.775	-0.405	-1.337	-0.680	0.660	
AA488406	Human mRNA for pre-pro-megakaryocyte potentiating factor, complete cds	0.350	0.238	-0.083	0.028	-0.025	-0.005	
H65395	Human mRNA for proteasome activator PA28 subunit beta, complete cds	-0.257	-0.313	-0.171	-0.130	-0.400	0.953	
AA620580	Human mRNA for proteasome subunit Hsc10-II, complete cds	0.129	0.080	0.260	0.125	0.355	0.809	
N53065	Human mRNA for proteasome subunit Hsc71, complete cds	0.245	0.095	-0.054	0.093	0.333	0.449	
AA403126	Human mRNA for proteasome subunit p27, complete cds	0.418	0.128	-0.110	-0.173	0.129	0.517	
AA424503	Human mRNA for proteasome subunit p2, complete cds	0.532	0.342	0.293	0.300	0.702	0.521	
AA489343	Human mRNA for proteasome subunit z, complete cds	0.510	0.125	-0.049	-0.054	0.318	0.755	
AA448289	Human mRNA for protein D123, complete cds	0.121	-0.252	-0.050	-0.540	-0.146	1.045	
AA404387	Human mRNA for protein disulfide isomerase-related protein (PDIR), complete cds	0.041	-0.014	-0.171	-0.782	-0.118	1.215	
AA490473	Human mRNA for protein phosphatase 2A (beta-type)	1.610	1.325	1.458	1.509	2.513	0.197	
AA457717	Human mRNA for proton-ATPase-like protein, complete cds	0.385	0.090	0.084	-0.180	0.322	0.712	
AA488681	Human mRNA for rab GDI alpha, complete cds	0.544	0.260	0.066	-0.122	0.160	0.040	
H78788	Human mRNA for RanBP2 (Ran-binding protein 2), complete cds	0.283	0.274	0.061	0.048	0.127	0.433	
W67200	Human mRNA for RBP-MS/tyr1, complete cds	0.640	0.102	0.405	-0.164	-0.082	0.744	
AA705069	Human mRNA for receptor of retinoic acid	-0.259	-0.247	0.497	0.030	0.434	0.831	
AA648464	Human mRNA for regenerating protein I beta, complete cds	0.067	0.161	0.442	0.513	0.494	0.164	
N53056	Human mRNA for renal Na+-dependent phosphate cotransporter, complete cds	-0.277	-0.116	-0.706	-0.496	-0.203	0.123	
AA457719	Human mRNA for reticulocalbin, complete cds	0.083	0.294	0.050	-0.103	0.078	0.758	
AA057233	Human mRNA for retinal S-antigen (48 kDa protein)	0.620	0.391	0.324	0.240	0.446	1.350	
AA432063	Human mRNA for rhodanese, complete cds	-0.723	-0.542	-0.169	-0.662	-0.802	1.549	
AA465387	Human mRNA for RNA helicase (HRH1), complete cds	0.807	-0.276	0.634	-0.036	0.198	1.477	
H91647	Human mRNA for rod photoreceptor protein, complete cds	0.134	0.277	0.072	-0.228	0.461	0.830	
AA465353	Human mRNA for RPD3 protein, complete cds	0.785	0.378	0.227	0.422	0.204	0.812	
AA486403	Human mRNA for RTP, complete cds	0.485	0.539	0.334	0.101	1.212	-0.121	
AA425934	Human mRNA for S100 alpha protein	-0.182	-0.019	0.140	-0.169	0.110	0.659	
AA042990	Human mRNA for semaphorin E, complete cds	-0.349	-0.209	-0.328	-0.676	-0.256	0.966	
H05140	Human mRNA for SMP-30 (senescence marker protein-30), complete cds	0.376	0.681	0.460	0.227	0.236	0.850	
N55480	Human mRNA for suppressor for yeast mutant, complete cds	0.237	0.235	0.252	0.117	0.568	0.907	
AA461506	Human mRNA for TESK1, complete cds	0.531	0.816	0.287	0.027	0.535	0.614	
AA812973	Human mRNA for testis-specific TCP20, complete cds	-0.631	-0.234	-0.185	-0.078	-0.396	1.108	
N52466	Human mRNA for tob family, complete cds	0.413	0.494	0.476	0.587	1.238	0.666	
AA490213	Human mRNA for Tob, complete cds	0.805	0.286	0.650	0.097	0.380	0.392	
AA670134	Human mRNA for TPRD, complete cds	-0.137	-0.191	0.489	-0.178	-0.171	0.700	
AA412500	Human mRNA for transcription elongation factor S-II, hS-II-T1, complete cds	0.336	0.222	0.486	0.395	0.956	0.762	
H46554	Human mRNA for transcription factor AREB6, complete cds	-0.167	-0.157	-0.179	0.347	0.515	0.480	
AA450205	Human mRNA for translocation protein-1, complete cds	0.133	0.349	-0.388	-0.297	-0.193	0.812	
AA279188	Human mRNA for transmembrane protein, complete cds	-1.035	-0.584	-0.468	-0.631	-1.018	0.434	
AA035450	Human mRNA for type 1 inositol 1,4,5-trisphosphate receptor, complete cds	0.140	0.285	0.322	0.309	0.302	0.408	
AA479093	Human mRNA for type 2 inositol 1,4,5-trisphosphate receptor, complete cds	0.027	0.146	0.249	0.159	0.550	0.472	
AA253448	Human mRNA for U1 small nuclear RNP-specific C protein	0.513	0.693	0.327	0.173	0.357	0.156	
AA113881	Human mRNA for ubiquitin-conjugating enzyme, complete cds	1.069	0.558	0.693	0.001	0.026	1.178	
H51549	Human mRNA for UDP-galactose translocator, complete cds	0.686	0.302	0.709	0.060	0.245	0.705	
R41839	Human mRNA for UDP-galactose transporter related isozyme 1, complete cds	0.225	0.165	-0.021	-1.003	-0.342	0.716	
AA036656	Human mRNA for uKATP-1, complete cds	0.185	0.314	-0.063	-0.309	0.371	0.748	
R20770	Human mRNA for unc-18 homologue, complete cds	-0.064	0.158	0.069	0.433	0.260	0.709	
AA699573	Human mRNA for variant hepatic nuclear factor 1 (vHNF1)	0.326	0.061	-0.027	-0.163	0.135	0.549	
AA489678	Human mRNA for XP-C repair complementing protein (p58/HHR23B), complete cds	0.582	0.386	-0.013	0.204	0.009	0.791	
AA864007	Human mRNA for YSK1, complete cds	-0.219	-0.119	-0.096	0.102	0.406	0.597	
AA490538	Human mRNA for zinc finger 5 protein, complete cds	0.274	0.055	-0.385	-1.058	-0.608	0.036	
AA034215	Human mRNA for zinc finger protein, complete cds	0.250	0.098	-0.047	0.248	-0.009	0.405	
AA400474	Human mRNA for zona-pellucida-binding protein (sp38), complete cds	0.267	0.039	0.210	-0.121	0.269	0.548	
AA427899	Human mRNA fragment encoding beta-tubulin, (from clone D-beta-1)	0.109	0.213	-0.195	0.392	0.037	0.545	
AA497027	Human mRNA, clone HH109 (screened by the monoclonal antibody of insulin receptor substrate-1 (IRS)	0.359	-0.426	-1.133	-1.123	-0.337	0.334	
AA115076	Human msg1-related gene 1 (msg1) mRNA, complete cds	-0.306	-0.432	-0.622	-0.776	-0.235	0.530	
AA668527	Human mucosal addressin cell adhesion molecule-1 (MAdCAM-1) mRNA, complete cds	-0.259	-0.172	-0.171	-0.542	-0.111	0.482	
AA429895	Human multidrug resistance-associated protein homolog (MRP3) mRNA, partial cds	-0.146	0.079	-0.271	-0.357	-0.210	0.593	
N68159	Human multidrug resistance-associated protein homolog (MRP5) mRNA, partial cds	0.477	1.002	0.000	-0.038	-0.010	0.143	
H19522	Human multiple exostosis-like protein (EXTL) mRNA, complete cds	0.085	-0.290	-0.160	-0.258	0.393	0.517	
N24004	Human mutY homolog (hMYH) gene, complete cds	0.874	0.814	0.095	0.682	0.013	0.813	
AA705886	Human MXI1 mRNA, complete cds	-0.236	0.544	0.132	0.207	0.567	0.542	
AA457726	Human myelodysplasia/myeloid leukemia factor 2 (MLF2) mRNA, complete cds	0.536	0.740	0.114	0.318	0.495	0.243	
H14359	Human myeloid elf-1 like factor (MEF) mRNA, complete cds	0.434	0.651	0.002	0.117	0.417	0.489	
H40681	Human myeloid differentiation primary response protein MyD88 mRNA, complete cds	-0.036	0.461	0.548	0.355	0.448	0.463	
AA461347	Human myosin binding protein H mRNA, complete cds	0.381	0.404	-0.296	0.084	0.352	0.491	
AA029956	Human myosin-IC mRNA, complete cds	0.277	0.197	-0.188	-0.220	0.196	0.583	
AA702663	Human myosin-IXb mRNA, complete cds	0.084	0.003	-0.135	0.093	0.034	0.111	
R66008	Human N33 mRNA, complete cds	-0.117	0.086	-0.034	-0.137	0.076	0.265	
N14692	Human Na/H antiporter (APNH1) mRNA, complete cds	1.796	0.640	1.506	0.418	2.161	0.391	
N14692	Human Na/H antiporter (APNH1) mRNA, complete cds	1.711	1.572	0.888	0.542	1.209	0.696	
AA464139	Human NAD(H)-specific isocitrate dehydrogenase alpha subunit precursor mRNA, complete cds	-0.247	0.256	0.063	0.109	0.507	0.723	
H06676	Human NAD+-dependent succinate-semialdehyde dehydrogenase (SSADH) mRNA, 3' end	-0.298	0.082	-0.186	-0.163	0.469	0.165	
T98497	Human NAD+-specific isocitrate dehydrogenase beta subunit precursor, mRNA, nuclear gene encoding	0.202	-0.241	-0.188	-0.309	-0.199	0.645	
AA680322	Human NADH:ubiquinone oxidoreductase MLRQ subunit mRNA, complete cds	0.087	-0.162	0.358	1.349	0.064	0.314	
AA608515	Human NADH:ubiquinone oxidoreductase subunit B13 (B13) mRNA, complete cds	0.439	0.606	0.159	0.273	0.446	0.126	
AA454113	Human N-benzoyl-L-tyrosyl-p-amino-benzoic acid hydrolase alpha subunit (PPH alpha) mRNA, complete cds	0.057	0.143	0.082	0.151	0.259	0.247	
R51580	Human NECDIN related protein mRNA, complete cds	0.175	0.555	0.081	0.420	0.492	0.430	
H97488	Human N-ethylmaleimide-sensitive factor mRNA, partial cds	-0.279	-0.112	-0.101	-0.131	-0.012	0.124	
AA709271	Human neural cell adhesion protein (NCAM21) mRNA, complete cds	-0.354	-0.388	-0.288	-0.489	-0.471	0.730	
H29256	Human neuroendocrine/beta-cell-type calcium channel alpha-1 subunit mRNA, complete cds	0.295	-0.282	0.018	-0.326	-0.318	0.647	
R44815	Human neuroendocrine-dlg (NE-dlg) mRNA, complete cds	-0.425	0.009	0.213	0.031	-0.130	1.131	
H49511	Human neurogranin (RC3) mRNA, complete cds	0.203	0.136	-0.102	0.467	0.191	1.132	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA284329	Human neuronal membrane glycoprotein M6b mRNA, partial cds	0.024	0.764	-0.806	-0.658	-0.646	0.678	
H26182	Human neuronal PAS2 (NPAS2) mRNA, complete cds	0.066	0.270	-0.064	0.367	0.247	0.480	
H22445	Human neuronal pentraxin 1 (NPTX1) mRNA, complete cds	-0.523	-0.118	0.056	0.168	0.178	0.277	
H11603	Human neuron-specific vesicle coat protein and cerebellar degeneration antigen (beta-NAP) mRNA, cc	0.461	1.350	0.756	0.752	1.233	0.347	
T70031	Human neutral amino acid transporter B mRNA, complete cds	-0.711	-0.393	-0.738	-1.222	-0.650	0.310	
AA679278	Human NF-ATc mRNA, complete cds	-0.577	-0.934	-0.594	-0.509	-0.771	0.344	
T72089	Human nicotinamide N-methyltransferase (NNMT) mRNA, complete cds	0.599	0.382	0.371	0.399	0.500	-0.147	
H22944	Human nicotinamide nucleotide transhydrogenase mRNA, nuclear gene encoding mitochondrial protein	-0.171	-0.170	-0.218	-0.075	-0.218	0.560	
T55560	Human NiRu-like protein (hNiRu) mRNA, partial cds	0.588	0.715	1.372	0.613	0.711	0.795	
AA625806	Human ninjurin1 mRNA, complete cds	-0.210	-0.022	-0.335	-0.437	0.001	0.597	
AA628154	Human NK-tumor recognition molecule-related protein mRNA, complete cds	0.320	0.470	-0.243	0.210	0.321	-0.440	
W48701	Human NOF1 mRNA, complete cds	0.384	0.246	0.182	0.073	0.700	0.657	
R43217	Human non-histone chromosomal protein (NHC) mRNA, complete cds	1.405	1.673	0.923	1.277	0.999	0.739	
R53889	Human non-histone chromosomal protein HMG-14 mRNA, complete cds	0.286	0.984	-0.120	-0.008	-0.216	1.000	
N72057	Human non-histone chromosomal protein HMG-17 mRNA, complete cds	-0.106	0.027	0.027	-0.096	-0.011	1.229	
AA284172	Human NPAT mRNA, complete cds	0.268	0.380	0.045	0.179	0.548	0.350	
H09936	Human NSCL-1 mRNA sequence	-0.144	-0.139	-1.428	0.130	-1.464	-0.030	
AA485913	Human nuclear chloride ion channel protein (NCC27) mRNA, complete cds	1.184	0.627	1.027	0.588	0.933	-0.440	
W87528	Human nuclear factor I-B2 (NFIB2) mRNA, complete cds	-0.029	0.275	-0.461	-0.301	-0.664	1.004	
AA894687	Human nuclear factor NF45 mRNA, complete cds	0.021	0.295	0.318	0.031	0.370	0.820	
H61726	Human nuclear orphan receptor LXR-alpha mRNA, complete cds	0.278	0.466	0.443	0.749	0.315	1.105	
T52627	Human nuclear phosphoprotein mRNA, complete cds	0.352	1.268	-0.157	0.127	-0.007	0.545	
H17512	Human nuclear protein Skip mRNA, complete cds	-0.300	0.042	0.270	0.368	0.264	-0.096	
H05899	Human nuclear ribonucleoprotein particle (hnRNP) C protein mRNA, complete cds	0.072	0.893	0.141	0.314	0.762	0.599	
H05899	Human nuclear ribonucleoprotein particle (hnRNP) C protein mRNA, complete cds	0.103	0.570	0.706	-0.007	-0.016	0.605	
R45255	Human nucleolar protein p40 mRNA, complete cds	-0.523	0.094	0.090	0.203	-0.091	0.485	
AA148536	Human nucleoporin 98 (NUP98) mRNA, complete cds	-0.990	-0.413	-1.053	-0.925	-0.862	1.132	
H92201	Human nucleosome assembly protein 2 mRNA, complete cds	-0.094	0.219	0.386	0.238	0.092	1.028	
AA706974	Human nucleotide binding protein mRNA, complete cds	-0.066	0.738	0.239	-0.044	0.101	0.648	
AA678139	Human nucleotide-binding protein mRNA, complete cds	0.337	-0.007	-0.206	-0.019	0.465	0.486	
AA675802	Human OB binding protein-2 (OB-BP2) mRNA, complete cds	-0.823	-0.885	-0.654	-0.706	-0.730	-0.078	
H94471	Human occludin mRNA, complete cds	0.099	0.115	-0.142	-0.217	-0.068	0.246	
AA425655	Human O-linked GlcNAc transferase mRNA, complete cds	0.565	0.306	0.757	0.156	0.502	0.920	
N62948	Human organic anion transporting polypeptide (OATP) mRNA, complete cds	0.161	0.167	-0.069	-0.103	-0.031	0.650	
AA702013	Human organic cation transporter 1 (hOCT1) mRNA, complete cds	0.140	2.161	-0.316	-0.663	-0.075	0.684	
R83277	Human origin recognition complex 1 (HsORC1) mRNA, complete cds	-0.073	1.585	-0.331	-0.234	-0.441	0.164	
N53172	Human orphan G protein-coupled receptor (RDC1) mRNA, partial cds	-0.075	0.169	0.441	0.672	0.166	-0.349	
AA629265	Human orphan receptor mRNA, partial cds	0.097	0.856	-0.039	0.485	0.131	-0.345	
AA418104	Human OS-9 precursor mRNA, complete cds	0.080	0.063	0.550	-0.168	0.186	-0.035	
AA283693	Human osteoclast stimulating factor mRNA, complete cds	1.802	1.714	1.142	1.492	1.800	0.760	
AA194983	Human osteoprotegerin (OPG) mRNA, complete cds	0.363	0.421	0.720	0.474	-0.022	0.726	
W89790	Human ovarian cancer downregulated myosin heavy chain homolog (Doc1) mRNA, complete cds	0.207	1.029	-0.236	0.574	0.205	0.513	
AA853449	Human oviductal glycoprotein mRNA, complete cds	0.169	-0.210	-0.144	0.080	0.021	-0.287	
AA034945	Human oxidative 3 alpha hydroxysteroid dehydrogenase mRNA, complete cds	1.505	1.174	0.410	0.599	0.595	0.804	
AA128041	Human oxidoreductase (HHCMA56) mRNA, complete cds	0.340	0.284	-0.074	0.191	0.445	0.102	
H08816	Human oxytocinase splice variant 1 mRNA, complete cds	0.342	0.457	-0.121	-0.146	-0.274	0.078	
AA683995	Human p105MCM mRNA, complete cds	-0.166	0.754	-0.265	0.379	-0.553	0.239	
R45961	Human P13-kinase associated p85 mRNA sequence	-0.207	0.235	-0.202	0.035	-0.119	0.751	
T50139	Human p160 mRNA, complete cds	0.440	0.066	0.355	-0.058	0.354	0.906	
R94175	Human p190-B (p190-B) mRNA, complete cds	0.409	0.044	0.131	0.118	0.149	0.863	
R70505	Human P2U nucleotide receptor mRNA, complete cds	-0.592	-1.173	-0.847	-1.177	-0.621	1.852	
N84428	Human p300 protein mRNA, complete cds	0.281	0.581	0.257	0.860	0.240	0.452	
N74637	Human p300/CBP-associated factor (P/CAF) mRNA, complete cds	-0.356	0.772	-0.118	0.174	0.553	0.536	
AA423870	Human p37NB mRNA, complete cds	0.026	-0.347	-0.144	-0.178	-0.431	0.724	
AA598776	Human p55CDC mRNA, complete cds	-0.318	-0.061	0.827	1.083	-0.019	0.829	
AA479100	Human p76 mRNA, complete cds	-0.099	0.201	0.211	0.492	0.203	0.741	
AA063637	Human palmitoyl protein thioesterase mRNA, complete cds	-0.254	0.123	-0.119	0.221	-0.281	0.990	
W45219	Human pancreatic lipase related protein 1 (PLRP1) mRNA, complete cds	0.249	0.313	0.606	0.471	0.709	0.622	
AA844930	Human pancreatic zymogen granule membrane protein GP-2 mRNA, complete cds	-0.237	0.176	0.186	0.463	0.062	0.018	
AA430574	Human paxillin mRNA, complete cds	0.184	0.277	0.371	0.361	0.679	-0.120	
AA490300	Human PDGF associated protein mRNA, complete cds	-0.060	0.267	0.095	-0.303	-0.172	0.210	
AA425861	Human peroxisomal enoyl-CoA hydratase-like protein (HPXEL) mRNA, complete cds	0.454	0.526	-0.112	0.146	0.181	0.837	
AA088420	Human peroxisome proliferator activated receptor gamma 2 mRNA, complete cds	0.689	0.964	0.274	0.481	0.330	0.883	
N33331	Human peroxisome proliferator activated receptor mRNA, complete cds	0.006	0.496	0.223	0.236	0.233	0.186	
AA453401	Human PH-20 homolog (LUCAS2) mRNA, partial cds	0.602	0.405	0.292	0.521	0.592	0.243	
T64880	Human phorbolin I mRNA, partial cds	-0.458	-0.123	-0.446	-0.941	-0.837	-0.076	
R04222	Human phosphatidylinositol (4,5) bisphosphate 5-phosphatase homolog mRNA, partial cds	0.399	0.718	0.336	0.492	0.165	-0.256	
AA772066	Human phosphatidylinositol (4,5)bisphosphate 5-phosphatase homolog mRNA, partial cds	0.021	-0.204	-0.103	-0.541	-0.145	0.320	
AA478625	Human phosphatidylinositol (4,5)bisphosphate 5-phosphatase homolog mRNA, partial cds	-0.228	-0.469	0.129	0.388	-0.278	0.753	
AA281784	Human phosphatidylinositol 3-kinase catalytic subunit p110delta mRNA, complete cds	-0.309	-0.222	-0.574	-0.823	-0.469	1.314	
H80263	Human phosphatidylinositol-4-phosphate 5-kinase type II beta mRNA, complete cds	0.509	0.787	0.335	0.551	0.289	0.312	
H57136	Human phospholemman chloride channel mRNA, complete cds	-0.248	0.445	0.211	0.455	0.268	-0.237	
R55490	Human phospholipase c delta 1 mRNA, complete cds	0.261	0.612	-0.258	-0.223	0.214	0.407	
N69672	Human phospholipase D mRNA, complete cds	0.221	0.583	0.175	0.306	0.237	0.189	
AA402874	Human phospholipid transfer protein mRNA, complete cds	0.387	0.230	0.092	0.606	0.237	1.038	
AA863383	Human pim-2 protooncogene homolog pim-2h mRNA, complete cds	-0.816	-0.664	-0.890	-1.277	-0.451	0.709	
AA460393	Human PINCH protein mRNA, complete cds	0.351	1.128	1.034	-0.289	0.320	-0.060	
AA456583	Human PL6 protein (PL6) mRNA, complete cds	-0.773	-0.480	-1.209	-1.411	-1.108	0.214	
H23255	Human placenta (Diff33) mRNA, complete cds	0.097	-0.406	-0.462	-0.158	0.253	0.301	
AA036975	Human placenta copper monamine oxidase mRNA, complete cds	-0.070	0.258	0.603	1.050	0.140	0.594	
AA428778	Human placenta LERK-2 (EPLG2) mRNA, complete cds	0.373	0.478	0.068	0.073	-0.038	1.023	
AA129135	Human placental equilibrative nucleoside transporter 1 (hENT1) mRNA, complete cds	0.168	0.620	0.486	0.469	0.259	0.385	
H65030	Human platelet-activating factor acetylhydrolase mRNA, complete cds	1.001	1.276	0.246	0.851	0.544	0.552	
AA448400	Human plectin (PLEC1) mRNA, complete cds	-0.169	0.231	0.472	0.969	0.288	0.565	
AA629262	Human pLK mRNA, complete cds	0.437	-0.089	0.080	0.029	0.189	0.136	
AA459266	Human PMS4 mRNA (yeast mismatch repair gene PMS1 homologue), partial cds (C-terminal region)	0.360	0.237	-0.128	0.144	0.771	-0.163	
H25510	Human PMS6 mRNA (yeast mismatch repair gene PMS1 homologue), partial cds (C-terminal region)	-0.158	-0.264	-0.263	-0.580	-0.355	0.961	
AA598840	Human polyhomeotic 2 homolog (HPH2) mRNA, complete cds	0.055	0.294	1.022	1.538	0.018	1.063	
AA489629	Human pre-B cell enhancing factor (PBEF) mRNA, complete cds	-0.399	0.232	-0.056	-0.158	0.324	0.080	
AA598817	Human preferentially expressed antigen of melanoma (PRAME) mRNA, complete cds	0.262	0.433	1.468	2.817	0.082	0.244	
AA844831	Human preprocarboxypeptidase A2 (proCPA2) mRNA, complete cds	-0.042	0.248	0.218	0.193	-0.105	0.705	
AA423867	Human prepromultimerin mRNA, complete cds	-0.296	0.060	1.095	1.887	-0.170	0.533	
AA283020	Human pre-pro-orphanin FQ (OFQ) mRNA, complete cds	-0.038	0.366	-0.343	0.365	0.298	0.459	
R55188	Human pre-TNK cell associated protein (3B3) mRNA, 3' end	-0.027	0.215	-0.043	0.354	-0.067	0.849	
N66396	Human pro-a2 chain of collagen type XI (COL11A2) gene, complete cds	0.111	0.599	0.258	0.567	0.628	0.815	
AA521431	Human profilin mRNA, complete cds	-0.045	-0.655	-0.676	-1.283	-0.571	-0.406	
AA256502	Human prothormone convertase 5 precursor (PC5) mRNA, partial cds	-0.073	0.400	0.003	0.301	0.237	0.731	
R59579	Human prostaglandin D2 synthase gene	0.064	0.270	0.246	0.558	0.123	0.729	
R97308	Human prostate carcinoma tumor antigen (pcta-1) mRNA, complete cds	0.813	0.263	0.787	0.757	0.307	0.577	
AA454743	Human protease M mRNA, complete cds	-0.228	-0.335	0.147	-0.035	0.173	0.183	
AA281152	Human protease proMch6 (Mch6) mRNA, complete cds	1.067	0.641	0.789	1.703	1.243	0.986	
AA479987	Human protein A alternatively spliced form 1 (A-1) mRNA, complete cds	-0.522	-0.245	-0.164	-0.200	-0.730	0.850	
AA088258	Human protein immuno-reactive with anti-PTH polyclonal antibodies mRNA, partial cds	0.424	0.168	0.285	1.062	0.360	0.860	
R80779	Human protein kinase (MLK-3) mRNA, complete cds	-0.123	0.183	-0.102	-0.137	0.121	1.239	
AA053674	Human protein kinase (zpk) mRNA, complete cds	0.032	0.210	1.561	2.380	0.157	1.022	
AA453176	Human protein kinase ATR mRNA, complete cds	0.432	1.117	0.027	0.455	0.576	0.911	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
T57556	Human protein kinase C inhibitor-1 cDNA, complete cds	-0.245	0.970	-0.304	0.029	-0.432	1.252	
R37657	Human protein kinase C-binding protein RACK17 mRNA, partial cds	0.694	0.861	-0.066	0.481	0.489	1.305	
AA480908	Human protein kinase C-binding protein RACK7 mRNA, partial cds	0.120	0.079	1.158	1.033	0.198	0.403	
AA779079	Human protein kinase inhibitor p58 mRNA, complete cds	-0.221	-0.327	0.252	-0.115	-0.069	0.750	
R63912	Human protein kinase mRNA, complete cds	0.245	0.193	0.183	0.384	0.189	0.586	
AA890663	Human protein kinase PAK1 mRNA, complete cds	0.954	0.479	0.872	0.522	0.634	0.504	
AA284072	Human protein phosphatase (KAP1) mRNA, complete cds	0.566	0.424	0.149	0.580	0.006	0.938	
H15877	Human protein phosphatase 2A beta subunit mRNA, complete cds	0.447	0.117	0.421	0.061	0.210	1.032	
AA460827	Human protein phosphatase-1 inhibitor mRNA, complete cds	0.985	-0.597	0.263	0.293	-1.157	1.427	
AA019459	Human protein tyrosine kinase mRNA, complete cds	-0.119	0.341	-0.032	0.388	-0.037	-0.242	
AA430035	Human protein tyrosine kinase t-Ror1 (Ror1) mRNA, complete cds	-0.022	0.106	-1.133	-0.527	-0.038	0.667	
AA678180	Human protein tyrosine phosphatase 1E (PTP1E) mRNA, complete cds	0.800	1.006	0.068	0.297	0.805	0.463	
W65461	Human protein tyrosine phosphatase mRNA, complete cds	-0.233	0.046	0.310	0.178	0.246	0.563	
R79062	Human protein tyrosine phosphatase mRNA, complete cds	0.278	0.398	0.294	0.448	0.282	0.517	
R61007	Human protein tyrosine phosphatase PTPCAAX1 (hPTPCAAX1) mRNA, complete cds	-0.197	0.120	0.228	0.709	0.145	-0.084	
AA599145	Human protein ZW10 homolog (HZW10) mRNA, complete cds	0.695	0.291	0.386	1.262	0.115	0.871	
AA454652	Human proteinase-activated receptor-2 mRNA, complete cds	-0.610	0.182	0.688	0.045	-0.087	0.124	
AA504327	Human protein-tyrosine phosphatase (HU-PP-1) mRNA, partial sequence	0.628	0.629	0.890	0.647	-0.100	0.379	
H97140	Human protein-tyrosine phosphatase mRNA, complete cds	0.313	0.764	0.860	0.939	0.359	0.032	
AA443558	Human protocadherin 42 mRNA, complete cds for abbreviated PC42	-0.247	-0.320	0.123	0.181	-0.102	-0.489	
R89615	Human protocadherin 43 mRNA, complete cds for abbreviated PC43	0.132	-0.640	-0.369	-0.542	0.055	0.079	
AA629603	Human PTP11-associated RhoGAP mRNA, complete cds	0.408	0.223	0.160	0.605	0.361	-0.009	
AA641555	Human putative 32kDa heart protein PPH32 mRNA, complete cds	-0.171	0.767	0.315	0.432	0.220	-0.909	
W65411	Human putative astrocytic NOVA-like RNA-binding protein (ANOVA) mRNA, partial cds	-0.528	0.196	-0.122	0.052	-0.481	-0.812	
AA700336	Human putative ATP/GTP-binding protein (HEAB) mRNA, complete cds	0.684	1.293	0.842	0.671	0.588	0.693	
H10054	Human putative cerebral cortex transcriptional regulator T-Brain-1 (Tbr-1) mRNA, complete cds	0.661	0.947	0.478	0.906	0.286	-0.142	
R76281	Human putative copper uptake protein (hCTR2) mRNA, complete cds	0.356	0.103	0.250	0.699	0.209	0.062	
R93328	Human putative endothelin receptor type B-like protein mRNA, complete cds	-0.316	-0.417	-0.588	-0.590	-0.550	-0.028	
R66426	Human putative endothelin receptor type B-like protein mRNA, complete cds	-0.745	-0.031	-0.782	-0.655	0.029	-1.203	
AA485685	Human putative EPH-related PTK receptor ligand LERK-8 (Eplg8) mRNA, complete cds	0.052	0.086	0.168	0.060	0.219	0.630	
AA464711	Human putative G protein-coupled receptor (AZ3B) mRNA, complete cds	-0.629	-0.395	-0.173	-0.351	-0.334	0.578	
AA521469	Human putative G-protein (GP-1) mRNA, complete cds	1.137	0.946	0.785	1.047	-0.245	1.332	
AA281549	Human putative holocytochrome c-type synthetase mRNA, complete cds	0.211	0.285	0.123	0.055	-0.115	1.114	
AA454732	Human putative IL-16 protein precursor, mRNA, complete cds	-0.264	-0.340	-0.120	-0.152	-0.403	0.266	
AA454813	Human putative interferon-related protein (SM15) mRNA, partial cds	0.455	0.871	0.600	0.592	0.080	0.756	
AA282936	Human putative M phase phosphoprotein 1 (MPP1) mRNA, partial cds	-0.423	0.213	-0.057	-0.199	0.455	0.918	
AA136566	Human putative M phase phosphoprotein 2 (MPP2) mRNA, complete cds	-0.083	0.074	0.210	-0.136	0.303	0.441	
AA844935	Human putative mono-ADP-ribosyltransferase (hMART) mRNA, complete cds	-0.197	0.167	0.227	0.020	0.099	0.851	
R73608	Human putative mono-ADP-ribosyltransferase (MCT) mRNA, complete cds	-0.626	-0.124	-0.561	-0.223	-0.145	1.189	
AA457118	Human putative monocarboxylate transporter 34 kDa translocase hTOM34 mRNA, complete cds	-0.646	-0.501	-0.411	-0.361	-0.589	0.911	
AA857343	Human putative outer mitochondrial membrane 34 kDa translocase hTOM34 mRNA, complete cds	0.454	0.466	-0.223	-0.206	0.050	0.216	
AA054287	Human putative RNA binding protein RNPL mRNA, complete cds	-0.035	0.153	0.173	0.465	0.034	0.913	
AA489234	Human putative serine/threonine protein kinase PRK (prk) mRNA, complete cds	-0.091	0.087	0.380	-0.012	-0.179	1.087	
H11720	Human putative splice factor transformer-2-beta mRNA, complete cds	-0.695	-0.349	-0.284	-0.142	-0.084	0.511	
R56149	Human putative splice factor transformer-2-beta mRNA, complete cds	0.279	0.237	-0.225	0.846	-0.370	0.287	
AA482489	Human putative transmembrane receptor IL-1Rr mRNA, complete cds	0.444	-0.150	1.115	0.578	0.144	0.723	
W95450	Human putative transmembrane receptor IL-1Rr mRNA, complete cds	-0.165	-0.108	-0.281	0.148	-0.713	0.647	
W73892	Human putative tRNA suppressor (LUCA15) mRNA, complete cds	-0.414	-0.457	0.047	-0.137	0.310	0.002	
H65676	Human putative tumor suppressor (SNC8) mRNA, complete cds	-1.193	-0.342	-0.586	-0.721	-0.269	0.008	
H52729	Human PVP2H protein mRNA, complete cds	-0.211	-0.198	-0.266	-0.023	-0.412	1.145	
AA158035	Human pyridoxal kinase mRNA, complete cds	-0.180	-0.063	0.076	0.272	0.332	1.084	
H11348	Human pyridoxal kinase mRNA, complete cds	0.044	-0.083	0.528	0.314	-0.060	0.971	
R23735	Human pyridoxal kinase mRNA, complete cds	-0.200	-0.137	0.902	-0.073	0.132	0.639	
H82236	Human RACH1 (RACH1) mRNA, complete cds	0.708	-0.146	0.108	0.543	0.154	0.815	
W84445	Human Rad mRNA, complete cds	0.327	0.155	0.063	0.455	0.042	-0.263	
H99196	Human Rad50 (Rad50) mRNA, complete cds	-0.294	-0.212	-0.602	-0.279	-0.591	0.587	
H18201	Human Rad guanine nucleotide dissociation stimulator mRNA, partial cds	0.329	0.624	-0.069	0.338	0.177	0.769	
AA401972	Human RadGDS-like 2 (RGL2) mRNA, partial cds	0.216	0.305	0.118	0.365	0.237	1.051	
W32474	Human rap2 mRNA for ras-related protein	0.482	0.338	0.259	0.223	0.331	0.807	
T60070	Human Ras protein mRNA, complete cds	0.513	0.508	0.041	0.341	0.149	1.495	
R83224	Human ras inhibitor mRNA, 3' end	0.303	0.223	0.177	0.307	0.547	0.855	
AA291556	Human ras inhibitor mRNA, 3' end	0.324	-0.048	0.070	0.473	0.371	1.068	
W32272	Human RasGAP-related protein (IQGAP2) mRNA, complete cds	-0.181	-0.235	-0.283	-0.663	-0.425	0.993	
AA626787	Human ras-related C3 botulinum toxin substrate (rac) mRNA, complete cds	0.269	-0.236	0.070	0.174	0.439	1.115	
AA626178	Human ras-related small GTP binding protein Rab5 (rab5) mRNA, complete cds	-0.006	0.179	0.090	0.728	0.233	0.666	
N70362	Human RecA-like protein (hREC2) mRNA, complete cds	0.207	0.538	0.024	0.324	0.489	0.276	
R53998	Human receptor mRNA, complete cds	0.223	0.190	-0.579	-0.518	0.556	0.921	
AA778663	Human receptor 4-1BB ligand mRNA, complete cds	0.488	0.367	0.250	0.148	0.590	0.570	
AA644448	Human receptor protein tyrosine phosphatase hPTP-J precursor, mRNA, complete cds	-0.092	0.140	-0.148	0.004	-0.124	0.762	
R45102	Human reelin (RELN) mRNA, complete cds	-0.038	-0.297	-0.231	-0.398	0.022	0.997	
H24326	Human regulator of G-protein signaling similarity (RGST) mRNA, partial cds	0.429	0.316	0.113	1.199	-0.117	0.268	
N62873	Human renal cell carcinoma antigen RAGE-1 mRNA, complete putative cds	-0.380	-0.140	-0.256	-0.281	0.427	0.704	
AA496782	Human requiem (HREQ) mRNA, complete cds	0.742	1.346	-0.099	0.024	0.083	0.683	
AA458807	Human retinal protein (HRGA) mRNA, complete cds	0.083	0.014	0.115	-0.198	-0.075	0.381	
N95563	Human retinoic acid- and interferon-inducible 58K protein R158 mRNA, complete cds	-0.046	0.856	-0.364	-0.537	-0.089	1.172	
AA865464	Human retinoic acid induced RIG-E precursor (E) mRNA, complete cds	0.589	0.182	-0.374	-0.393	0.162	1.162	
W96099	Human retinoid X receptor-gamma mRNA, complete cds	-0.435	0.318	-0.574	-0.342	-0.556	0.578	
AA007419	Human RGP4 mRNA, complete cds	0.419	0.268	0.635	0.720	0.361	-0.206	
T57805	Human Rho-associated, coiled-coil containing protein kinase p160ROCK mRNA, complete cds	-0.027	0.576	0.078	0.696	0.546	0.404	
AA701545	Human ribonuclease k6 precursor gene, complete cds	-0.070	0.372	0.128	0.005	0.396	-0.115	
AA434088	Human ribosomal protein L10 mRNA, complete cds	0.089	-0.146	0.990	0.925	-0.372	-0.005	
AA625634	Human ribosomal protein L35 mRNA, complete cds	0.015	0.065	0.182	0.331	0.312	0.864	
W84472	Human ribosomal protein S6 mRNA, complete cds	0.487	-0.390	0.389	0.337	-0.024	0.716	
AA425947	Human RIG mRNA, complete sequence	0.196	-0.296	-0.214	-0.314	0.146	0.822	
AA085619	Human RLIP76 protein mRNA, complete cds	-0.009	-0.154	-0.080	-0.175	-0.117	1.548	
AA047257	Human RNA binding protein Etr-3 mRNA, complete cds	0.328	0.359	0.239	0.047	0.456	-0.187	
AA191245	Human RNA polymerase II elongation factor ELL2, complete cds	-0.542	-0.295	-0.306	-0.295	-0.418	0.807	
AA130633	Human RNA polymerase II holoenzyme component SRB7 (SRB7) mRNA, complete cds	-0.333	-0.002	0.273	-0.040	-0.036	1.023	
AA873691	Human RNA polymerase II subunit (hsRPB10) mRNA, complete cds	-0.592	-0.308	-0.003	-0.552	-0.587	1.226	
H15431	Human RNA polymerase II subunit hsRPB4 mRNA, complete cds, and ribosomal protein S26 pseudocd	1.148	-0.579	1.357	0.135	1.424	0.468	
AA477428	Human RNA polymerase II subunit hsRPB7 mRNA, complete cds	0.179	0.006	0.828	-0.317	0.295	0.681	
AA282063	Human RNA polymerase III subunit (RPC62) mRNA, complete cds	0.413	0.228	0.103	-0.193	0.428	1.202	
R15111	Human RNA-binding protein CUG-BP/hNab50 (NAB50) mRNA, complete cds	-0.565	-0.160	0.042	-0.061	-0.461	1.233	
AA458957	Human RNaseP protein p30 (RPP30) mRNA, complete cds	0.258	0.269	0.098	0.192	0.107	1.425	
AA185036	Human Ro/SSA ribonucleoprotein homolog (RoRet) mRNA, complete cds	-0.035	-0.183	-0.146	-0.079	-0.263	0.509	
AA398011	Human RP3 mRNA, complete cds	-0.234	-0.092	-0.039	0.094	-0.296	1.215	
AA235332	Human RSU-1/RSP-1 mRNA, complete cds	0.198	0.377	0.111	0.221	-0.094	1.252	
AA456109	Human scaffold protein Pbp1 mRNA, complete cds	-0.240	0.356	-0.071	-0.092	0.399	0.805	
AA677254	Human scavenger receptor cysteine rich Sp alpha mRNA, complete cds	0.127	-0.133	-0.010	-0.197	-0.086	2.177	
AA708161	Human scr3 mRNA for RNA binding protein SCR3, complete cds	-0.150	0.390	-0.096	0.136	-0.079	2.193	
AA464957	Human Sec7p-like protein mRNA, partial cds	-0.227	-0.093	0.101	0.342	0.174	0.010	
AA669136	Human SEF2-1A protein (SEF2-1A) mRNA, 5' end	0.547	0.752	0.197	0.281	0.660	-0.010	
AA488081	Human selenium donor protein (selD) mRNA, complete cds	0.356	0.676	0.695	0.510	0.800	-0.090	
T65736	Human selenium-binding protein (hSBP) mRNA, complete cds	-0.540	-0.255	-0.283	-0.399	-0.695	0.281	
AA283629	Human selenoprotein W (selW) mRNA, complete cds	-0.227	-0.209	-0.107	0.225	-0.606	0.939	
N50444	Human semaphorin (CD100) mRNA, complete cds	-0.525	0.291	-0.020	-0.167	0.190	1.317	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA455145	Human semaphorin V mRNA, complete cds	-0.416	0.280	-0.152	-0.081	0.241	-0.026	
AA630604	Human serine kinase mRNA, complete cds	0.721	-0.040	0.468	0.397	1.957	-0.084	
AA427740	Human serine/threonine kinase mRNA, partial cds	0.113	0.568	-0.065	0.465	0.153	-0.309	
N54551	Human serine-threonine phosphatase (PP5) mRNA, partial cds	0.978	0.619	0.248	0.002	1.014	0.619	
AA757429	Human serotonin N-acetyltransferase mRNA, complete cds	0.076	0.095	-0.216	-0.190	-0.355	0.923	
N35241	Human ser-thr protein kinase PK428 mRNA, complete cds	0.043	0.397	0.083	0.119	0.156	1.226	
AA496795	Human SH3 domain-containing protein SH3P17 mRNA, complete cds	0.828	1.139	0.470	-0.118	0.526	1.221	
N94713	Human SH3 domain-containing protein SH3P18 mRNA, complete cds	0.161	0.075	0.551	0.222	0.513	0.479	
AA398366	Human SH3-containing protein EEN mRNA, complete cds	-0.262	0.275	-0.455	0.189	-0.200	0.841	
AA458661	Human short-chain alcohol dehydrogenase (XH98G2) mRNA, complete cds	-0.186	0.220	0.000	-0.129	0.286	0.176	
AA630094	Human shah binding protein 1 (ShahBP1) mRNA, partial cds	0.472	0.669	0.011	0.860	0.264	0.607	
H19111	Human sialyltransferase (STX) mRNA, complete cds	0.774	0.595	-0.146	0.783	0.794	0.804	
AA497051	Human sialyltransferase STHM (sthm) mRNA, complete cds	0.035	0.051	0.000	0.075	0.134	1.090	
W47485	Human sigma receptor mRNA, complete cds	0.018	0.055	-0.008	-0.255	0.019	1.120	
AA488622	Human signal transducing adaptor molecule STAM mRNA, complete cds	0.302	0.137	0.340	0.234	0.394	0.486	
AA504624	Human signaling inositol polyphosphate 5 phosphatase SIP-110 mRNA, complete cds	-0.458	0.127	-0.367	-0.330	-0.299	0.370	
AA458996	Human signaling lymphocytic activation molecule (SLAM) mRNA, complete cds	1.162	0.473	0.338	0.577	0.745	0.824	
N68166	Human signal-transducing quinine nucleotide-binding regulatory (G) protein beta subunit mRNA, complete cds	0.093	0.063	0.056	0.458	0.819	0.703	
N64862	Human SLP-76 associated protein mRNA, complete cds	0.083	0.396	-0.167	0.232	0.647	0.313	
AA496780	Human small GTP binding protein Rab7 mRNA, complete cds	0.696	0.577	0.743	0.481	0.629	0.739	
H98534	Human small GTP binding protein Rab9 mRNA, complete cds	0.604	0.702	-0.072	0.482	0.774	1.012	
AA399674	Human small proline rich protein (sprl) mRNA, clone 1292	0.351	0.165	0.141	0.140	0.697	0.683	
H16824	Human Smg GDS-associated protein SMAP mRNA, complete cds	-0.628	-0.182	-0.353	-0.310	0.208	0.980	
AA457731	Human SNARE protein Ykt6 (YKT6) mRNA, complete cds	0.248	0.406	0.400	1.118	0.275	0.949	
AA489246	Human SNC19 mRNA sequence	0.165	0.417	0.393	-0.104	-0.057	0.613	
AA487575	Human Snk interacting protein 2-28 mRNA, complete cds	0.647	1.154	0.388	0.561	0.554	1.077	
T62529	Human SnRNP core protein Sm D2 mRNA, complete cds	-0.162	0.953	-0.355	-0.277	-0.334	0.694	
H60423	Human sodium phosphate transporter (NPT3) mRNA, complete cds	0.380	0.171	0.165	0.238	0.411	0.818	
AA858296	Human sodium phosphate transporter (NPT4) mRNA, complete cds	-0.499	-0.506	-0.944	-0.727	-0.267	0.936	
R51912	Human somatostatin I gene and flanks	-0.050	-0.193	0.177	-0.076	-0.729	-0.708	
AA699361	Human spliceosomal protein (SAP 49) gene, complete cds	-0.140	0.207	-1.058	-0.896	-0.016	0.410	
AA633757	Human spliceosome associated protein (SAP 145) mRNA, complete cds	0.943	0.651	1.021	1.971	1.326	0.742	
R43015	Human spliceosomal protein (SAP 61) mRNA, complete cds	0.037	0.109	0.008	-0.132	0.173	0.526	
AA491213	Human splicing factor SRp30c mRNA, complete cds	0.083	0.196	0.245	0.155	0.289	0.769	
AA58965	Human splicing factor SRp40-1 (SRp40) mRNA, complete cds	-0.110	0.160	0.185	0.420	-0.297	0.923	
AA169645	Human splicing factor SRp55-2 (SRp55) mRNA, complete cds	-0.003	0.034	0.357	0.013	-0.014	0.083	
AA182847	Human SPS1/STE20 homolog KHS1 mRNA, complete cds	0.027	0.488	0.091	0.045	0.476	0.169	
H53703	Human squamous cell carcinoma of esophagus mRNA for GRB-7 SH2 domain protein, complete cds	-0.521	-0.071	-0.010	-0.478	-0.282	0.149	
AA485141	Human Src-like adapter protein mRNA, complete cds	-0.191	-0.195	0.378	-0.004	-0.195	0.251	
AA425823	Human SREBP-1 mRNA, complete cds	-0.062	0.133	0.198	0.246	-0.227	0.751	
AA464529	Human Ste20-like kinase (MST2) mRNA, complete cds	-0.243	0.117	-0.096	-0.033	0.347	0.866	
H05935	Human sterol 27-hydroxylase (CYP27) mRNA, complete cds	0.410	0.090	0.092	-0.183	-0.071	-0.116	
H05935	Human sterol 27-hydroxylase (CYP27) mRNA, complete cds	0.738	0.897	0.072	0.090	0.325	-0.079	
AA701914	Human sterol regulatory element binding protein-2 mRNA, complete cds	-1.135	0.052	-0.160	-1.380	-1.002	-0.145	
AA596337	Human stimulator of TAR RNA binding (SRB) mRNA, complete cds	0.331	0.355	0.085	0.087	0.560	0.023	
T95014	Human stress responsive serine/threonine protein kinase Krs-2 mRNA, complete cds	0.223	0.282	-0.153	0.139	0.297	0.586	
AA045500	Human stromelysin-3 mRNA	0.453	0.485	0.453	0.661	0.005	0.681	
R40897	Human succinyl CoA:3-oxoacyl CoA transferase precursor (OXCT) mRNA, complete cds	0.587	0.599	0.249	0.233	0.610	0.022	
AA463642	Human sulfite oxidase mRNA, complete cds	0.418	0.464	-0.003	-0.034	0.528	-0.082	
W89655	Human sulfotransferase mRNA, complete cds	-0.170	0.144	0.071	0.548	-0.169	-0.916	
R52548	Human superoxide dismutase (SOD-1) mRNA, complete cds	-0.004	-0.318	-0.071	-0.409	-0.048	-0.296	
R52548	Human superoxide dismutase (SOD-1) mRNA, complete cds	0.014	-0.183	-0.079	-0.287	-0.222	-0.055	
AA485355	Human suppressor of cytokine signalling-1 (SOCS-1) mRNA, complete cds	0.643	0.585	-0.154	0.351	0.237	0.484	
R73545	Human surface antigen mRNA, complete cds	0.474	0.232	0.243	0.362	0.863	0.223	
AA449715	Human sushi-repeat-containing protein precursor (SRPX) mRNA, complete cds	-0.425	0.028	0.312	0.719	0.071	-0.032	
AA872122	Human SWI/SNF complex 155 kDa subunit (BAF155) mRNA, complete cds	-0.807	-0.509	-0.461	-0.561	-0.287	-0.459	
H24688	Human SWI/SNF complex 170 kDa subunit (BAF170) mRNA, complete cds	-0.493	-0.993	-1.256	-1.305	-0.679	0.082	
H91691	Human SWI/SNF complex 60 kDa subunit (BAF60a) mRNA, alternatively spliced, complete cds	0.252	0.255	0.360	0.132	0.134	-0.337	
AA478436	Human SWI/SNF complex 60 kDa subunit (BAF60b) mRNA, complete cds	-0.445	-0.024	0.767	0.768	0.533	0.144	
AA053810	Human SWI/SNF complex 60 kDa subunit (BAF60c) mRNA, complete cds	-0.355	-0.075	-0.012	-0.108	-0.084	0.686	
W74377	Human symplekin mRNA, complete cds	0.631	0.632	0.372	0.146	0.388	0.763	
AA488635	Human synaptobrevin-3 mRNA, complete cds	0.167	0.255	0.319	0.750	0.313	0.608	
H15539	Human syntaxin 1A mRNA, complete cds	0.213	1.649	-0.279	0.073	-0.157	-0.078	
AA436871	Human syntaxin 3 mRNA, complete cds	-0.144	-0.025	0.158	0.521	0.115	-0.467	
T71551	Human syntaxin 7 mRNA, complete cds	0.467	0.608	0.270	0.127	0.773	-0.287	
R3732931	Human syntaxin mRNA, complete cds	-0.355	-0.002	-0.169	-0.152	0.661	0.063	
R37743	Human T54 protein (T54) mRNA, complete cds	0.069	-0.141	-0.254	0.083	0.365	-0.021	
W88884	Human TAR DNA-binding protein-43 mRNA, complete cds	-0.439	-0.624	-0.743	-1.424	-0.777	-0.134	
AA436409	Human TAR RNA binding protein (TRBP) mRNA, complete cds	0.627	0.004	0.089	1.020	0.824	-0.741	
N62244	Human TAR RNA loop binding protein (TRP-185) mRNA, complete cds	1.064	0.367	1.115	0.449	0.578	-0.848	
H94949	Human tatin mRNA, complete cds	0.275	0.403	0.121	0.215	0.301	-0.444	
AA017043	Human tat interactive protein mRNA, complete cds	0.448	0.440	0.262	0.234	0.425	-0.115	
AA235706	Human TATA-binding protein associated factor 30 kDa subunit (tafi30) mRNA, complete cds	-0.141	-0.184	-0.235	-0.272	-0.113	-0.464	
AA857131	Human Tat-SF1 mRNA, complete cds	-0.340	0.049	0.120	0.341	0.315	0.189	
AA598483	Human tax1-binding protein TXBP151 mRNA, complete cds	0.266	0.135	0.434	0.042	0.460	-0.927	
AA718910	Human tax1-binding protein TXBP181 mRNA, complete cds	-0.090	-0.094	0.071	0.604	-0.388	-1.033	
AA482067	Human tazarotene-induced gene 2 (TIG2) mRNA, complete cds	0.258	0.268	0.137	0.034	0.255	-0.323	
H11501	Human TB1 gene mRNA, 3' end	0.492	0.813	0.229	0.381	0.508	0.121	
AA487148	Human TBP-associated factor (hTAFII130) mRNA, partial cds	0.858	1.017	0.251	0.537	0.704	-0.661	
H11763	Human TBP-associated factor TAFII80 mRNA, complete cds	-0.188	0.977	-0.336	0.262	-0.042	-0.322	
R87763	Human telencephalin precursor mRNA, complete cds	-0.339	0.295	0.182	-0.044	0.184	0.968	
AA504844	Human terminal transferase mRNA, complete cds	1.766	0.275	1.268	1.181	1.856	0.008	
AA291773	Human tetracycline transporter-like protein mRNA, complete cds	-0.561	-0.473	-0.123	-0.325	-0.024	-0.361	
AA291718	Human tetratricopeptide repeat protein (tpr1) mRNA, complete cds	0.280	0.032	0.605	0.325	0.483	0.074	
H09811	Human tetratricopeptide repeat protein (tpr2) mRNA, complete cds	0.442	0.326	0.131	0.010	0.274	-0.210	
T55801	Human TFIIA gamma subunit mRNA, complete cds	0.778	0.852	0.236	0.430	0.541	-0.745	
AA453787	Human TFIIB related factor hBRF (hBRF) mRNA, complete cds	0.185	0.357	-0.267	0.216	-0.125	1.152	
AA063580	Human TFIID subunit TAFII55 (TAFII55) mRNA, complete cds	-0.280	0.584	0.101	0.156	0.970	0.234	
AA045588	Human TFIID subunits TAF20 and TAF15 mRNA, complete cds	-0.194	0.411	0.081	-0.027	0.805	-0.298	
AA843718	Human TFIIC Box B-binding subunit mRNA, complete cds	0.027	0.319	0.278	0.373	0.508	0.420	
AA481279	Human Tg737 mRNA, complete cds	0.764	0.931	0.211	0.438	0.446	0.509	
R79935	Human TGF-beta inducible early protein (TIEG) mRNA, complete cds	-0.186	-0.230	-0.033	-0.532	-0.296	-0.441	
AA029497	Human thymidine kinase 2 (TK2) mRNA, complete cds	0.290	-0.070	0.355	0.157	0.192	0.833	
AA634103	Human thymosin beta-4 mRNA, complete cds	0.798	0.389	0.276	0.082	0.192	0.039	
R01238	Human tip associating protein (TAP) mRNA, complete cds	0.119	0.575	0.223	-0.009	0.376	0.389	
AA456295	Human TNF receptor associated factor 6 (TRAF6) mRNA, complete cds	-0.245	0.192	0.330	0.235	0.708	0.650	
H54629	Human TNF-related apoptosis inducing ligand TRAIL mRNA, complete cds	-0.699	-0.144	-0.648	-0.670	-0.275	0.163	
T57791	Human Toll-like receptor 2 (TLR2) mRNA, complete cds	0.281	0.060	0.416	0.339	0.265	-0.054	
R76099	Human Toll-like receptor 3 (TLR3) mRNA, complete cds	-0.530	0.270	-0.184	-0.415	0.200	-0.006	
N41021	Human Toll-like receptor 5 (TLR5) mRNA, partial cds	0.600	-0.179	-0.016	0.849	1.128	0.124	
R60160	Human topoisomerase I mRNA, complete cds	1.045	0.176	-0.009	-0.220	1.178	0.054	
R60160	Human topoisomerase I mRNA, complete cds	0.179	0.458	0.212	-0.025	0.178	0.054	
AA134814	Human TRAF-interacting protein I-TRAF mRNA, complete cds	0.365	0.283	0.369	-0.018	0.202	1.018	
AA035144	Human transcription factor (MEF2) mRNA, complete cds	0.593	0.700	0.235	-0.542	-0.541	0.102	
AA394236	Human transcription factor ERF-1 mRNA, complete cds	0.332	0.477	0.273	0.183	0.549	0.061	
AA496359	Human transcription factor ETR101 mRNA, complete cds	0.387	0.325	0.266	0.563	0.475	-0.117	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
H77652	Human transcription factor hGATA-6 mRNA, complete cds	0.371	0.584	-0.025	0.239	0.943	0.457	
T72202	Human transcription factor IL-4 Stat mRNA, complete cds	0.477	0.578	0.186	0.350	0.332	0.362	
AA488618	Human transcription factor LSF mRNA, complete cds	0.074	0.148	0.120	-0.211	0.137	0.390	
AA490903	Human transcription factor mRNA, complete cds	-0.121	-0.021	0.087	-0.382	0.340	0.251	
AA402487	Human transcription factor NFATx mRNA, complete cds	0.353	0.450	0.082	0.003	0.547	-0.469	
W74602	Human transcription factor RTEF-1 (RTEF1) mRNA, complete cds	0.156	0.342	-0.203	0.223	0.103	-0.582	
AA069372	Human transcription factor, forkhead related activator 4 (FREAC-4) mRNA, complete cds	-0.074	0.221	-0.304	0.127	0.187	0.379	
AA150301	Human transcription initiation factor TFIID subunit TAFII31 mRNA, complete cds	-0.089	0.157	0.056	-0.197	0.300	0.418	
H05655	Human transcriptional activator mRNA, complete cds	0.210	0.085	-0.026	-0.284	0.303	0.599	
AA099534	Human transcriptional coactivator PC4 mRNA, complete cds	-0.484	0.101	-0.490	-0.317	-0.701	0.123	
AA127093	Human transcriptional regulator homolog RPD3 mRNA, complete cds	-0.615	-0.115	-0.472	-0.317	-0.348	-0.831	
H89996	Human transcriptional repressor (CTCF) mRNA, complete cds	0.334	0.291	0.142	0.030	0.662	-0.398	
AA488645	Human transcriptional repressor (NAB1) NAB1 mRNA, complete cds	-0.122	0.268	0.470	0.118	-0.031	-0.362	
AA496630	Human transducin-like enhancer protein (TLE3) mRNA, complete cds	-1.068	-0.970	-1.103	-1.406	-0.364	0.275	
AA394130	Human transducin-like protein mRNA, complete cds	0.629	0.416	0.140	0.105	0.873	0.741	
R09691	Human transformin-2 alpha (htra-2 alpha) mRNA, complete cds	0.436	0.327	0.007	-0.010	0.426	-0.514	
AA779457	Human transforming growth factor-beta 2 beta subunit (tgf-beta) mRNA, complete cds	0.142	0.358	0.148	0.343	0.533	0.154	
AA156324	Human transglutaminase mRNA, 3' untranslated region	-0.723	-1.258	-0.607	-1.137	-0.398	0.360	
W60015	Human translation initiation factor eIF-2alpha mRNA, 3'UTR	0.532	0.488	0.289	0.077	0.663	-1.005	
AA598863	Human translation initiation factor eIF-3 p110 subunit gene, complete cds	0.024	0.165	0.379	0.566	-0.051	-0.103	
R54097	Human translational initiation factor 2 beta subunit (eIF-2-beta) mRNA, complete cds	0.355	0.363	0.375	0.187	0.356	0.143	
R54097	Human translational initiation factor 2 beta subunit (eIF-2-beta) mRNA, complete cds	0.299	0.480	0.185	0.013	0.347	0.047	
R93621	Human translational initiation factor 2 beta subunit (eIF-2-beta) mRNA, complete cds	-0.210	0.458	0.015	0.103	0.377	1.178	
R45413	Human transmembrane 4 superfamily protein (SAS) mRNA, complete cds	0.138	-0.245	0.226	-0.329	-0.223	0.733	
N94921	Human transmembrane receptor (ror2) mRNA, complete cds	-0.025	0.366	-0.199	0.334	0.691	0.626	
AA481087	Human transportin (TRN) mRNA, complete cds	0.350	0.171	0.271	0.775	0.382	0.254	
AA496800	Human transposon-like element mRNA	1.529	0.584	0.835	0.696	1.855	0.786	
AA404293	Human triadin mRNA, complete cds	0.238	0.228	0.421	0.099	0.400	0.254	
T65861	Human tRNA-guanine transglycosylase mRNA, complete cds	1.295	0.733	0.615	0.563	0.718	0.274	
AA598982	Human trophinin mRNA, complete cds	0.173	0.279	0.104	0.031	0.323	0.961	
T72398	Human tryptophan oxygenase (TDO) mRNA, complete cds	0.014	0.478	-0.053	0.071	0.154	0.874	
AA664389	Human TSC-22 protein mRNA, complete cds	0.411	0.263	0.312	0.201	0.462	0.462	
AA884015	Human tubby related protein 2 (TULP2) mRNA, complete cds	-0.196	0.055	0.268	0.068	0.004	0.253	
AA504618	Human tubulin-folding cofactor E mRNA, complete cds	0.443	0.109	0.204	0.424	0.513	-0.305	
AA497020	Human tumor necrosis factor type 1 receptor associated protein (TRAP1) mRNA, partial cds	0.578	0.271	0.299	0.444	0.120	-0.604	
T55353	Human tumor necrosis factor type 2 receptor associated protein (TRAP3) mRNA, complete cds	0.927	0.222	0.493	0.526	0.179	0.129	
AA670215	Human tumor susceptibility protein (TSG101) mRNA, complete cds	0.277	0.015	0.461	-0.121	0.236	1.044	
N62620	Human two P-domain K+ channel TWIK-1 mRNA, complete cds	0.474	0.218	-0.298	0.082	0.596	0.784	
T51849	Human tyrosine kinase (HTK) mRNA, complete cds	0.405	0.252	0.433	0.156	0.503	0.375	
AA486761	Human tyrosyl-tRNA synthetase mRNA, complete cds	0.645	0.124	0.682	0.338	0.556	-1.394	
R36571	Human U1 snRNP-specific protein A gene	-0.219	-0.356	-0.019	0.139	-0.416	-0.431	
R36571	Human U1 snRNP-specific protein A gene	0.256	-0.409	-0.139	-0.244	-0.693	-0.726	
T67521	Human U2AF1-RS2 mRNA, complete cds	-0.321	-0.049	-0.225	-0.176	0.192	1.393	
AA464729	Human ubiquitin carrier protein (E2-EPF) mRNA, complete cds	0.484	0.501	-0.008	0.168	0.244	1.250	
T57841	Human ubiquitin fusion-degradation protein (UFD1L) mRNA, complete cds	1.640	0.410	0.080	0.033	0.826	0.910	
AA454143	Human ubiquitin protease (Uphf) proto-oncogene mRNA, complete cds	0.153	-0.131	0.262	0.308	0.478	0.326	
R61332	Human ubiquitin-activating enzyme E1 (UBE1) mRNA, complete cds	0.322	0.957	0.290	0.163	0.520	-0.848	
R61332	Human ubiquitin-activating enzyme E1 (UBE1) mRNA, complete cds	0.234	0.621	0.367	0.196	0.115	-0.389	
AA488626	Human ubiquitin-homology domain protein PIC1 mRNA, complete cds	0.848	-0.127	0.492	0.313	0.210	1.403	
AA046067	Human uridine diphosphoglucose pyrophosphorylase mRNA, complete cds	0.788	0.303	0.502	0.355	0.603	1.182	
T82469	Human uroporphyrinogen III synthase mRNA, complete cds	0.455	0.227	0.199	0.165	0.477	1.381	
T82469	Human uroporphyrinogen III synthase mRNA, complete cds	0.247	0.238	-0.079	-0.267	-0.086	0.913	
AA885433	Human vacuolar protein sorting homolog h-vps45 mRNA, complete cds	-0.118	-0.205	-0.052	0.452	-0.541	0.755	
H07899	Human vascular endothelial growth factor related protein VRP mRNA, complete cds	0.578	0.521	-0.123	0.250	0.235	0.282	
AA686180	Human v-erbA related ear-2 gene	0.373	-0.196	0.595	-0.559	0.198	0.570	
AA426341	Human VHL binding protein-1 (VBP-1) mRNA, partial cds	0.478	0.403	0.368	-0.051	0.813	0.777	
AA460728	Human voltage dependent anion channel form 3 mRNA, complete cds	0.824	0.150	-0.023	0.176	0.347	0.814	
R36947	Human voltage-gated calcium channel beta subunit mRNA, complete cds	-0.466	-0.244	-0.310	-0.691	-0.260	0.560	
AA725841	Human WD repeat protein HAN11 mRNA, complete cds	0.213	-0.447	-0.450	-0.185	0.143	0.903	
AA449975	Human WS-3 mRNA, complete cds	1.585	2.163	1.960	1.693	2.679	0.530	
W31391	Human X104 mRNA, complete cds	-0.090	0.207	-0.173	0.172	-0.046	1.105	
R55789	Human X11 protein mRNA, partial cds	0.123	0.189	0.071	-0.185	0.519	0.277	
T64865	Human X2 box repressor mRNA, complete cds	0.413	0.499	0.045	0.513	0.295	0.046	
AA425395	Human X-linked PEST-containing transporter (XPCT) mRNA, partial cds	0.591	0.466	0.079	-0.084	0.139	-0.506	
T86721	Human XMP mRNA, complete cds	0.210	0.062	0.266	0.151	0.923	0.065	
R49530	Human Xq28 cosmid, creatine transporter (SLC6A8) gene, complete cds, and CDM gene, partial cds	0.160	0.252	0.283	0.407	0.211	0.352	
R49530	Human Xq28 cosmid, creatine transporter (SLC6A8) gene, complete cds, and CDM gene, partial cds	0.431	0.591	-0.352	-0.058	0.176	0.242	
AA443950	Human YL-1 mRNA for YL-1 protein (nuclear protein with DNA-binding ability), complete cds	2.138	0.334	0.639	0.727	2.035	0.340	
W73810	Human YMP mRNA, complete cds	-0.304	-0.263	-0.800	-0.500	-0.008	0.318	
AA759082	Human YY1-associated factor 2 (YAF2) mRNA, complete cds	1.489	0.578	0.409	0.568	1.121	-0.227	
AA704613	Human zinc finger protein (MAZ) mRNA	-0.388	-0.509	-0.591	-0.511	-0.082	0.030	
AA001376	Human zinc finger protein (SRE-ZBP) mRNA, 3' end	-0.501	-1.201	-0.875	-1.176	-0.577	0.156	
W79396	Human zinc finger protein C2H2-25 mRNA, complete cds	0.567	0.559	0.467	0.272	0.399	0.037	
T47230	Human zinc finger protein mRNA, complete cds	1.081	0.080	0.195	-0.249	0.413	-0.116	
H99768	Human zinc finger protein RIZ mRNA, complete cds	0.003	-0.159	0.113	-0.319	-0.364	0.395	
AA418251	Human zinc finger protein PLAG1 mRNA, complete cds	0.655	0.147	0.007	0.283	-0.049	0.439	
W73060	Human zinc finger protein RIZ mRNA, complete cds	-0.012	-0.233	-0.622	-0.095	0.323	0.747	
H22826	Human zinc-finger domain-containing protein mRNA, partial cds	0.132	0.443	0.015	0.660	0.149	0.139	
AA457155	Human zinc-finger protein C2H2-150 mRNA, complete cds	0.107	-0.027	-0.697	-0.613	-0.509	-0.467	
AA055504	Human zinc-finger protein mRNA, complete cds	0.378	0.594	-0.170	0.108	-0.020	0.351	
R58985	Human Zn-15 related zinc finger protein (rif) mRNA, complete cds	0.302	0.166	-0.133	-0.370	0.406	0.563	
H20759	Human zyglin mRNA, complete cds	0.599	0.680	-0.007	0.036	0.421	0.500	
AA485677	Human zyxin related protein ZRP-1 mRNA, complete cds	0.670	0.756	0.095	0.063	0.482	0.797	
N93941	HUMMLC2A; Homo sapiens; 593 base-pairs	0.571	0.284	0.547	0.151	0.115	1.027	
AA454612	Huntingtin (Huntington disease)	0.433	0.396	0.185	0.080	0.751	1.902	
AA172109	Hyaluronan-mediated motility receptor (RHAMM)	0.080	0.426	0.557	1.060	-0.403	1.126	
AA916323	Hydroxacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydrat	0.211	-0.050	0.174	-0.136	0.844	0.501	
AA411202	Hydroxacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydrat	0.389	0.397	-0.119	0.162	0.713	0.558	
R68803	Hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 1	0.178	0.292	-0.032	0.474	0.111	0.936	
AA495858	Hydroxymethylbilane synthase	0.576	0.590	0.173	0.007	0.223	0.789	
W95082	Hydroxysteroid (11-beta) dehydrogenase 2	0.173	0.169	0.213	-0.076	0.989	0.968	
AA437291	Hydroxysteroid (17-beta) dehydrogenase 3	0.575	0.307	0.551	0.445	0.466	0.410	
N47312	Hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)	-0.710	-0.449	0.001	0.118	-0.122	0.231	
AA873762	HZF-16	-0.513	-0.086	-0.183	-0.143	0.073	0.505	
N62482	I factor (complement)	0.784	0.589	0.335	0.796	0.485	0.862	
H44953	ICH-2 PROTEASE PRECURSOR	0.519	0.525	0.359	0.335	0.313	1.064	
AA873599	Iduronate 2-sulfatase (Hunter syndrome)	0.215	0.379	0.013	0.180	0.500	0.704	
AA457705	IEX-1	-0.445	0.627	-0.750	-0.650	0.228	0.403	
H28469	IG ALPHA-2 CHAIN C REGION	0.570	0.530	-0.067	-0.133	0.362	0.343	
R39227	IK	0.305	0.618	0.060	0.154	0.760	0.299	
AA598611	IMMEDIATE-EARLY RESPONSE PROTEIN NOT	0.033	-0.267	-0.378	-0.797	-0.564	0.759	
N92646	Immunoglobulin gamma 3 (Gm marker)	0.423	0.084	0.059	-0.012	-0.283	1.030	
T70057	IMMUNOGLOBULIN J CHAIN	0.276	0.012	0.206	-0.051	0.238	-0.537	
T67053	Immunoglobulin lambda light chain	0.785	0.470	0.829	0.590	0.526	-0.248	
H73590	Immunoglobulin mu	0.627	0.757	0.150	0.106	0.184	0.473	
T68934	Immunoglobulin-associated alpha	1.149	0.547	0.881	0.630	0.526	0.379	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
R72079	Immunoglobulin-associated beta (B29)	0.126	0.301	0.227	0.034	0.865	0.526	
W73790	IMMUNOGLOBULIN-RELATED 14.1 PROTEIN PRECURSOR	0.510	0.542	0.195	1.179	0.195	0.851	
R52542	IMP (inosine monophosphate) dehydrogenase 1	-0.411	0.013	0.052	-0.230	0.189	-0.778	
AA478279	Indole 2,3-dioxygenase	-0.342	0.087	-0.189	-0.152	-0.025	-0.302	
N27159	Inhibin, beta A (activin A, activin AB alpha polypeptide)	0.011	-0.093	0.593	0.593	0.098	-0.546	
H82442	Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein	-0.104	-0.207	-0.389	0.123	0.112	0.221	
AA482119	Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein	0.218	0.024	-0.071	-0.126	0.895	0.323	
AA464856	Inhibitor of DNA binding 4, dominant negative helix-loop-helix protein	0.471	0.650	0.009	-0.036	0.113	0.581	
H18070	INITIATION FACTOR IF-2, MITOCHONDRIAL PRECURSOR	-0.121	0.484	0.152	-0.007	0.486	0.831	
AA701976	Inositol 1,4,5-trisphosphate receptor, type 3	0.376	0.271	-0.048	-0.255	0.434	-0.089	
R94153	Inositol 1,4,5-trisphosphate 3-kinase B	0.000	0.251	0.087	0.412	0.087	0.328	
AA279072	Inositol polyphosphate phosphatase-like protein 1 (51C protein)	0.706	1.189	0.176	0.103	0.599	0.264	
H52141	Inositol polyphosphate-1-phosphatase	-0.145	-0.120	0.254	0.132	0.186	0.156	
AA001614	Insulin receptor	-0.006	0.658	0.256	-0.005	-0.147	0.444	
AA456704	Insulin receptor substrate-1 [human, skeletal muscle, mRNA, 5828 nt]	0.096	0.082	0.463	-0.170	0.199	0.589	
W86199	INSULIN-DEGRADING ENZYME	1.481	0.816	1.193	1.484	0.413	0.784	
R16073	Insulin-like 4 (placenta)	0.092	0.146	0.179	0.491	-0.024	0.543	
AA456321	Insulin-like growth factor 1 (somatomedia C)	0.110	-0.092	0.087	0.324	-0.059	0.521	
AA256419	Insulin-like growth factor 1 receptor	0.958	0.613	0.384	0.476	0.807	0.382	
N74623	Insulin-like growth factor 2 (somatomedin A)	0.495	0.247	0.134	0.088	0.556	0.543	
T62547	Insulin-like growth factor 2 receptor	0.563	1.113	0.419	0.471	0.934	0.374	
AA233185	INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 1 PRECURSOR	-0.072	0.281	0.538	0.406	0.143	0.620	
H79047	Insulin-like growth factor binding protein 2 (36kD)	0.267	-0.027	0.416	0.279	-0.299	0.722	
AA598601	INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 3 PRECURSOR	0.165	0.566	0.090	0.145	0.362	0.608	
T52830	Insulin-like growth factor binding protein 5	0.452	0.317	-0.074	-0.137	0.565	0.607	
AA478724	Insulin-like growth factor binding protein 6	0.312	0.100	0.248	0.022	0.613	0.517	
R38640	Insulinoma-associated 1 (symbol provisional)	0.608	0.377	0.247	-0.210	0.885	0.499	
AA419177	INTEGRAL MEMBRANE PROTEIN E16	0.249	0.197	-0.416	0.150	-0.303	0.929	
R68805	Integral transmembrane protein 1	-0.326	-0.061	-0.065	-0.258	-0.112	0.452	
AA424695	Integrin alpha-3 subunit	0.841	0.658	0.049	0.062	0.743	0.405	
AA485668	Integrin beta-4 subunit	-0.257	-0.166	0.293	0.418	-0.415	-0.725	
AA434397	Integrin beta-5 subunit	-0.377	-0.469	0.034	0.064	-0.482	0.067	
AA463257	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)	-0.365	-0.242	0.126	0.396	-0.239	0.050	
H79341	Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)	-0.398	-0.059	-0.615	-0.646	0.104	-1.103	
R43483	Integrin, alpha 6	-0.558	0.470	-0.059	-0.449	-0.009	0.227	
AA055979	Integrin, alpha 7B	1.934	1.739	1.054	0.761	1.663	0.540	
AA425451	Integrin, alpha E (antigen CD103, human mucosal lymphocyte antigen 1; alpha polypeptide)	0.426	0.962	0.292	0.537	0.493	-0.212	
R48796	Integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide)	-0.270	-0.183	0.125	0.581	-0.144	-0.354	
AA436187	Integrin, alpha M (complement component receptor 3, alpha; also known as CD11b (p170), macrophage)	0.029	0.188	-0.144	-0.253	0.220	0.781	
AA029934	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)	0.173	0.270	0.024	-0.110	0.542	0.084	
N64384	Integrin, alpha X (antigen CD11C (p150), alpha polypeptide)	1.234	0.499	1.027	1.135	1.225	0.121	
W67174	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)	-0.568	-0.417	-0.033	0.174	-0.251	-0.312	
W68403	Integrin, beta 2 (antigen CD18 (p95), lymphocyte function-associated antigen 1; macrophage antigen 1)	-0.591	-0.475	-0.030	0.195	-0.434	0.707	
AA666269	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	0.210	-0.321	0.499	-0.162	-0.034	0.270	
AA037228	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	0.344	0.537	0.309	0.337	0.187	0.621	
W56754	Integrin, beta 8	1.317	-0.128	0.287	1.066	1.155	0.720	
R06580	INTER-ALPHA-TRYPsin INHIBITOR COMPLEX COMPONENT II PRECURSOR	-0.095	0.118	0.548	0.301	0.001	-0.006	
R77293	Interleukin 1 (CD54), human rhinovirus receptor	0.440	0.202	0.269	0.095	0.817	-0.083	
R21535	Interleukin 1 receptor	1.077	0.558	0.231	1.140	0.888	0.277	
AA479188	Interleukin 1 receptor	0.249	0.204	0.451	0.509	0.470	0.269	
AA485426	Interferon (alpha, beta and omega) receptor 2	0.139	0.104	0.267	0.237	0.138	0.277	
AA878880	Interferon (gamma)-induced cell line; protein 10 from	-0.125	0.143	0.815	-0.268	0.221	0.177	
T47815	INTERFERON GAMMA UP-REGULATED I-5111 PROTEIN PRECURSOR	2.149	0.497	1.067	0.456	1.467	0.533	
AA478043	Interferon regulatory factor 1	0.696	0.825	-0.115	0.258	0.326	0.328	
AA416883	Interferon regulatory factor 2	0.772	0.546	0.393	0.270	0.500	0.770	
AA825491	Interferon regulatory factor 4	-0.067	-0.281	0.100	0.290	-0.041	-0.234	
N30372	Interferon regulatory factor 5	0.290	0.187	-0.255	-0.017	-0.100	0.031	
AA157813	INTERFERON-ALPHA INDUCED 11.5 KD PROTEIN	0.284	0.540	-0.815	0.280	-0.008	0.497	
N59150	INTERFERON-ALPHA/BETA RECEPTOR ALPHA CHAIN PRECURSOR	0.389	0.568	0.253	0.434	1.147	0.271	
H11482	INTERFERON-GAMMA RECEPTOR ALPHA CHAIN PRECURSOR	-0.221	-0.057	0.512	0.414	0.283	0.295	
AA406020	INTERFERON-INDUCED 17 KD PROTEIN	-0.013	0.334	-0.108	-0.037	0.169	0.358	
N63988	INTERFERON-INDUCED 54 KD PROTEIN	0.196	0.422	0.063	-0.119	0.415	0.511	
W72748	INTERFERON-INDUCED GUANYLATE-BINDING PROTEIN 2	0.147	0.240	0.325	0.369	0.491	0.032	
AA489640	Interferon-inducible 56-KDa protein	0.559	0.472	0.290	0.464	0.359	0.438	
AA862371	INTERFERON-INDUCIBLE PROTEIN 1-8D	0.008	-0.138	0.036	-0.380	-0.302	-0.008	
AA484417	INTERFERON-INDUCIBLE PROTEIN 1-8U	0.184	-0.164	0.101	0.134	0.499	-0.072	
AA419251	INTERFERON-INDUCIBLE PROTEIN 9-27	0.453	0.510	0.405	0.016	0.548	0.227	
T72877	Interleukin 1 receptor antagonist	-0.002	0.197	0.203	0.497	0.172	0.545	
AA936768	Interleukin 1, alpha	0.462	0.737	0.487	0.183	0.548	0.402	
AA150507	Interleukin 1, beta	1.622	1.661	0.361	-0.289	1.937	1.310	
AA437226	Interleukin 10 receptor	-0.073	-0.576	-0.263	-0.525	-0.394	0.390	
N59270	Interleukin 15	-0.743	0.530	-0.679	-1.189	0.051	0.163	
AA054754	Interleukin 15 receptor alpha chain	-0.194	0.211	0.129	0.680	0.045	0.666	
AA057204	Interleukin 2 receptor beta chain	-0.307	-0.045	-0.009	0.445	-0.305	0.441	
N54821	Interleukin 2 receptor gamma chain	0.722	0.450	0.539	0.360	0.413	0.332	
AA293306	Interleukin 4 receptor	-0.531	-0.467	-0.658	-0.359	-1.524	0.498	
N88591	Interleukin 6 (B cell stimulatory factor 2)	0.635	0.638	0.155	0.115	0.528	0.185	
AA485865	Interleukin 7 receptor	0.761	0.773	0.256	0.366	0.661	0.150	
AA102526	Interleukin 8	0.903	1.010	-0.119	0.494	1.041	0.016	
R56553	INTERLEUKIN ENHANCER-BINDING FACTOR	-0.231	-0.120	0.439	0.428	0.097	0.024	
T95052	INTERLEUKIN-1 BETA CONVERTASE PRECURSOR	-0.056	-0.054	-0.007	0.244	-0.214	0.925	
AA464526	INTERLEUKIN-1 RECEPTOR, TYPE I PRECURSOR	-0.428	-0.176	0.014	0.343	0.013	0.501	
H78386	INTERLEUKIN-1 RECEPTOR, TYPE II PRECURSOR	-0.205	0.109	0.658	1.291	-0.125	0.102	
AA464528	INTESTINAL MEMBRANE A4 PROTEIN	-0.006	0.150	0.834	1.170	-0.093	0.579	
N74131	INTESTINAL TREFOL FACTOR PRECURSOR	0.471	0.559	0.507	0.283	0.574	0.355	
AA156988	Iron-responsive element binding protein 1	0.613	0.351	-0.348	0.113	-0.274	-0.440	
AA018683	ISL1 transcription factor, LIM/homeodomain, (islet-1)	0.485	0.237	0.854	0.167	1.526	-0.460	
AA679907	Isochorate dehydrogenase 2 (NADP+), mitochondrial	-0.161	0.285	-0.373	-0.173	-0.236	-1.222	
AA410636	Isoleucine-tRNA synthetase	1.068	0.813	0.367	-0.186	0.697	0.320	
AA464149	Isovaleryl Coenzyme A dehydrogenase	1.070	0.993	0.476	0.405	0.376	0.519	
AA284634	Janus kinase 1 (a protein tyrosine kinase)	0.553	0.385	0.451	0.418	0.042	0.443	
AA293365	JNK ACTIVATING KINASE 1	1.281	0.602	1.295	0.476	1.193	0.873	
N94468	Jun B proto-oncogene	-0.027	-0.137	-0.217	0.433	0.181	0.334	
AA131585	Jun D proto-oncogene	0.734	0.816	0.478	0.285	0.517	0.334	
H17883	Kallmann syndrome 1 sequence	0.592	0.790	0.379	0.068	0.403	-0.388	
AA011415	Kell blood group precursor (McLeod phenotype)	0.054	0.488	-0.096	0.120	0.007	-0.089	
AA479882	Keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)	-0.063	0.294	0.114	0.541	0.342	0.346	
W60057	Keratin 13	0.073	0.039	-0.203	-0.251	0.352	0.474	
AA664179	Keratin 18	1.057	1.516	0.008	0.393	1.352	0.474	
AA629189	Keratin 4	0.429	-0.263	0.148	0.019	0.370	0.497	
AA160507	Keratin 5 (epidermolysis bullosa simplex, Dowling-Meara/Kobner/Weber-Cockayne types)	0.315	2.322	0.158	0.757	1.935	-0.215	
AA598517	Keratin 8	-0.131	-0.396	0.466	0.154	0.022	-0.566	
H44051	KERATIN, TYPE I CYTOSKELETAL 14	0.020	2.958	-0.156	-0.216	1.840	-0.170	
AA133469	KERATIN, TYPE I CYTOSKELETAL 20	0.361	0.440	0.345	0.437	0.321	0.232	
AA706022	KERATIN, TYPE II CYTOSKELETAL 1	0.286	0.322	0.664	0.466	0.312	-0.087	
AA431080	KERATIN, TYPE II CYTOSKELETAL 6D	1.204	0.993	1.163	0.645	0.124	0.739	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA485959	KERATIN, TYPE II CYTOSKELETAL 7	0.532	0.572	0.221	-0.038	1.158	0.213	
AA027012	Kinase insert domain receptor (a type III receptor tyrosine kinase)	0.084	0.844	0.186	-0.032	-0.010	0.469	
AA046890	KINESIN HEAVY CHAIN	-0.152	-0.232	0.368	-0.616	0.358	0.164	
AA410207	KINESIN LIGHT CHAIN	1.116	0.509	0.685	0.115	0.879	0.370	
H89834	Kininogen	-0.224	0.335	0.051	0.077	-0.289	0.635	
R18845	KRAB zinc finger protein (alternative products)	0.066	0.353	0.155	0.149	0.318	0.926	
AA577706	Lactotransferrin	-0.057	0.466	-0.414	-0.385	0.034	0.178	
AA136710	LACTOYLGLUTATHIONE LYASE	0.008	0.226	0.044	0.345	0.025	0.484	
AA496997	LAMIN A	-0.381	-0.131	-0.144	0.069	-0.160	0.359	
AA099136	Lamin B receptor	-0.175	-0.002	-0.004	-0.242	0.143	0.333	
AA446251	Laminin B1 chain	-0.136	-0.077	-0.123	0.355	0.072	0.587	
AA529897	Laminin receptor (2H5 epitope)	0.058	-0.049	0.321	0.400	0.173	0.433	
AA034939	Laminin, alpha 2 (merosin, congenital muscular dystrophy)	-0.297	0.109	0.515	0.588	-0.038	0.810	
AA001432	Laminin, alpha 3 (niclin (150kD), kalinin (165kD), BM600 (150kD), epileglin)	-0.213	0.239	0.582	0.757	0.435	-0.278	
R43734	Laminin, alpha 4	0.448	0.311	0.528	0.483	0.296	0.157	
AA156802	Laminin, beta 2 (laminin S)	0.298	0.392	0.439	0.113	0.238	0.467	
AA457025	Laminin, beta 2 (laminin S)	-0.045	-0.240	0.199	0.819	0.006	0.523	
H24650	Laminin, gamma 1 (formerly LAMB2)	-0.279	0.144	-0.221	-0.471	0.439	0.449	
AA101875	LARGE FIBROBLAST PROTEOGLYCAN PRECURSOR	-0.297	-0.407	0.606	-0.226	-0.252	0.280	
AA598629	LARGE PROLINE-RICH PROTEIN BAT3	0.642	0.254	0.327	0.042	0.242	0.091	
R61229	L-arginine:glycine amidinotransferase [human, kidney carcinoma cells, mRNA, 2330 nt]	0.251	0.430	0.768	1.312	0.325	0.559	
AA504856	Latent transforming growth factor beta binding protein 1	-0.263	-0.259	0.113	0.450	0.165	-0.142	
AA424584	Latent transforming growth factor beta binding protein 2	-0.615	-0.691	-0.020	0.139	-0.552	0.093	
R06458	Lecithin-cholesterol acyltransferase	0.559	0.012	0.188	0.110	0.362	0.408	
AA630328	Lectin, galactoside-binding, soluble, 3 (galectin 3) (NOTE: redefinition of symbol)	-0.056	-0.028	0.352	0.349	0.476	0.488	
AA011057	Lectin, galactoside-binding, soluble, 7 (galectin 7)	0.631	-0.368	0.305	-0.276	-0.175	0.285	
R50354	Leukemia inhibitory factor (cholinergic differentiation factor)	0.319	0.154	0.091	0.184	-0.001	0.480	
AA486275	LEUKOCYTE ELASTASE INHIBITOR	0.682	0.371	0.352	0.257	0.161	-0.039	
AA458801	Leukophysin	0.503	0.172	0.097	0.473	0.077	-1.121	
AA465366	Leukotriene A4 hydrolase	-0.164	0.191	0.091	0.321	-0.295	0.203	
AA291715	Ligase I, DNA, ATP-dependent	0.384	0.057	0.215	0.493	-0.308	0.257	
H51404	LIM domain kinase 1	-0.246	-0.052	0.278	0.317	-0.277	0.425	
AA630104	Lipase A, lysosomal acid, cholesterol esterase (Wolman disease)	0.022	0.255	0.139	0.343	0.030	0.801	
N68256	Lipase, hepatic	0.445	0.207	0.399	0.589	0.359	0.356	
AA633835	Lipoprotein lipase	0.162	0.229	0.416	0.764	0.214	0.481	
AA497029	L-LACTATE DEHYDROGENASE M CHAIN	-0.017	-0.064	-0.214	-0.571	-0.248	0.788	
AA427490	Long (electrocardiographic) QT syndrome 2	1.100	-0.220	0.648	0.424	0.576	-0.477	
T73556	Long chain fatty acid acyl-coA ligase	0.411	-0.026	0.169	0.376	-0.203	-0.195	
R68106	LOW AFFINITY IMMUNOGLOBULIN GAMMA FC RECEPTOR II C PRECURSOR	0.154	-0.349	-0.522	0.112	-0.516	0.597	
H20822	LOW AFFINITY IMMUNOGLOBULIN GAMMA FC RECEPTOR III-1 PRECURSOR	0.416	0.584	0.887	1.472	0.407	0.524	
AA486209	Low density lipoprotein-related protein-associated protein 1 (alpha-2-macroglobulin receptor-associated)	0.877	0.312	0.374	0.170	-0.057	1.013	
AA504461	LOW-DENSITY LIPOPROTEIN RECEPTOR PRECURSOR	1.130	0.693	1.180	0.234	0.907	0.669	
T63362	LOWE'S OCULOCEREBRORENAL SYNDROME PROTEIN	1.068	0.508	0.339	0.312	0.313	-0.257	
T77636	LPRP	0.188	0.842	-0.271	0.189	-0.215	0.486	
T71363	L-SERINE DEHYDRATASE	0.680	0.242	0.399	0.132	0.198	0.351	
AA689528	L-UBC	0.114	0.179	0.377	0.006	0.238	0.729	
AA447781	Lumican	-0.405	0.001	-0.019	-0.375	0.352	0.462	
W73144	Lymphocyte cytosolic protein 1 (L-plastin)	0.278	0.084	0.480	0.677	0.445	-0.007	
R74169	LYMPHOCYTE-SPECIFIC PROTEIN LSP1	0.160	0.500	-0.070	0.196	-0.003	-0.032	
W72329	Lymphotxin alpha (formerly tumor necrosis factor beta)	0.494	0.261	0.095	0.799	-0.202	-0.178	
AA454646	LYMPHOTOXIN-BETA RECEPTOR PRECURSOR	0.236	0.191	0.311	1.359	-0.016	0.928	
H28973	LYSOSOME-ASSOCIATED MEMBRANE GLYCOPROTEIN 1 PRECURSOR	0.338	0.143	0.146	0.149	0.384	1.127	
N62847	Lysosome-associated membrane protein 2 (alternative products)	-0.349	-0.358	-0.252	-0.405	-0.024	1.099	
N63943	Lyszyme	-0.255	-0.261	-0.097	0.360	-0.011	0.660	
AA476241	Lysyl hydroxylase	-0.465	-0.325	-0.768	-0.703	0.424	0.441	
AA452916	Lysyl oxidase	0.776	0.764	0.602	-0.436	-0.177	0.218	
H01340	Macrophage stimulating 1 (hepatocyte growth factor-like)	-1.096	-0.322	-0.665	-0.885	-0.587	0.743	
T47813	Macrophage stimulating 1 (hepatocyte growth factor-like)	0.947	0.570	0.327	0.583	0.197	0.358	
T51539	Macrophage stimulating 1 (hepatocyte growth factor-like)	-0.247	0.313	-0.151	0.075	0.085	-1.145	
H86558	MAD protein (MAX-binding protein)	-0.383	0.165	-0.101	-0.027	0.253	-0.030	
AA234897	MADS box transcription enhancer factor 2, polypeptide C (myocyte enhancer factor 2C)	-0.416	-0.047	-0.105	-0.317	-0.018	0.340	
W56300	MAJOR HISTOCOMPATIBILITY COMPLEX ENHANCER-BINDING PROTEIN MAD3	0.614	0.084	0.328	0.459	0.435	0.415	
AA464246	Major histocompatibility complex, class I, C	0.617	0.161	0.433	1.673	0.388	0.454	
H13691	Major histocompatibility complex, class II, DM beta	0.264	0.309	-0.020	0.040	0.231	0.397	
AA702254	Major histocompatibility complex, class II, DN alpha	2.000	-0.081	2.343	2.058	2.134	-0.385	
AA486532	Major histocompatibility complex, class II, DP beta 1	1.390	0.792	0.687	0.789	0.834	0.065	
AA689055	Major histocompatibility complex, class II, DQ beta 1	-0.293	-0.444	-0.042	-0.419	-0.452	0.522	
AA684195	Major histocompatibility complex, class II, DR beta 5	-0.308	0.486	-0.103	0.202	0.474	0.888	
AA227885	Mal, T-cell differentiation protein	0.371	0.187	0.307	0.322	0.243	0.714	
AA03295	MALATE DEHYDROGENASE, CYTOPLASMIC	-0.691	-0.130	-0.665	-1.607	-1.094	0.937	
AA689689	MALATE OXIDOREDUCTASE	0.805	0.157	0.168	0.708	0.353	0.822	
AA482290	Mannose phosphate isomerase	-0.078	0.266	0.396	0.538	0.335	0.390	
H16389	Mannose receptor	-0.355	0.082	-0.288	-0.145	0.287	0.632	
H96213	Mannose-6-phosphate receptor (cation dependent)	0.098	0.539	0.278	0.369	0.491	0.580	
T69284	Mannose-binding lectin, soluble (opsonic defect)	0.354	0.236	0.231	0.162	0.222	0.510	
AA427691	Mannosidase alpha-B (lysosomal)	0.106	-0.209	-0.269	-0.267	0.476	0.697	
H69561	Mannosidase, alpha type II	0.358	1.102	0.046	-0.212	0.579	0.305	
H47026	Mannosyl(beta-1,4-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase	0.537	0.456	0.111	0.291	0.124	-0.326	
H86755	MAP KINASE PHOSPHATASE-1	0.225	0.259	0.170	0.229	0.200	0.229	
AA075307	MATRIN 3	-0.487	-0.069	-0.216	0.039	0.141	-0.249	
AA155913	Matrix Gla protein	-0.425	-0.301	-0.499	-0.494	-0.731	0.324	
AA143331	Matrix metalloproteinase 1 (interstitial collagenase)	0.460	0.378	0.129	0.179	0.209	0.974	
AA857496	Matrix metalloproteinase 10 (stromelysin 2)	0.209	0.087	0.449	0.242	0.070	0.330	
R92994	Matrix metalloproteinase 12 (macrophage elastase)	0.601	0.415	0.241	0.472	0.374	-0.687	
N69322	Matrix metalloproteinase 13 (collagenase 3)	-0.279	0.274	0.207	-0.011	0.279	0.110	
AA443300	Matrix metalloproteinase 2	-1.195	-0.608	-1.049	-0.835	-1.580	0.400	
AA936799	Matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)	0.678	0.236	0.321	-0.056	0.512	0.033	
T72581	Matrix metalloproteinase 2 (gelatinase A; collagenase type IV)	1.353	0.280	0.376	0.640	0.858	1.514	
AA031514	Matrix metalloproteinase 7 (matrilysin, uterine)	-0.145	-0.077	-0.609	0.072	-0.098	1.183	
N68443	MAX protein	-0.366	-0.166	-0.110	0.238	-0.122	1.167	
AA001444	Meis1 (mouse) homolog	0.923	0.785	0.487	0.859	0.450	0.385	
AA463497	Membrane cofactor protein (CD46, trophoblast-lymphocyte cross-reactive antigen)	-0.482	-0.133	-0.082	-0.054	-0.042	0.939	
AA454810	Membrane component, chromosome 1, surface marker 1 (40kD glycoprotein, identified by monoclonal	0.184	0.542	-0.738	-0.189	0.155	0.077	
R98938	Membrane metallo-endopeptidase (neutral endopeptidase, enkephalinase, CALLA, CD10)	0.412	0.619	0.003	0.296	0.967	0.926	
N74236	Membrane protein, palmitoylated 1 (55kD)	-0.008	0.275	-0.143	-0.068	0.467	1.218	
AA588610	Mesoderm specific transcript (mouse) homolog	0.059	0.195	0.160	0.082	0.042	1.276	
AA411642	Met proto-oncogene (hepatocyte growth factor receptor)	-0.124	0.390	-0.184	-0.438	0.480	0.675	
H98666	Metalloproteinase 1 (33 kD)	0.369	-0.083	-0.015	0.191	0.310	0.261	
N80129	Metallothionein 1L	0.603	0.398	0.410	0.476	0.855	0.833	
AA670347	Metaxin	-0.359	-0.497	0.070	-0.957	-0.436	1.374	
AA663792	Methylmalonyl Coenzyme A mutase	1.498	0.756	0.773	0.898	1.195	1.144	
H08205	Mevalonate kinase	-0.046	-0.200	0.101	-0.138	0.370	0.902	
N71782	MHC class I polypeptide-related sequence A	-0.112	0.043	0.116	-0.112	0.148	0.773	
AA644657	MHC class I protein HLA-A (HLA-A28, -B40, -Cw3)	-0.520	-0.211	-0.263	0.035	-0.159	0.668	
T63324	MHC class II DQ alpha	0.572	0.220	-0.094	-0.442	-0.342	0.812	
AA458472	MHC class II DQ-beta associated with DR2, DQw1 protein	0.497	-0.001	-0.164	-0.348	-0.334	0.962	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA158396	MHC class II protein HLA-DO beta chain	-1.448	-0.443	-1.198	-1.116	0.061	0.893	
AA490920	MHC class II transactivator	0.788	0.643	0.098	-0.120	-0.321	0.981	
AA876054	MHC protein HLA-H (hereditary haemochromatosis)	0.083	0.205	0.288	0.416	0.525	0.853	
N67487	Microfibrillar-associated protein 2	0.430	0.422	-0.083	0.177	0.219	0.628	
AA496022	Microfibrillar-associated protein 4	0.294	0.440	0.265	0.585	0.276	0.890	
N66177	Microphthalmia-associated transcription factor	-0.624	-0.478	-0.087	0.147	-0.101	0.900	
AA863424	MICROSOMAL DIPEPTIDASE PRECURSOR	-0.820	-0.762	-0.701	-1.340	-1.012	0.863	
AA421278	Microsomal triglyceride transfer protein (large polypeptide, 88kD)	-0.169	0.027	0.241	0.296	0.362	0.493	
AA219045	MICROTUBULE-ASSOCIATED PROTEIN 1B	-0.450	-0.117	-0.477	-0.710	-0.498	0.444	
AA130870	Microtubule-associated protein 4	1.343	-0.195	0.175	0.819	1.063	0.641	
AA775445	Miller-Dieker syndrome chromosome region	0.875	0.789	1.170	-0.026	0.754	0.781	
AA447079	Mineralocorticoid receptor (aldosterone receptor)	0.029	-0.692	-0.617	-0.719	-0.287	0.491	
AA456608	Minichromosome maintenance deficient (S. cerevisiae) 3	0.265	0.240	0.075	0.370	0.299	0.012	
AA670357	MITOCHONDRIAL 2-OXOGlutARATE/MALATE CARRIER PROTEIN	0.262	-0.037	-0.016	-0.186	-0.001	0.681	
H05820	MITOCHONDRIAL 60S RIBOSOMAL PROTEIN L3	-0.177	0.235	-0.043	-0.184	0.417	0.458	
AA699469	Mitochondrial carbonic anhydrase	-0.441	-0.343	-0.377	-0.657	-0.474	0.483	
W47015	MITOCHONDRIAL ELONGATION FACTOR TS PRECURSOR	0.267	0.276	0.372	-0.044	0.154	0.285	
AA454068	MITOTIC KINESIN-LIKE PROTEIN-1	0.207	0.166	0.112	0.120	-0.066	1.197	
R22977	Moesin	0.783	0.702	0.795	0.423	0.754	1.488	
AA011096	Monoamine oxidase A	-0.541	0.014	-0.814	-0.852	-0.756	2.031	
AA682423	Monoamine oxidase B	-0.147	0.147	-0.300	-0.210	0.208	0.932	
AA040170	MONOCYTE CHEMOTACTIC PROTEIN 3 PRECURSOR	0.946	0.532	1.187	0.749	1.693	0.376	
AA701476	MONOCYTE DIFFERENTIATION ANTIGEN CD14 PRECURSOR	0.685	1.382	0.815	0.895	1.273	0.077	
N49725	Mouse double minute 2, human homolog of; p53-binding protein	0.282	0.040	0.257	0.282	0.105	0.518	
AA448659	M-PHASE INDUCER PHOSPHATASE 2	-0.020	0.339	0.199	0.092	0.625	0.656	
R55046	MpV17 transgene, murine homolog, glomerulosclerosis	0.750	0.484	0.527	0.384	0.785	1.176	
R33154	Msh (Drosophila) homeo box homolog 1 (formerly homeo box 7)	-0.084	-0.193	-0.003	-0.284	0.251	0.838	
AA195636	Msh (Drosophila) homeo box homolog 2	0.223	-0.160	-0.064	-0.034	-0.312	0.429	
AA488073	Mucin 1, transmembrane	0.257	0.216	-0.139	-0.554	-0.274	0.391	
AA857748	Mucin 2, intestinal/tracheal	-0.454	-0.659	-0.390	-0.324	-0.727	0.509	
AA159577	Mucin 5, subtype B, tracheobronchial	0.764	0.651	0.731	0.402	0.506	0.772	
AA455911	MULTIDRUG RESISTANCE PROTEIN 1	0.231	0.539	0.408	0.361	0.433	0.591	
AA424804	MULTIDRUG RESISTANCE-ASSOCIATED PROTEIN 1	-0.304	-0.391	-0.259	-0.106	-0.652	0.910	
AA589158	MULTIFUNCTIONAL AMINOACYL-TRNA SYNTHETASE	0.177	-0.109	0.006	-0.151	-0.001	1.057	
N33274	MULTIFUNCTIONAL PROTEIN ADE2	-0.088	-0.041	0.009	-0.137	0.021	0.132	
AA243439	Multiple endocrine neoplasia I	-0.057	-0.346	-0.282	-0.511	-0.229	0.180	
AA478036	Murine leukemia viral (bmi-1) oncogene homolog	0.091	-0.538	-0.305	-1.001	-0.958	-0.129	
AA176491	Muscle determination factor	0.272	0.286	0.110	0.250	0.591	0.449	
R77919	MUSCLE-SPECIFIC DNASE I-LIKE PRECURSOR	0.054	-0.364	-0.101	-0.246	0.194	0.601	
AA421716	MutS (E. coli) homolog 3	-1.004	-0.259	-0.422	-0.411	-0.817	-0.791	
AA443998	MutT (E. coli) human homolog (8-oxo-7,8-dihydroguanosine triphosphatase)	0.533	0.362	-0.107	0.233	-0.021	0.331	
R92452	Myasthenic syndrome antigen B [human, fetal brain, mRNA, 3477 nt]	0.125	0.656	0.135	0.030	-0.363	1.070	
N49284	MYB PROTO-ONCOGENE PROTEIN	0.241	0.307	0.201	0.988	-0.058	0.132	
H17080	Myelin basic protein	-0.395	-0.315	-0.224	0.001	-0.514	0.174	
AA488674	Myeloid cell leukemia sequence 1 (BCL2-related)	0.749	1.206	0.204	-0.004	0.601	0.462	
N29376	Myeloid cell nuclear differentiation antigen	-0.211	-0.471	-0.171	-0.544	-0.341	0.829	
AA703058	Myeloperoxidase	0.453	0.453	0.097	0.710	0.184	0.700	
AA282537	MYOCYTE-SPECIFIC ENHANCER FACTOR 2	-0.006	-0.166	-0.085	-0.329	-0.094	0.832	
AA283744	MYOCYTE-SPECIFIC ENHANCER FACTOR 2, ISOFORM MEF2	-0.065	0.268	-0.087	-0.319	0.024	0.450	
AA176581	MYOGLOBIN	0.157	-0.220	0.123	-0.135	0.483	0.424	
H90874	MYO-INOSITOL-1(OR 4)-MONOPHOSPHATASE	0.180	0.550	0.162	0.734	-0.082	0.119	
T52894	Myosin light chain (alkali)	-0.447	0.131	-0.559	-0.892	-0.178	0.782	
AA488346	MYOSIN LIGHT CHAIN ALKALI, SMOOTH-MUSCLE ISOFORM	-0.010	-0.061	-0.159	-0.858	-0.279	-0.136	
AA025850	Myosin VA (heavy polypeptide 12, myosin)	0.119	0.218	-0.022	0.376	0.164	-0.153	
AA062893	Myosin VIIA (Usher syndrome 1B (autosomal recessive, severe))	-0.040	0.347	-0.843	-0.378	0.142	1.039	
AA126889	Myosin, heavy polypeptide 11, smooth muscle	0.309	-0.288	0.116	-0.458	0.255	0.524	
AA437136	Myosin, heavy polypeptide 3, skeletal muscle, embryonic	-0.401	0.133	-0.135	-0.321	0.364	0.703	
AA196393	Myosin, light polypeptide 1, alkali; skeletal, fast	0.157	0.397	0.033	-0.106	0.254	-0.278	
N78927	Myosin, light polypeptide 2, regulatory, cardiac, slow	-0.564	-0.146	-0.341	-0.304	0.360	0.014	
AA192166	Myosin, light polypeptide 3, alkali; ventricular, skeletal, slow	-0.501	-0.182	-0.088	0.063	0.355	0.134	
AA705225	Myosin, light polypeptide 4, alkali; atrial; embryonic	0.033	-0.203	0.053	0.505	0.201	0.679	
AA463986	Myosin, light polypeptide 5, regulatory	0.321	0.434	0.284	0.241	0.490	0.771	
AA491225	Myotubular myopathy 1	-0.080	0.664	0.248	0.062	0.658	0.565	
AA482231	Myristoylated alanine-rich C-kinase substrate	-0.336	0.268	-0.158	-0.055	0.512	0.178	
AA457042	Myxovirus (influenza) resistance 1, homolog of murine (interferon-inducible protein p78)	-0.045	0.501	0.136	0.294	1.069	0.977	
AA286908	Myxovirus (influenza) resistance 2, homolog of murine	-0.007	0.524	-0.025	0.310	0.633	0.432	
T68568	Na/taurocholate cotransporting polypeptide	0.720	0.528	0.140	0.917	0.445	1.135	
R46823	N-acetylgalactosaminidase, alpha-	0.208	0.380	0.172	0.265	0.562	0.765	
N77931	N-acetylgalactosaminidase, alpha- (Sanfilippo disease IIIb)	0.064	0.118	-0.141	0.106	0.269	0.714	
AA775378	N-acetylgalactosaminyltransferase I	0.278	0.358	0.106	0.338	0.201	0.491	
AA043796	N-ACETYL LACTOSAMINE SYNTHASE	0.240	0.709	0.733	0.518	0.273	-0.418	
AA455941	N-acylaminoacyl-peptide hydrolase	0.257	0.354	0.060	0.230	0.533	0.596	
AA458634	NAD(P)H:menadione oxidoreductase	0.737	0.503	0.399	0.458	0.450	0.514	
AA480895	NAD-DEPENDENT METHYLENETETRAHYDROFOLATE DEHYDROGENASE	0.264	0.707	0.324	0.550	1.431	1.014	
AA922326	NADH dehydrogenase (ubiquinone) flavoprotein 2 (24kD)	-0.243	0.033	-0.091	0.095	-0.124	0.771	
AA406536	NADH-UBIQUINONE OXIDOREDUCTASE 75 KD SUBUNIT PRECURSOR	-0.019	0.638	0.480	0.207	0.357	0.715	
AA458965	NATURAL KILLER CELLS PROTEIN 4 PRECURSOR	1.182	0.490	0.936	0.519	1.372	0.724	
AA133656	Natural resistance-associated macrophage protein 2	0.106	-0.198	-0.075	-0.324	0.282	0.175	
AA598668	N-CHIMAERIN	0.061	1.295	0.164	0.186	0.274	-0.576	
AA609982	N-cym	0.070	1.153	-0.246	0.082	-0.044	0.701	
AA442095	NEDD-4 PROTEIN	0.297	-0.028	0.014	-0.391	0.099	0.578	
AA447658	Neogenin (chicken) homolog 1	0.788	0.811	0.428	1.588	0.895	0.928	
T52484	Nerve growth factor beta	0.097	-0.055	-0.543	-0.499	-0.571	0.811	
R55303	Nerve growth factor receptor	0.424	0.534	0.194	0.571	0.491	0.893	
AA490039	Neuroblastoma RAS viral (v-ras) oncogene homolog	0.146	-0.236	0.226	0.112	0.254	0.336	
AA428960	Neurofibromin 2 (bilateral acoustic neuroma)	0.416	0.300	0.526	0.547	0.558	0.072	
AA447618	Neurofilament-66 [human, fetal brain, mRNA, 3197 nt]	0.053	0.132	0.119	-0.020	0.345	0.822	
AA425450	Neurexins	0.001	0.085	-0.120	0.124	0.520	1.067	
AA683041	Neuronal pentraxin II	-0.355	0.116	0.141	0.148	0.295	0.622	
H19687	NEURON-SPECIFIC X11 PROTEIN	-0.443	-0.206	-0.638	-0.274	0.115	0.772	
R43817	Neuropeptide Y receptor Y1	0.023	0.257	0.106	-0.203	0.588	0.730	
AA461157	Neurotrophic tyrosine kinase, receptor, type 1	-0.060	0.495	-0.107	0.078	0.637	1.433	
AA774941	Neurotrophic tyrosine kinase, receptor, type 3 (TrkC)	1.416	0.834	0.423	-0.101	-0.243	0.321	
N54165	NEUTROPHIL DEFENSINS 1, 2 AND 3 PRECURSOR	-0.053	-0.157	-0.412	-0.394	-0.118	0.564	
AA400973	NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN PRECURSOR	0.270	0.326	0.570	-0.047	1.034	0.268	
AA709414	Nidogen (enactin)	0.248	-0.136	0.067	-0.403	-0.101	0.298	
AA634267	Niemann-Pick disease, type C1	0.537	0.468	0.253	0.031	0.573	0.376	
AA877840	Nitric oxide synthase 2A (inducible, hepatocytes)	0.449	0.178	0.211	0.724	0.361	0.407	
AA884967	Nitric oxide synthase 3 (endothelial cell)	0.295	-0.169	0.527	0.310	1.271	0.461	
AA190627	NKG2-C TYPE II INTEGRAL MEMBRANE PROTEIN	1.522	1.212	0.347	1.328	0.055	-0.477	
AA397819	NKG2-D TYPE II INTEGRAL MEMBRANE PROTEIN	0.000	0.146	-0.092	0.158	-0.046	0.451	
AA701652	NKG5 PROTEIN PRECURSOR	0.148	0.883	-0.320	-0.027	-0.311	0.390	
N26769	N-methylpurine-DNA glycosylase	-0.076	0.264	-0.294	-0.411	0.497	0.665	
R52824	N-MYC PROTO-ONCOGENE PROTEIN	0.145	0.883	0.719	0.082	-0.487	0.109	
AA280214	Non-catalytic region of tyrosine kinase	-0.468	-0.218	-0.270	-0.589	-0.487	0.109	
AA496628	Non-metastatic cells 2, protein (NM23B) expressed in	0.830	0.454	0.634	0.406	0.439	0.272	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA054073	Non-specific cross reacting antigen	0.363	0.068	-0.192	-0.327	-0.052	0.055	
AA670439	Norrie disease (pseudoglioma) protein	1.037	0.436	0.349	0.242	1.253	0.892	
AA629687	Nr12	0.082	0.858	-0.022	0.519	0.295	0.151	
R55220	N-TERMINAL ACETYLTRANSFERASE COMPLEX ARD1 SUBUNIT HOMOLOG	0.513	0.304	0.197	0.048	0.282	0.407	
AA447482	Nuclear antigen Sp100	-0.437	-0.508	-0.489	-0.583	-0.489	0.088	
AA544128	Nuclear autoantigenic sperm protein (histone-binding)	-0.104	-0.139	0.179	-0.089	0.445	0.033	
AA278749	Nuclear cap binding protein, 80kD	-1.109	-0.943	-0.549	-0.880	-1.212	1.068	
AA406269	Nuclear factor I/X (CCAAT-binding transcription factor)	0.192	0.297	-0.054	-0.023	0.138	0.533	
AA451716	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105)	-2.080	-1.471	-1.754	-1.543	-1.559	0.000	
AA458503	NUCLEAR FACTOR RIP140	-0.814	0.070	-0.204	0.095	0.134	0.186	
AA401428	NUCLEAR PORE COMPLEX PROTEIN NUP214	0.524	0.707	0.206	0.803	0.527	0.364	
AA412691	Nuclear transcription factor Y, alpha	0.940	0.285	0.471	0.278	0.759	0.456	
N75595	NUCLEAR TRANSPORT FACTOR 2	-0.209	0.117	-0.063	0.229	0.373	1.512	
AA452535	NUCLEOBINDIN PRECURSOR	0.237	0.247	0.117	-0.175	0.143	1.190	
N92443	NUCLEOLAR TRANSCRIPTION FACTOR 1	0.335	0.348	0.039	0.242	0.536	1.058	
AA476284	NUCLEOLIN	0.235	0.190	-0.165	-0.272	0.283	0.460	
AA427684	NUCLEOLYSIN TIA-1	-0.530	-0.125	-0.232	-0.352	0.244	0.342	
AA669758	Nucleophosmin (nucleolar phosphoprotein B23, numatrin)	-0.177	0.125	0.251	0.043	0.314	0.246	
AA644092	NUCLEOSIDE DIPHOSPHATE KINASE A	0.492	-0.168	0.154	-0.128	-0.152	1.214	
AA430382	Nucleoside phosphorylase	0.670	0.328	0.257	0.296	0.387	0.820	
H24006	Oligodendrocyte myelin glycoprotein	1.581	0.386	0.985	0.540	1.441	0.988	
R31938	Opioid receptor, kappa 1	-0.120	0.178	-0.346	-0.259	-0.294	0.852	
AA425422	Opioid-binding cell adhesion molecule	0.107	0.547	-0.079	0.108	0.381	0.718	
AA446820	Ornithine aminotransferase (gyrate atrophy)	-1.863	-1.364	-1.240	-1.459	-1.576	0.467	
AA461487	Ornithine decarboxylase 1	-0.718	-0.470	-0.318	-0.378	-0.184	0.825	
AA700876	Orosomucoid 1	-0.343	-0.277	0.226	-0.226	0.487	0.815	
H68838	ORPHAN RECEPTOR TR2	-0.147	0.036	-0.459	-0.038	-0.027	1.002	
H23979	OX-2 MEMBRANE GLYCOPROTEIN PRECURSOR	0.436	1.071	0.561	0.708	0.361	0.942	
H80138	Oxoglutarate dehydrogenase (lipamide)	2.045	0.588	0.791	1.063	0.845	0.736	
AA085759	Oxytocin receptor	-0.063	0.018	-0.019	0.348	0.375	0.788	
R53935	P glycoprotein 3/multiple drug resistance 3	0.587	-0.331	-0.116	-0.249	-0.197	-0.365	
AA456432	P PROTEIN	0.607	0.944	-0.203	0.834	0.158	-0.067	
AA485377	P55-C-FOS PROTO-ONCOGENE PROTEIN	0.554	0.599	-0.092	0.795	0.723	0.429	
H27564	P68 PROTEIN	-0.103	0.154	-0.249	0.005	0.073	0.412	
W68740	P80-COILIN	0.137	0.010	0.884	0.461	0.094	0.588	
AA856874	Paired basic amino acid cleaving enzyme (furin, membrane associated receptor protein)	0.551	0.307	0.350	0.233	0.244	0.998	
AA251457	Paired basic amino acid cleaving system 4	-0.042	-0.024	0.159	0.255	0.465	0.319	
R95962	Paired box homeotic gene 6 (aniridia, keratitis)	0.632	0.226	0.456	0.171	0.513	-1.118	
AA844998	Pancreatic polypeptide	-0.606	-0.301	-0.175	-0.439	-0.062	0.297	
AA430698	Pantophysin [human, keratinocyte line HaCaT, mRNA, 2106 nt]	0.223	0.198	0.355	0.470	-0.046	0.731	
R12373	Paraoxonase 1	0.566	0.477	0.404	0.504	0.403	0.692	
R11526	Parathyromosin	0.146	0.159	-0.090	-0.223	0.758	-0.438	
W37306	Parathyroid hormone	0.031	0.435	0.660	0.039	0.680	-0.177	
AA872602	Parathyroid hormone receptor 1	-0.009	0.108	0.064	0.120	0.535	-0.169	
AA131693	Parathyroid hormone-like hormone	0.607	1.242	0.263	0.278	1.151	-0.625	
AA010609	Parvalbumin	-0.535	-0.305	0.008	-0.572	0.284	0.519	
AA169807	Patched (Drosophila) homolog	-0.229	0.073	0.099	0.281	-0.482	0.679	
AA403031	PBX1a and PBX1b	0.230	0.253	0.417	-0.050	-0.156	-0.054	
AA394136	PCTAIRE protein kinase 3	-0.605	-0.236	-0.158	-0.258	0.062	-0.780	
R72097	PEPSINOGEN A PRECURSOR	0.620	0.580	-0.081	0.327	0.355	0.313	
AA481543	Peptidase D	-0.390	-0.287	-0.313	-0.602	-0.627	0.277	
R66310	Peptidylglycine alpha-amidating monooxygenase	-0.030	0.320	-0.137	-0.009	0.097	0.416	
AA401291	PEPTIDYL-PROLYL CIS-TRANS ISOMERASE, MITOCHONDRIAL PRECURSOR	0.303	-0.040	-0.240	-0.243	-0.160	0.503	
AA481464	Peptidylprolyl isomerase B (cyclophilin B)	-0.306	-0.155	0.162	-0.076	0.435	-0.386	
AA676404	Peptidylprolyl isomerase C (cyclophilin C)	0.386	-0.024	0.198	-0.207	0.341	0.016	
R26732	Peripheral myelin protein 22	0.432	0.781	0.303	0.124	0.556	0.307	
AA455945	PERIPHERAL-TYPE BENZODIAZEPINE RECEPTOR	-0.193	0.022	0.173	0.110	0.107	0.743	
H10965	Peroxisomal biogenesis factor 12	0.139	0.493	0.302	-0.008	0.327	0.510	
AA234671	Peroxisomal membrane protein 1 (70kD, Zellweger syndrome)	-0.017	0.625	0.128	-0.396	0.238	0.428	
AA452566	Peroxisomal membrane protein 3 (35kD, Zellweger syndrome)	-0.041	0.055	0.082	0.080	0.458	0.283	
N63192	Phenylethanolamine N-methyltransferase	0.214	-0.259	0.062	-0.060	-0.080	0.336	
W37864	Phosphatase and tensin homolog (mutated in multiple advanced cancers 1)	0.221	-0.109	0.221	-0.022	0.362	0.129	
AA486200	Phosphate carrier, mitochondrial	-0.080	0.000	0.216	-0.263	0.766	0.568	
R89808	PHOSPHATIDYLINOSITOL	-0.322	-0.281	-0.015	0.129	-0.333	0.554	
W72473	PHOSPHATIDYLINOSITOL 3-KINASE CATALYTIC SUBUNIT, ALPHA ISOFORM	0.795	0.455	0.441	0.728	0.629	0.801	
AA191461	Phosphatidylinositol 3-kinase p110 beta isoform	0.012	0.037	0.166	-0.180	-0.003	-0.253	
AA464176	Phosphatidylinositol 3-kinase, catalytic, gamma polypeptide	0.053	0.279	-0.289	-0.332	0.260	0.165	
AA421268	PHOSPHATIDYLINOSITOL 4-KINASE ALPHA	0.369	0.696	0.180	0.538	0.855	0.423	
AA424735	Phosphatidylinositol glycan, class A (paroxysmal nocturnal hemoglobinuria)	0.431	0.754	0.095	0.025	0.991	0.325	
AA069879	Phosphatidylinositol glycan, class F	0.579	1.093	0.285	0.117	0.245	0.049	
H28884	PHOSPHATIDYL-SERINE SYNTHASE I	-0.223	0.268	0.153	-0.015	-0.068	0.119	
AA453293	Phosphodiesterase 4B, cAMP-specific (dunce (Drosophila)-homolog phosphodiesterase E4)	-0.074	-0.014	0.141	-0.150	0.582	0.340	
W92514	Phosphodiesterase 6A, cGMP-specific, rod, alpha	-0.214	-0.249	-0.437	-0.397	-0.268	0.046	
AA074148	Phosphodiesterase 6G, cGMP-specific, rod, gamma	-0.291	-0.142	0.124	-0.069	-0.002	0.376	
AA405731	Phosphoenolpyruvate carboxykinase 1 (soluble)	0.774	0.113	0.080	-0.185	-0.235	0.332	
W72140	Phosphofructokinase (liver type)	0.960	0.360	0.235	0.306	0.725	0.174	
AA099169	Phosphofructokinase, muscle	0.363	0.027	0.189	-0.075	0.498	0.465	
AA608558	Phosphofructokinase, platelet	-0.955	-0.060	-0.574	-0.403	-0.466	0.412	
AA488373	Phosphoglucomutase 1	-0.440	0.581	-0.126	-0.092	0.208	0.101	
AA598756	Phosphogluconate dehydrogenase	0.107	0.271	-0.396	-0.032	0.103	0.718	
AA598187	Phosphoglycerate kinase 1	0.642	-0.547	0.296	0.019	-0.797	0.481	
AA676970	Phosphoglycerate mutase 1 (brain)	-0.181	0.040	0.267	-0.086	0.527	1.278	
NA5318	Phosphoglycerate mutase 2 (muscle)	-0.205	0.256	-0.187	-0.194	-0.089	0.644	
AA427940	Phospholamban	-0.024	0.299	-0.232	0.002	0.564	0.216	
H22563	Phospholipase C, beta 4	0.480	0.559	0.193	-0.175	-0.034	0.092	
H57180	Phospholipase C, gamma 2 (phosphatidylinositol-specific)	0.345	0.465	0.296	-0.042	-0.081	0.256	
AA454856	Phospholipid hydroperoxide glutathione peroxidase	0.884	0.473	0.607	0.050	-0.036	0.696	
AA156863	Phosphomannomutase	0.260	0.011	0.318	0.406	-0.169	0.900	
N35888	Phosphomannomutase 2	0.468	0.087	0.333	0.289	0.096	0.693	
AA151486	Phosphoribosyl pyrophosphate synthetase 2	0.254	0.654	0.038	0.208	0.970	0.305	
AA598487	Phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosyl	0.157	0.621	0.110	0.165	0.831	0.498	
AA677340	Phosphorylase kinase, alpha 2 (liver), glycogen storage disease IX	0.343	0.052	0.100	0.108	0.092	0.428	
AA291732	Phosphorylase kinase, gamma 2 (testis)	0.245	0.315	-0.197	0.591	0.846	0.351	
AA147640	Phosphorylase, glycogen; liver (Hers disease, glycogen storage disease type VI)	0.317	-0.072	0.313	0.100	0.330	0.377	
AA121668	Pigment epithelium-derived factor	0.751	0.390	0.685	0.545	1.005	0.470	
AA447730	Pim-1 oncogene	0.374	0.260	0.430	-0.124	-0.077	-0.176	
AA130714	Placental growth factor, vascular endothelial growth factor-related protein	0.013	-0.031	-0.217	0.139	-0.190	-1.033	
H03346	PLACENTAL PROTEIN 11 PRECURSOR	0.839	0.599	0.883	0.742	0.394	0.297	
T72076	PLASMA RETINOL-BINDING PROTEIN PRECURSOR	0.430	0.698	0.544	0.586	0.392	0.458	
T69450	PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1	0.389	0.307	0.025	0.316	0.388	0.676	
T73090	Plasminogen	0.284	0.692	0.204	0.169	0.667	0.474	
N54794	Plasminogen activator inhibitor, type I	0.341	0.402	0.362	-0.104	0.004	-0.318	
T49159	Plasminogen activator inhibitor, type II (arginine-serpin)	0.121	0.680	0.068	0.173	1.299	-0.249	
AA447797	Plasminogen activator, tissue type (t-PA)	0.077	0.503	0.221	-0.010	-0.040	0.155	
AA454879	Plasminogen activator, urokinase receptor	0.153	1.079	0.509	0.417	0.125	0.193	
T67549	Plasminogen-like protein	-0.503	0.431	0.089	-0.102	-0.082	0.381	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA017379	Plastin 1 (I isoform)	0.328	0.216	0.668	0.652	0.297	0.506	
T97181	Platelet factor 4	0.281	0.816	-0.016	0.010	0.938	0.865	
R22412	Platelet/endothelial cell adhesion molecule (CD31 antigen)	-0.316	-0.398	-0.073	-0.057	-0.121	0.987	
T40540	Platelet-derived growth factor beta polypeptide (simian sarcoma viral (v-sis) oncogene homolog)	0.834	0.289	0.207	-0.023	0.674	0.804	
AA701502	Platelet-derived growth factor PDGF-A	0.045	0.239	0.721	-0.171	0.256	-0.107	
R56211	Platelet-derived growth factor receptor, beta polypeptide	0.141	-0.595	-0.245	-0.039	-0.111	0.806	
AA001449	Plectrophin (heparin binding growth factor 8, neurite growth-promoting factor 1)	0.819	0.705	0.631	0.116	1.295	0.438	
N67770	PMEL 17 PROTEIN PRECURSOR	0.063	-0.090	-0.085	-0.135	0.304	0.830	
R84893	Polycystic kidney disease 1 (autosomal dominant)	0.543	0.136	0.555	0.332	0.417	0.916	
AA429661	Polymerase (DNA directed), delta 1, catalytic subunit (125kD)	0.059	-0.075	0.190	-0.174	0.048	0.826	
AA479052	Polymerase (RNA) II (DNA directed) polypeptide A (220kD)	0.458	0.432	0.313	-0.083	0.484	0.828	
H99681	POLYPOSIS LOCUS PROTEIN 1	-1.019	-1.621	-1.077	-1.549	-1.085	0.418	
AA677517	Polypyrimidine tract binding protein (hnRNP I) [alternative products]	1.613	0.860	0.853	0.488	0.892	-0.018	
N30302	POSSIBLE GTP-BINDING PROTEIN HSR1	0.061	-0.312	-0.682	-0.702	-0.412	0.555	
AA018214	POTASSIUM CHANNEL PROTEIN KV1.1	0.723	-0.416	-0.479	-0.706	-0.423	0.855	
H38522	POU domain, class 2, transcription factor 1	-0.672	-0.044	0.020	-0.134	-0.070	0.967	
AA873635	POU domain, class 2, transcription factor 2	0.750	0.578	0.218	0.535	0.641	0.889	
N63968	POU homeobox protein	-0.572	-0.534	-0.124	-0.442	-0.010	0.804	
AA677388	Pre-alpha (globulin) inhibitor, H3 polypeptide	0.443	0.243	0.346	0.089	0.489	0.287	
T59641	PRE-B-CELL LEUKEMIA TRANSCRIPTION FACTOR-2	0.940	0.589	0.138	0.207	0.792	0.047	
AA778198	PRE-B-CELL LEUKEMIA TRANSCRIPTION FACTOR-3	-0.461	-0.077	-0.236	0.009	0.260	0.970	
V51985	Pregnancy specific beta-1 glycoprotein 5	0.568	0.246	0.481	0.240	0.687	0.781	
V84789	Pregnancy-associated plasma protein A	0.561	-0.012	0.110	0.132	0.123	0.551	
N32768	Pregnancy-specific beta-1 glycoprotein 7	0.639	0.379	0.142	-0.248	0.622	0.627	
R73909	Pregnancy-specific beta-1 glycoprotein 13	0.065	-0.334	-0.178	0.360	-0.083	0.263	
N30553	Pregnancy-specific beta-1 glycoprotein 4	1.083	0.815	0.427	0.260	0.548	0.180	
R70868	PREGNANCY-SPECIFIC BETA-1 GLYCOPROTEIN E PRECURSOR	1.122	0.644	-0.431	0.283	-0.201	0.359	
N33827	PRE-MRNA SPLICING FACTOR SF2, P33 SUBUNIT PRECURSOR	0.300	0.331	0.075	-0.147	0.202	0.689	
T65786	PRE-MRNA SPLICING FACTOR SF2, P33 SUBUNIT	0.234	0.313	-0.247	0.003	0.073	-0.224	
AA598400	PRE-MRNA SPLICING FACTOR SRP20	-0.237	0.347	-0.453	-0.234	0.059	-0.362	
AA496787	PRE-MRNA SPLICING FACTOR SRP75	0.451	0.547	-1.196	0.008	0.194	0.070	
N54494	Prepro-plasma carboxypeptidase B	0.298	0.092	-0.005	0.488	0.425	0.217	
AA411814	Presenilin 1 (Alzheimer disease 3)	0.248	0.249	-0.297	-0.080	0.358	0.490	
AA450249	Presenilin 2 (Alzheimer disease 4)	0.540	0.443	0.094	-0.195	0.887	0.832	
AA455969	Prion protein (c27-30) (Creutzfeldt-Jakob disease, Gerstmann-Strausler-Scheinker syndrome, fatal fam)	0.547	0.565	-0.247	0.301	0.484	-0.203	
R02740	PROBABLE G PROTEIN-COUPLED RECEPTOR HM74	0.547	0.232	0.278	0.304	0.283	0.075	
T62636	PROBABLE G PROTEIN-COUPLED RECEPTOR LCR1 HOMOLOG	0.199	0.003	-0.079	0.119	0.187	-0.007	
AA115309	PROBABLE PROTEIN DISULFIDE ISOMERASE ER-60 PRECURSOR	-0.613	-0.510	-0.202	-0.644	0.091	-0.711	
AA916325	PROBABLE TRANS-1,2-DIHYDROBENZENE-1,2-DIOL DEHYDROGENASE	0.371	1.039	-0.341	0.455	-0.255	0.432	
AA291742	Probable transcription factor PML [alternative products]	0.994	0.812	0.336	0.323	0.568	0.190	
AA443908	PROBABLE UBIQUITIN CARBOXYL-TERMINAL HYDROLASE	-0.153	-0.119	-0.013	0.442	-0.031	0.350	
N30181	PROCHOLECYSTOKININ PRECURSOR	1.911	0.468	1.227	0.607	1.181	0.501	
AA670200	Procollagen C-endopeptidase enhancer	0.301	0.256	0.594	0.373	0.674	-0.326	
AA457671	Procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide	0.406	0.294	0.406	0.017	0.613	-0.707	
AA425212	Procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (protein di	0.855	1.496	-0.152	0.451	0.143	-0.510	
AA040703	Profilin 2	0.153	0.380	0.153	0.394	0.548	-0.367	
AA402883	Progestagen-associated endometrial protein (placental protein 14, pregnancy-associated endometrial i	0.734	0.588	0.447	0.543	0.609	0.427	
AA521466	Programmed cell death 2	0.500	0.750	0.388	0.277	0.666	0.361	
R63647	Prolactin receptor	0.401	0.245	0.327	0.389	0.487	0.402	
AA450285	Proliferating cell nuclear antigen	0.510	0.382	0.106	-0.081	0.682	-0.039	
N50854	PROLIFERATING-CELL NUCLEOLAR ANTIGEN P120	0.550	-0.165	0.264	0.275	-0.117	0.396	
AA775803	Proliferation-associated gene A (natural killer-enhancing factor A)	0.204	0.109	0.180	0.231	0.280	0.210	
AA434067	Proline arginine-rich end leucine-rich repeat protein	0.838	0.611	0.434	0.261	0.659	-0.493	
AA640556	Prolyl endopeptidase	0.608	0.192	0.190	0.212	0.514	0.469	
AA446316	Proopiomelanocortin (adrenocorticotropin/ beta-lipotropin/ alpha-melanocyte stimulating hormone/ beta	0.329	-0.149	0.001	-0.261	0.501	0.210	
H52258	Properdin P factor, complement	0.480	0.686	0.292	0.874	0.218	-0.297	
R46700	Propionyl Coenzyme A carboxylase, beta polypeptide	1.777	1.196	0.434	0.805	1.003	-0.983	
AA608575	Propionyl-coA carboxylase alpha chain	-0.215	0.350	-0.362	-0.166	0.527	-0.312	
R42630	Propionyl convertase subtilisin/kexin type 1	0.502	0.545	0.558	0.956	0.393	0.247	
AA069517	Propionyl convertase subtilisin/kexin type 2	0.563	-0.116	-0.023	-0.287	0.562	0.052	
T53298	Prostacyclin-stimulating factor (human, cultured diploid fibroblast cells, mRNA, 1124 nt)	0.221	0.467	0.055	-0.073	0.991	0.271	
AA019996	Prostaglandin E receptor 2 (subtype EP2), 53kD	0.303	0.194	0.345	-0.082	0.305	0.115	
AA406362	Prostaglandin E receptor 3 (subtype EP3) [alternative products]	-0.394	0.240	-0.465	0.169	0.433	0.139	
AA454668	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)	0.446	-0.326	-0.274	-0.240	-0.714	-0.747	
AA642211	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	0.131	0.358	-0.169	-0.100	0.196	0.370	
AA490981	Prostate specific antigen	0.108	0.374	0.750	0.054	0.386	0.022	
N64840	PROSTATE-SPECIFIC MEMBRANE ANTIGEN	0.137	-0.043	0.547	0.347	0.238	0.576	
AA485909	Prostatic binding protein	0.992	0.800	0.625	0.553	1.194	0.007	
T72361	Protease inhibitor 1 (anti-elastase), alpha-1-antitrypsin	0.197	0.403	0.143	0.006	0.451	0.015	
AA284528	Protease, serine, 2 (trypsin 2)	-0.218	0.191	0.094	0.036	-0.086	0.005	
AA864479	Proteasome (prosome, macropain) subunit, beta type, 5	0.240	0.065	0.224	-0.037	0.432	0.311	
AA070997	Proteasome (prosome, macropain) subunit, beta type, 6	-0.342	-0.422	-0.234	-0.324	-0.393	-0.522	
AA862434	PROTEASOME CHAIN 7 PRECURSOR	0.355	0.434	0.226	0.162	0.962	-0.192	
AA181300	PROTEASOME COMPONENT C13 PRECURSOR	0.342	-0.124	0.181	-0.298	-0.057	0.722	
R27585	Proteasome component C2	-0.441	-0.453	-0.251	-0.184	-0.538	0.419	
T68758	Proteasome component C5	1.021	0.599	0.210	0.333	0.297	-0.178	
AA465237	PROTEASOME COMPONENT C8	0.079	-0.018	-0.320	-0.419	-0.065	0.478	
AA116060	PROTEASOME COMPONENT C9	-0.412	-0.580	-0.523	-0.112	-0.716	-0.633	
T54166	PROTEASOME COMPONENT MECL-1 PRECURSOR	-0.242	0.189	-0.303	-0.161	0.150	-0.814	
AA047338	PROTEASOME IOTA CHAIN	-0.217	0.288	0.089	0.103	0.474	0.735	
AA598815	PROTEASOME ZETA CHAIN	0.035	0.176	-0.257	-0.315	0.089	0.362	
AA916327	Protective protein for beta-galactosidase (galactosialidosis)	-0.201	-0.242	0.214	-0.031	0.005	0.377	
AA703141	PROTEIN 4.1	0.612	-1.090	0.384	0.391	0.002	-0.098	
W86431	Protein C inhibitor	0.275	0.130	-0.041	0.174	-0.215	-0.608	
AA496810	Protein kinase C substrate 80K-H	0.249	0.257	-0.118	0.071	0.816	0.150	
AA029890	Protein kinase C, alpha	-0.349	-0.519	-0.675	-0.318	0.126	0.750	
AA479102	Protein kinase C, beta 1	-0.259	0.133	-0.014	0.211	-0.200	0.436	
AA496360	PROTEIN KINASE C, DELTA TYPE	0.882	-1.091	0.152	0.638	-0.490	0.466	
R89715	Protein kinase C, gamma	-0.227	-0.633	-0.119	-0.228	-0.589	0.332	
T57875	Protein kinase C, iota	-0.374	-0.447	-0.471	0.186	-0.495	-0.483	
N53380	Protein kinase C, mu	0.589	0.550	0.273	0.347	0.370	-1.042	
H60824	PROTEIN KINASE C, THETA TYPE	0.375	-0.064	0.096	0.384	0.144	-0.285	
AA459211	Protein kinase C, zeta	-0.201	0.234	0.864	0.893	-0.174	0.363	
AA281667	Protein kinase inhibitor [human, neuroblastoma cell line SH-SY-5Y, mRNA, 2147 nt]	-0.919	-0.531	-0.048	-0.207	-0.383	0.516	
W68141	Protein kinase, cAMP-dependent, catalytic, alpha	0.162	0.573	-0.045	-0.345	0.161	0.023	
AA018980	Protein kinase, cAMP-dependent, catalytic, beta	0.613	0.659	0.620	0.471	0.598	-0.083	
AA485366	Protein kinase, cAMP-dependent, regulatory, type I, beta	-0.128	0.139	-0.111	-0.271	-0.339	-0.268	
AA180007	Protein kinase, cAMP-dependent, regulatory, type II, beta	0.190	0.038	0.087	0.040	0.671	0.237	
AA010079	Protein kinase, interferon-inducible double stranded RNA dependent	-0.131	0.288	0.011	0.133	-0.233	0.426	
AA443982	Protein phosphatase 1, catalytic subunit, alpha isoform	0.165	0.337	0.537	0.065	0.366	0.426	
R26186	Protein phosphatase 1, catalytic subunit, beta isoform	0.222	0.337	0.137	0.447	0.129	0.383	
AA599092	Protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform	0.616	0.339	0.016	0.012	0.742	-0.579	
N28497	Protein phosphatase 2 (formerly 2A), regulatory subunit A (PR 65), beta isoform	0.026	0.027	-0.189	-0.165	-0.406	0.215	
AA452353	Protein phosphatase 2 (formerly 2A), regulatory subunit B* (PR 72), alpha isoform and (PR 130), beta i	0.072	0.432	-0.169	0.118	-0.193	0.836	
W35378	Protein phosphatase 2A, regulatory subunit B' alpha-1	-0.243	-0.017	-0.110	0.381	0.278	0.901	
AA682631	Protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform (calcineurin A alpha)[alternative p	0.226	0.173	0.265	0.109	0.353	1.102	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA405562	Protein phosphatase 4 (formerly X), catalytic subunit	0.590	0.341	-0.098	0.021	0.693	0.855	
AA428335	PROTEIN PHOSPHATASE INHIBITOR 2	0.131	0.546	0.129	0.491	0.954	0.723	
AA427433	PROTEIN PHOSPHATASE PP2A, 65 KD REGULATORY SUBUNIT, ALPHA ISOFORM	0.111	0.252	0.133	-0.018	0.817	0.743	
AA454208	PROTEIN PHPS1-2	-0.347	-0.143	-0.347	-0.344	0.524	0.983	
AA099140	Protein S (alpha)	-0.108	-0.002	0.219	-0.169	-0.194	0.278	
AA496013	Protein serine/threonine kinase etk2	0.205	0.137	-0.016	-0.438	0.809	0.812	
H73928	PROTEIN TRANSPORT PROTEIN SEC61 BETA SUBUNIT	0.334	-0.141	0.179	0.356	0.182	0.839	
R06605	Protein tyrosine phosphatase, non-receptor type 1	0.009	0.420	0.317	0.441	0.129	0.627	
AA446259	Protein tyrosine phosphatase, non-receptor type 12	0.287	0.413	0.184	-0.285	0.860	0.852	
AA428195	Protein tyrosine phosphatase, non-receptor type 2	0.324	-0.042	0.088	0.061	0.432	0.788	
AA682684	Protein tyrosine phosphatase, non-receptor type 3	0.346	0.156	0.017	0.346	0.466	0.419	
AA262719	Protein tyrosine phosphatase, non-receptor type 7	0.153	0.027	0.297	0.392	-0.085	0.517	
AA434420	Protein tyrosine phosphatase, non-receptor type 9	-0.242	0.018	0.166	0.235	0.134	0.865	
H82419	Protein tyrosine phosphatase, receptor type, alpha polypeptide	-0.143	0.189	0.252	0.248	0.347	-0.063	
H18633	Protein tyrosine phosphatase, receptor type, beta polypeptide	0.395	0.357	0.050	-0.142	0.560	0.354	
H74265	Protein tyrosine phosphatase, receptor type, c polypeptide	-0.381	-0.112	-0.030	0.177	-0.100	-0.283	
R14294	Protein tyrosine phosphatase, receptor type, delta polypeptide	0.035	0.339	-0.068	0.021	-0.180	0.529	
AA598513	Protein tyrosine phosphatase, receptor type, f polypeptide	0.496	0.551	0.414	-0.301	0.991	0.804	
R38343	Protein tyrosine phosphatase, receptor type, gamma polypeptide	-0.302	0.157	0.147	0.067	0.075	-0.235	
H26426	Protein tyrosine phosphatase, receptor type, mu polypeptide	-0.033	0.425	0.238	0.017	0.068	0.541	
AA496902	PROTEIN XE7	0.485	0.472	-0.149	0.020	0.245	0.563	
AA453789	Protein-tyrosine kinase 7	-0.318	-0.183	-0.217	-0.307	0.380	0.285	
AA173454	Protein-tyrosine kinase RON	0.655	0.950	0.123	-0.041	0.747	0.711	
AA482128	Protein-tyrosine kinase tyk2 (non-receptor)	0.412	0.353	-0.021	0.108	0.175	0.739	
R45056	PROTEIN-TYROSINE PHOSPHATASE 2C	0.717	0.102	0.097	0.338	0.484	0.577	
AA476461	PROTEIN-TYROSINE PHOSPHATASE ZETA PRECURSOR	0.968	0.149	0.323	0.276	-0.744	0.202	
R45264	Proteolipid protein (Pelizaeus-Merzbacher disease, spastic paraplegia 2, uncomplicated)	1.096	1.111	0.430	0.430	1.080	0.328	
T62075	PROTHROMBIN PRECURSOR	0.734	0.753	0.022	0.204	0.442	0.717	
AA442991	Prothymosin alpha	0.706	0.095	0.503	0.674	0.312	0.607	
AA425746	Proto-oncogene AML1 (alternative products)	0.383	0.444	0.179	-0.206	0.580	0.539	
W56266	Proto-oncogene c-cot (protein-serine/threonine kinase)	0.588	0.484	0.180	0.311	0.254	0.182	
H05800	PROTO-ONCOGENE DBL PRECURSOR	0.234	-0.054	-0.514	-0.789	-0.060	0.480	
AA489965	PROTO-ONCOGENE TYROSINE-PROTEIN KINASE LCK	0.737	0.683	0.545	0.250	0.457	0.122	
AA151249	Protoporphyrinogen oxidase	-0.010	0.040	0.045	0.091	0.397	0.532	
AA425853	PTB-ASSOCIATED SPLICING FACTOR	0.599	0.547	0.093	0.146	0.202	-0.004	
T65772	pulmonary surfactant protein (SP5)	-0.531	0.275	-0.288	-0.360	0.274	0.475	
T65772	pulmonary surfactant protein (SP5)	0.390	0.233	0.096	0.183	0.018	0.432	
AA487267	PULMONARY SURFACTANT-ASSOCIATED PROTEIN A PRECURSOR	0.589	0.668	0.171	0.572	0.471	0.446	
AA521243	PUTATIVE 60S RIBOSOMAL PROTEIN	0.670	0.586	0.123	0.167	0.275	-0.297	
AA476272	PUTATIVE DNA BINDING PROTEIN A20	1.017	0.110	0.181	0.044	0.287	-0.226	
H48494	PUTATIVE GLUCOSAMINE-6-PHOSPHATE ISOMERASE	-0.593	-0.270	0.036	-0.370	-0.490	0.198	
H59614	PUTATIVE INSULIN-LIKE GROWTH FACTOR II ASSOCIATED PROTEIN	0.011	0.656	0.050	0.104	-0.217	0.243	
AA598561	PUTATIVE MUCIN CORE PROTEIN PRECURSOR 24	-0.715	-0.420	-0.164	-0.354	-0.770	0.307	
AA706929	PUTATIVE PROTEIN PHOSPHATASE 2C	-0.087	0.079	0.090	0.024	0.014	-0.369	
AA053393	PUTATIVE RECEPTOR PROTEIN	0.150	0.122	-0.304	0.009	-0.672	0.846	
H09721	PUTATIVE SERINE/THREONINE-PROTEIN KINASE P78	-0.215	-0.026	-0.423	-0.579	-0.320	0.688	
T77729	Pyruvate carboxylase	0.471	0.317	0.424	0.326	0.115	0.275	
T65758	Pyruvate dehydrogenase (lipoamide) alpha 1	0.062	0.563	-0.142	-0.212	-0.070	0.554	
AA521401	Pyruvate dehydrogenase (lipoamide) beta	0.323	0.401	0.057	-0.168	0.480	-0.351	
AA169469	Pyruvate dehydrogenase kinase, isoenzyme 4	1.775	0.633	0.893	0.824	0.603	-0.178	
R08829	Pyruvate kinase, liver	-0.516	-0.389	-0.696	-0.600	-0.423	0.778	
AA490938	Quinone oxidoreductase (NQO2)	0.702	0.474	0.070	-0.250	0.604	0.575	
T82414	RAB2, member RAS oncogene family	0.565	0.781	0.165	0.213	0.511	0.598	
H51113	RAB3A, member RAS oncogene family	-0.225	-0.688	-0.656	-0.484	-1.188	0.578	
W44889	RAB6, member RAS oncogene family	0.511	0.312	0.318	0.109	0.513	0.557	
N53449	RAD52 (S. cerevisiae) homolog	-0.695	-0.118	-0.629	-0.486	-0.154	0.591	
AA056390	Radin blood group	0.453	1.309	-0.954	0.710	0.767	0.599	
AA479781	Radixin	0.470	0.768	-0.052	-0.082	0.117	0.765	
AA676460	RAG (recombination activating gene) cohort 1	-0.063	0.238	-0.160	0.072	0.288	0.466	
R40127	RAN binding protein 1	-1.080	-0.281	-0.422	-0.502	-0.350	0.995	
AA682897	RAP1, GTPase activating protein 1	0.606	0.232	0.218	0.094	0.326	0.527	
AA279804	RAP1A, member of RAS oncogene family	0.319	0.655	-0.054	-0.080	0.172	0.657	
AA598496	RAS GTPASE-ACTIVATING-LIKE PROTEIN IQGAP1	-0.019	-0.254	-0.187	0.033	-0.916	0.545	
R76314	Ras homolog gene family, member G (rho G)	-0.332	0.252	-0.104	0.015	0.341	0.417	
R21416	RAS-LIKE PROTEIN TC21	0.389	0.777	0.204	0.381	0.619	0.821	
AA521232	RAS-related C3 botulinum toxin substrate 2	0.211	0.587	0.005	0.051	0.186	0.208	
N69689	RAS-RELATED PROTEIN RAB-1A	0.510	0.290	0.057	0.372	0.433	0.350	
R51167	RAS-RELATED PROTEIN RAB-4A	-0.021	0.535	-0.011	0.029	-0.277	0.624	
H11455	RAS-RELATED PROTEIN RAB-5A	-0.140	0.297	-0.016	0.322	0.301	0.444	
H94892	RAS-RELATED PROTEIN RAL-A	0.238	0.420	0.290	0.514	0.701	0.419	
AA487526	Receptor protein-tyrosine kinase EDDR1	2.354	2.035	0.156	0.691	1.904	0.877	
AA074224	Recoverin	0.411	0.035	0.167	0.107	0.179	0.768	
AA456585	RecQ protein-like (DNA helicase Q1-like)	0.116	0.507	0.053	0.218	0.090	0.611	
AA625855	Regenerating islet-derived 1 alpha (pancreatic stone protein, pancreatic thread protein)	0.788	0.691	0.805	0.352	0.977	0.945	
AA017544	Regulator of G-protein signaling 1	0.578	0.163	-0.232	0.529	0.189	0.357	
AA156342	Regulator of nonsense transcripts 1	0.539	-0.014	-0.226	0.091	0.224	0.899	
AA458630	RENIN PRECURSOR, RENAL	0.031	0.318	0.029	0.279	0.937	0.654	
H73714	Replication factor C (activator 1) 1 (145kD)	-0.372	0.259	-0.093	-0.043	0.405	0.401	
N93924	Replication factor C, 37-kD subunit	-0.476	-0.172	-0.218	-0.182	0.899	0.669	
AA873056	Replication protein A (E coli RecA homolog, RAD51 homolog)	-0.100	0.130	0.105	0.087	0.359	0.567	
H59259	Replication protein A (E coli RecA homolog, RAD51 homolog)	-0.374	0.189	-0.136	-0.026	0.653	0.629	
R39861	Replication protein A2 (32kD)	-0.177	0.337	0.125	0.353	0.895	0.345	
AA458868	Restin (Reed-Steinberg cell-expressed intermediate filament-associated protein)	-0.139	0.291	0.142	0.126	0.838	0.724	
H24956	Ret proto-oncogene (multiple endocrine neoplasia MEN2A, MEN2B and medullary thyroid carcinoma 1)	0.300	0.718	0.152	0.267	0.741	0.496	
H64114	Retinal outer segment membrane protein 1	-0.110	0.288	-0.152	-0.173	0.332	0.157	
AA045192	Retinoblastoma 1 (including osteosarcoma)	0.256	0.695	-0.046	-0.094	-0.111	0.169	
AA424950	RETINOBLASTOMA BINDING PROTEIN 3	-0.135	0.383	0.163	0.086	0.324	0.547	
AA428365	RETINOBLASTOMA BINDING PROTEIN P48	-1.084	-0.395	-0.093	-0.183	-0.458	0.610	
AA126328	Retinoblastoma-binding protein 1 (alternative products)	0.272	0.318	-0.160	-0.204	-0.119	0.275	
H84048	Retinoblastoma-like 1 (p107)	-0.036	0.127	0.116	-0.036	0.142	0.602	
N50554	RETINOBLASTOMA-LIKE PROTEIN 2	-0.499	-0.299	-0.481	-0.577	0.202	-0.270	
AA419238	RETINOIC ACID RECEPTOR BETA-2	0.209	0.145	-0.152	-0.501	0.238	0.111	
AA456438	Retinoic acid receptor, gamma 1	1.335	0.458	0.811	0.630	0.916	0.434	
AA633882	Retinol dehydrogenase 1 (11-cis)	0.401	0.695	0.437	0.545	0.270	0.573	
AA011014	Retinol-binding protein 3, interstitial	0.739	0.858	0.280	0.385	0.476	0.900	
N53959	Rhesus blood group, D antigen	0.280	0.648	-0.373	0.052	-0.215	0.490	
AA443302	RhoC	-0.397	-0.037	0.240	0.179	0.005	0.634	
AA464544	RHOMBOTIN-2	-0.056	-0.032	-0.931	-1.370	-0.358	-0.332	
T60163	Ribonuclease L (2',5'-oligoadenylate synthetase-dependent)	0.489	-0.228	-0.030	0.252	-0.376	0.841	
T70056	Ribonuclease L (2',5'-oligoadenylate synthetase-dependent) inhibitor	0.680	0.817	0.609	0.434	1.047	0.617	
AA485893	Ribonuclease, RNase A family, 1 (pancreatic)	0.451	0.285	0.675	1.174	0.334	0.620	
R88243	Ribonuclease/angiogenin inhibitor	0.266	-0.297	0.633	0.637	0.296	0.660	
AA633549	RIBONUCLEOSIDE-DIPHOSPHATE REDUCTASE M1 CHAIN	1.073	-0.086	1.686	0.507	0.829	0.450	
AA187351	Ribonucleotide reductase M2 polypeptide	0.925	0.902	-0.082	-0.120	0.628	0.328	
AA127100	Ribophorin I	0.214	-0.028	0.145	-0.013	0.436	-0.500	
N20072	RIBOSE 5-PHOSPHATE ISOMERASE	0.450	0.814	0.413	0.201	0.531	0.308	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA485911	Ribosomal protein L17	-0.962	0.311	-0.902	-1.244	-0.409	0.364	
AA083485	Ribosomal protein L19	-0.492	-0.441	-0.316	-0.773	-0.359	0.545	
AA464743	Ribosomal protein L21	-0.222	-0.471	-0.183	-0.958	-0.132	0.699	
AA596178	Ribosomal protein L27a	2.279	1.408	0.746	0.501	1.269	0.456	
AA063631	Ribosomal protein L3	-1.352	-0.728	-0.620	-1.861	-1.341	-0.517	
W15277	Ribosomal protein L31	-0.300	0.098	0.207	-0.374	0.044	-0.405	
R43544	Ribosomal protein L32	-0.236	-0.098	0.062	-0.005	-0.343	0.331	
AA873351	Ribosomal protein L35a	0.044	0.268	0.135	0.026	0.526	0.415	
AA683077	Ribosomal protein L37	0.304	1.372	0.203	0.106	0.351	0.789	
AA683359	Ribosomal protein L44	1.351	1.692	-0.073	0.111	0.590	0.609	
AA496880	Ribosomal protein L5	0.153	0.722	0.283	0.914	1.531	-0.536	
AA628908	Ribosomal protein L6	0.290	0.419	-0.260	0.037	1.017	-0.315	
AA412470	Ribosomal protein L7	0.109	0.253	-0.336	-0.299	0.798	1.151	
H23422	Ribosomal protein L7a	-0.711	-0.621	-0.223	-0.412	-0.283	0.479	
AA629641	Ribosomal protein S13	-0.316	0.263	-0.156	0.264	0.286	0.544	
AA668301	Ribosomal protein S16	-0.192	0.330	0.232	0.954	0.617	0.597	
AA281057	Ribosomal protein S17	0.303	0.169	-0.343	-0.107	0.224	0.529	
R63811	Ribosomal protein S25	0.466	0.442	0.435	0.478	0.567	0.438	
AA655556	Ribosomal protein S28	-0.852	0.553	-0.636	-0.245	0.584	0.020	
AA411343	Ribosomal protein S29	-0.076	0.158	0.349	0.256	0.759	-0.671	
AA888182	Ribosomal protein S4, X-linked	-2.291	-0.855	-0.783	-1.866	-0.581	-0.084	
T69468	Ribosomal protein S4, Y-linked	-0.156	0.122	0.098	-0.353	0.294	0.326	
AA456616	Ribosomal protein S5	-0.018	0.378	0.692	0.399	0.666	0.377	
AA425446	RIBOSOMAL PROTEIN S6 KINASE	-0.348	0.198	0.138	0.101	0.193	0.454	
AA452574	Ribosomal protein S6 kinase, 90kD, polypeptide 2	-0.039	0.309	0.372	0.255	0.474	0.526	
N53351	Ric (Drosophila)-like (expressed in neurons)	-2.072	-1.142	-0.925	-1.459	-1.057	0.522	
T64905	Rieger syndrome (solurshin)	-0.570	0.026	0.112	-0.324	-0.148	-0.331	
AA425772	Ring finger protein 1	0.771	0.718	1.717	1.028	1.345	-0.025	
H72918	RING3 PROTEIN	0.231	0.312	0.360	0.046	0.484	0.072	
N74956	RNA polymerase II polypeptide B (140 kD)	0.282	0.639	0.119	0.384	0.982	0.575	
AA430658	RNA polymerase II, polypeptide C (33kD)	-0.460	0.141	-0.092	-0.077	0.228	0.222	
AA815407	RYANODINE RECEPTOR, SKELETAL MUSCLE	-0.426	-0.269	-0.091	-0.420	-0.074	0.438	
T77811	RYK receptor-like tyrosine kinase	0.697	1.576	-0.051	0.286	0.939	0.358	
AA444051	S100 calcium-binding protein A10 (annexin I ligand, calpactin I, light polypeptide (p11))	-0.041	0.386	-0.096	0.360	0.657	1.031	
AA055242	S100 calcium-binding protein A3 (formerly S100E)	-0.156	0.078	0.326	0.530	0.301	0.427	
AA086471	S100 calcium-binding protein A8 (calgranulin A)	-0.208	0.250	0.254	0.466	0.510	0.350	
AA424045	S-100 PROTEIN, BETA CHAIN	0.296	-0.105	0.146	0.269	0.204	0.235	
R32848	S-100P PROTEIN	0.336	0.163	0.428	0.142	0.216	-0.006	
AA485626	S-adenosylhomocysteine hydrolase	0.134	0.304	0.348	0.161	0.052	0.136	
R62300	S-adenosylmethionine decarboxylase 1	0.021	0.239	0.420	0.087	0.371	0.631	
T59245	S-ADENOSYLMETHIONINE SYNTHETASE GAMMA FORM	-0.396	0.014	0.326	0.479	-0.302	0.090	
AA234982	Sarcoglycan, delta (35kD dystrophin-associated glycoprotein)	-0.280	0.975	0.415	0.089	0.210	0.066	
R59993	SEC14 (S. cerevisiae)-like	-1.194	-0.468	-0.879	-0.923	-0.638	0.342	
AA775616	Secreted phosphoprotein 1 (osteopontin, bone sialoprotein I)	0.892	0.730	0.312	0.443	0.866	0.510	
H27864	SECRETORANIN II PRECURSOR	0.134	0.248	-0.366	-0.176	-0.122	0.509	
AA670429	Secretory granule, neuroendocrine protein 1 (7B2 protein)	-0.337	-0.038	0.046	0.286	0.280	0.849	
H39991	Selectin E (endothelial adhesion molecule 1)	-0.169	-0.002	-0.086	-0.243	0.194	-0.228	
H00662	Selectin L (lymphocyte adhesion molecule 1)	0.136	0.591	-0.264	-0.598	-0.339	-0.351	
R52639	SERINE HYDROXYMETHYLTRANSFERASE, CYTOSOLIC	0.490	0.213	0.698	0.285	0.443	0.134	
AA845156	Serine protease inhibitor, Kazal type 1	-0.104	-0.009	-0.003	0.035	0.556	0.432	
AA451792	SERINE/THREONINE-PROTEIN PHOSPHATASE 2B CATALYTIC SUBUNIT, BETA ISOFORM	1.270	-0.208	1.385	0.655	1.846	0.589	
AA283125	SERINE/THREONINE-PROTEIN KINASE PCTAIRE-1	0.227	-0.945	0.174	0.245	-1.470	0.888	
AA136882	SERINE/THREONINE-PROTEIN KINASE RECEPTOR R1 PRECURSOR	-0.083	0.145	0.205	0.566	0.280	0.694	
H43049	SERINE/THREONINE-PROTEIN KINASE RECEPTOR R3 PRECURSOR	-0.005	0.089	0.042	-0.183	-0.248	-0.284	
N68565	SERUM ALBUMIN PRECURSOR	0.198	0.137	0.078	-0.157	0.047	0.023	
H25546	SERUM AMYLOID A PROTEIN PRECURSOR	0.273	0.282	-0.026	0.017	0.326	0.148	
H73234	SERUM PROTEIN MSE55	0.294	0.105	-0.265	-0.179	0.077	0.608	
AA630734	SERYL-TRNA SYNTHETASE	0.770	-0.234	0.400	-0.134	-0.022	0.725	
AA608548	SET PROTEIN	0.255	0.398	0.463	0.275	0.387	0.821	
T69271	Sex hormone-binding globulin	0.316	0.175	0.111	0.049	0.275	0.945	
AA427595	SHB adaptor protein (a Src homology 2 protein)	-0.278	0.120	0.106	0.063	0.180	0.696	
AA598652	Sialyltransferase 1 (beta-galactoside alpha-2,6-sialyltransferase)	0.185	0.543	0.218	0.153	0.167	0.507	
AA169183	Sialyltransferase 8 (alpha-N-acetylneuraminic acid: alpha-2,8-sialyltransferase, GD3 synthase)	0.120	0.392	0.074	0.317	0.440	0.681	
AA114407	Signal recognition particle 19 kD protein	-0.202	0.601	-0.107	0.107	0.510	0.532	
AA599078	Signal recognition particle 54 kD protein	-0.270	0.164	0.191	0.324	-0.088	0.046	
R43360	Signal recognition particle 9 kD protein	0.322	0.181	0.113	0.311	0.224	0.694	
AA598621	Signal recognition particle receptor ('docking protein')	1.210	0.541	0.443	0.697	1.116	0.644	
AA450360	Signal sequence receptor, alpha	1.104	0.670	0.517	0.563	0.314	-0.167	
AA489075	SIGNAL TRANSDUCER AND ACTIVATOR OF TRANSCRIPTION 1-ALPHA/BETA	-0.049	-0.546	0.660	-0.051	1.500	0.673	
AA399410	Signal transducer and activator of transcription 3 (acute-phase response factor)	-0.203	0.110	-0.357	-0.435	-0.328	0.912	
R91570	Signal transducer and activator of transcription 4	-0.184	0.063	0.227	0.646	-0.137	-0.328	
AA280647	Signal transducer and activator of transcription 5A	0.535	0.532	-0.001	-0.189	0.289	0.209	
R51607	Similar to PROTEIN TRANSLATION INITIATION FACTOR SUI1 HOMOLOG	0.242	-0.003	0.103	0.434	0.023	0.384	
R51607	Similar to PROTEIN TRANSLATION INITIATION FACTOR SUI1 HOMOLOG	0.834	0.553	0.386	0.139	0.491	0.358	
AA465203	Single-stranded DNA-binding protein	1.824	0.379	1.770	0.535	1.337	0.203	
N31587	SINGLE-STRANDED DNA-BINDING PROTEIN MSSP-1	-0.001	0.246	0.872	1.197	0.066	0.156	
N45131	Sjogren syndrome antigen A1 (52kD, ribonucleoprotein autoantigen SS-A/Ro)	0.058	0.330	0.140	0.685	-0.525	-0.044	
H29485	Sjogren syndrome antigen B (autoantigen La)	-0.138	0.623	-0.179	0.172	1.049	0.401	
AA844447	SKI-RELATED ONCOGENE SNON	0.278	0.375	0.440	0.215	0.248	-0.222	
H08564	SM22-ALPHA HOMOLOG	0.225	0.362	-0.020	0.246	0.232	0.074	
W69211	Small inducible cytokine A11 (eotaxin)	0.121	0.466	0.205	0.834	-0.018	0.254	
AA425102	Small inducible cytokine A2 (monocyte chemoattractant protein 1, homologous to mouse Sig-je)	-0.171	0.373	-0.052	0.112	0.505	0.661	
AA677522	Small inducible cytokine A3 (homologous to mouse Mip-1a)	1.084	1.716	1.016	0.813	0.992	0.642	
H62864	Small inducible cytokine A4 (homologous to mouse Mip-1b)	-0.049	0.632	0.148	0.142	0.725	0.575	
AA486072	Small inducible cytokine A5 (RANTES)	0.427	0.214	0.322	-0.261	0.515	0.357	
AA678021	Small nuclear ribonucleoprotein polypeptide E	0.121	0.610	0.163	0.890	0.933	0.665	
T54926	Small nuclear ribonucleoprotein polypeptide N	0.558	0.609	0.405	1.180	0.277	0.475	
AA599116	Small nuclear ribonucleoprotein polypeptides B and B1	0.466	0.510	0.107	0.090	0.481	0.419	
H16255	SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1	0.129	0.409	0.261	0.268	1.012	0.807	
AA043335	Small nuclear RNA activating complex, polypeptide 3, 50kD	-0.019	0.649	0.158	0.273	0.695	0.189	
AA447684	Small proline-rich protein 1B (comifin)	0.031	1.567	0.155	0.317	1.150	-0.112	
AA490477	Smooth muscle myosin heavy chain isoform SMemb [human, umbilical cord, fetal sorta, mRNA Partial,	0.157	0.679	0.233	0.007	0.827	0.342	
AA496809	SNF2 (sucrose nonfermenting, yeast, homolog)-like 1	0.152	0.306	0.346	0.341	0.433	0.871	
N49856	SODIUM- AND CHLORIDE-DEPENDENT BETAINE TRANSPORTER	-0.048	-0.003	0.055	0.019	-0.228	0.664	
AA775899	Sodium/potassium ATPase, gamma subunit	-0.417	-0.109	0.177	-0.375	-0.243	0.281	
AA496417	Sodium/potassium-transporting ATPase beta-3 subunit	0.411	-0.061	-0.394	-0.345	-0.245	0.356	
AA043133	Solute carrier family 16 (monocarboxylic acid transporters), member 1	-0.569	-0.315	-0.273	-0.566	-0.418	1.555	
R50337	Solute carrier family 19 (folate transporter), member 1	0.476	0.520	0.020	0.214	0.368	0.545	
R00833	Solute carrier family 2 (facilitated glucose transporter), member 2	0.471	0.444	0.143	0.155	0.637	0.888	
H38550	Solute carrier family 2 (facilitated glucose transporter), member 5	0.557	0.547	0.334	0.249	0.597	0.555	
R15785	Solute carrier family 3 (cystine, dibasic and neutral amino acid transporters, activator of cystine, dibasic	0.288	-0.394	-0.516	-0.185	-0.426	1.455	
T66708	Solute carrier family 4, anion exchanger, member 1 (erythrocyte membrane protein band 3-like 1)	0.304	0.438	0.155	0.451	0.331	0.711	
W45518	Solute carrier family 4, anion exchanger, member 2 (erythrocyte membrane protein band 3-like 1)	-0.039	0.073	0.029	0.497	0.064	0.459	
H46254	Solute carrier family 6 (neurotransmitter transporter, GABA), member 1	-0.349	-0.236	-0.068	-0.007	-0.312	0.740	
R62384	Solute carrier family 6 (neurotransmitter transporter, noradrenalin), member 2	-0.358	-0.013	0.016	0.277	0.016	0.549	
AA458982	Solute carrier family 9 (sodium/hydrogen exchanger), isoform 1 (antiporter, Na+/H+, amiloride sensitive	0.662	0.431	0.431	0.279	1.042	0.701	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA455369	Solute carrier family 9 (sodium/hydrogen exchanger), isoform 1 (antiporter, Na ⁺ /H ⁺ , amiloride sensitive)	0.720	0.689	0.469	0.543	0.897	0.468	
AA431849	SON DNA binding protein	0.621	1.065	0.027	0.316	1.224	0.490	
AA700604	Sorbitol dehydrogenase	-0.043	0.094	0.186	0.362	-0.084	0.607	
H60859	Sorcin	0.334	0.510	0.234	0.282	0.605	0.596	
AA449430	Sorting nexin 1	0.049	0.330	0.217	0.146	0.276	0.888	
AA775423	SOX-3 PROTEIN	0.524	0.779	0.218	0.517	0.645	0.882	
T81103	Sp2 transcription factor	0.748	0.822	0.024	0.186	0.417	0.872	
W31688	Sp3 transcription factor	0.436	0.551	0.294	0.321	0.657	1.273	
H95960	SPARC/osteonectin	0.082	0.295	0.359	0.412	0.167	0.310	
AA022581	Special AT-rich sequence binding protein 1 (binds to nuclear matrix/scaffold-associating DNA's)	0.039	-0.076	0.234	0.626	-0.256	0.273	
T80117	Spectrin, alpha, non-erythrocytic 1 (alpha-fodrin)	-0.020	0.622	-0.135	0.289	0.164	0.527	
AA011320	Spectrin, beta, erythrocytic (includes sperocytosis, clinical type I)	0.128	0.411	0.112	0.542	0.434	0.075	
AA018591	Spectrin, beta, non-erythrocytic 1	0.388	0.119	0.306	0.642	0.039	0.863	
AA400437	SPERM ANTIGEN HE2 PRECURSOR	0.164	0.184	0.341	0.037	0.530	0.786	
AA669545	Spermidine synthase	0.232	0.501	0.716	0.616	0.412	0.599	
AA011215	Spermidine/spermine N1-acetyltransferase	0.624	0.548	0.310	0.130	0.605	0.393	
R58991	Spermidine/spermine N1-acetyltransferase mRNA, complete cds	-0.182	-0.232	-0.538	-0.478	-0.428	0.405	
R58991	Spermidine/spermine N1-acetyltransferase mRNA, complete cds	-0.419	-0.056	-0.515	-0.581	-0.299	-0.606	
AA416890	Sphingomyelin phosphodiesterase 1, acid lysosomal (acid sphingomyelinase)	1.900	0.920	0.808	0.812	0.561	-0.005	
N71628	Spi-B transcription factor (Spi-1/PU.1 related)	0.334	0.168	0.341	-0.304	-0.109	0.330	
R10604	Spinocerebellar ataxia 2 (olivopontocerebellar ataxia 2, autosomal dominant)	0.401	0.366	0.249	-0.432	0.454	-0.129	
AA026557	Spleen focus forming virus (SFFV) proviral integration oncogene sp1	-0.015	0.348	-0.065	-0.002	0.322	0.018	
AA598572	Spleen tyrosine kinase	0.225	0.273	-0.003	0.493	0.349	-0.037	
AA405748	SPlicing FACTOR U2AF 65 KD SUBUNIT	0.155	-0.180	-0.594	-0.215	-0.178	0.163	
AA454585	Splicing factor, arginine/serine-rich 2	0.712	0.812	0.526	0.058	0.876	0.171	
AA398883	SQUAMOUS CELL CARCINOMA ANTIGEN 1	1.678	1.504	0.202	1.420	0.498	0.509	
AA453420	SRY (sex determining region Y)-box 4	0.159	0.325	0.579	0.881	0.034	-0.327	
AA400464	SRY (sex-determining region Y)-box 9 (campomelic dysplasia, autosomal sex-reversal)	0.174	0.623	0.388	0.513	0.498	0.546	
AA873060	STATHMIN	0.183	-0.089	0.348	0.015	0.420	0.618	
AA098896	STERIOD HORMONE RECEPTOR ERR1	-0.646	-0.252	-0.036	-0.339	-0.224	1.284	
AA679454	Steroidogenic acute regulatory protein	0.059	0.226	0.212	0.043	0.073	0.587	
AA664009	Sterol carrier protein 2	0.191	0.072	-0.050	-0.345	-0.591	-0.019	
R07296	Sterol O-acyltransferase (acyl-Coenzyme A: cholesterol acyltransferase)	0.045	0.431	0.285	0.102	0.558	0.743	
H15155	STERYL-SULFATASE PRECURSOR	0.214	0.479	0.268	0.077	0.801	1.196	
T94169	STRESS-ACTIVATED PROTEIN KINASE JNK1	0.537	0.461	0.146	0.138	0.144	0.420	
AA157286	STRESS-ACTIVATED PROTEIN KINASE JNK2	-0.333	0.556	-0.655	-1.032	-0.221	0.137	
AA447115	Stromal cell-derived factor 1	0.364	-0.173	0.207	0.267	0.500	-1.046	
W51794	Stromelysin	2.895	1.789	1.300	0.796	1.887	0.808	
T70043	SUCCINATE DEHYDROGENASE	-0.078	0.166	0.084	-0.425	-0.212	0.947	
AA463510	Succinate dehydrogenase 1, iron sulphur (lp) subunit	0.258	0.356	0.399	0.408	0.692	0.955	
N72215	Sulfated glycoprotein 1	0.329	0.656	0.318	0.559	0.300	1.462	
AA725397	Sulfotransferase, dehydroepiandrosterone (DHEA)-preferring	0.054	-0.284	0.103	0.212	0.286	0.693	
AA599127	Superoxide dismutase 1 (Cu/Zn)	-0.170	0.089	0.157	0.178	0.027	0.195	
AA488084	Superoxide dismutase 2, mitochondrial	0.005	-0.454	0.276	0.062	-0.554	-0.063	
AA454160	Superoxide dismutase 3, extracellular	1.246	0.980	1.142	-0.021	0.885	0.539	
AA126200	Suppression of tumorigenicity 2	0.214	0.117	0.226	0.294	0.260	0.814	
AA487571	Surfactant, pulmonary-associated protein C	1.113	0.919	0.259	0.469	0.522	0.971	
AA699560	Surfeit 1	-0.300	-0.281	-0.480	-0.883	-0.482	1.440	
AA663884	SYNAPTOSOMAL ASSOCIATED PROTEIN 25	0.536	0.965	0.456	0.716	-0.010	1.127	
AA683073	SYNAPTOTAGMIN 1	0.305	0.599	0.299	0.313	-0.228	0.946	
AA074511	Syndecan 1	-1.173	-1.034	-1.429	-1.770	-1.388	0.614	
AA045058	Syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)	0.280	0.479	-0.039	-0.075	0.487	-0.479	
AA148737	Syndecan 4 (amphiglycan, ryudocan)	1.353	0.529	0.443	0.465	0.618	1.076	
AA452148	Syntaxin 5A	-0.007	-0.328	-0.482	-0.582	-0.645	0.969	
AA699926	Syntrophin, alpha (dystrophin-associated protein A1, 59kD, acidic component)	-0.158	-0.107	-0.158	-0.401	-0.305	1.260	
AA455067	Synuclein, alpha (non A4 component of amyloid precursor)	0.360	0.685	0.105	0.171	0.848	0.938	
AA427491	T cell receptor alpha-chain	0.650	0.462	0.256	0.310	0.724	1.190	
N50880	T cell receptor gamma chain	0.359	0.132	-0.111	-0.196	0.144	0.477	
AA400234	T3 receptor-associating cofactor-1 [human, fetal liver, mRNA, 2930 nt]	0.283	0.135	0.446	-0.129	0.340	1.218	
AA446659	Tachykinin 2 (substance K, neurokinin A, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide 1)	0.083	-0.095	-0.049	0.053	0.088	0.651	
N50549	TATA box binding protein	0.443	0.562	0.450	-0.304	-0.023	0.980	
T51236	T-cell acute lymphocytic leukemia 1 (NOTE: redefinition of symbol)	-0.615	-0.662	-0.909	-1.209	-1.105	0.812	
T64192	T-cell receptor, beta cluster	-0.676	-0.164	-0.366	0.089	-0.434	0.679	
AA670107	T-cell receptor, delta	0.701	0.291	0.423	0.497	0.251	0.411	
AA055946	T-CELL SURFACE GLYCOPROTEIN CD3 DELTA CHAIN PRECURSOR	0.495	0.684	-0.074	-0.084	-0.281	0.046	
AA406028	T-CELL SURFACE GLYCOPROTEIN CD5 PRECURSOR	0.277	0.615	0.485	0.333	0.779	0.740	
AA293671	T-CELL SURFACE GLYCOPROTEIN CD8 BETA 3 CHAIN PRECURSOR	0.410	0.030	0.264	-0.041	0.540	0.809	
R46821	T-COMPLEX PROTEIN 1, ALPHA SUBUNIT	0.489	0.090	0.332	0.213	0.766	0.725	
AA529692	T-COMPLEX PROTEIN 1, EPSILON SUBUNIT	0.425	0.650	0.122	0.386	0.181	0.122	
AA779321	Tec protein tyrosine kinase	2.047	0.773	2.452	0.258	1.647	-0.016	
AA629591	Testis enhanced gene transcript	1.034	0.446	0.880	0.106	0.680	0.408	
AA586278	Testis specific protein 1 (probe H4-1 p3-1)	0.440	0.264	0.124	-0.049	0.595	0.310	
AA509598	Testis specific protein, Y-linked	-0.037	-0.464	0.023	-0.636	-0.528	0.723	
AA453467	Testis-specific lactate dehydrogenase (LDHC4, LDHX) mRNA	0.229	0.291	-0.194	0.000	0.520	0.927	
W73889	Tetranectin (plasminogen-binding protein)	0.825	-0.024	-0.034	-0.740	0.514	0.454	
AA677257	Thiopurine S-methyltransferase	0.396	0.494	0.894	0.401	0.516	-0.245	
AA431967	Thioredoxin	0.091	-0.036	-0.597	-0.585	0.261	-0.163	
AA464849	Thioredoxin reductase	0.584	0.473	0.378	0.562	0.629	0.533	
AA61065	Thiosulfate sulfurtransferase (rhodanese)	-0.102	0.147	0.135	0.157	0.336	0.741	
AA630628	Threonyl-tRNA synthetase	-0.367	-0.715	-0.389	-0.747	-0.797	0.786	
H59981	Thrombomodulin	0.474	0.478	0.273	0.090	0.697	0.834	
AA479058	Thrombopoietin (myeloproliferative leukemia virus oncogene ligand, megakaryocyte growth and devel	-0.126	0.064	-0.053	-0.518	-0.023	0.847	
AA280514	Thrombopoietin (myeloproliferative leukemia virus oncogene ligand, megakaryocyte growth and devel	0.263	0.278	-0.156	0.455	0.031	0.438	
AA64532	Thrombospondin 1	0.176	0.300	0.105	-0.080	0.509	1.525	
H38240	Thrombospondin 2	0.005	0.149	-0.038	-0.057	0.097	0.680	
AA423957	Thrombospondin 4	-0.110	0.109	0.259	0.124	0.298	0.225	
AA039932	Thromboxane A2 receptor	0.511	0.332	-0.029	0.621	0.112	0.586	
R76437	THROMBOXANE-A SYNTHASE	0.478	0.225	0.765	0.387	0.324	0.509	
AA496283	THY-1 MEMBRANE GLYCOPROTEIN PRECURSOR	0.787	0.574	0.372	0.434	0.373	0.814	
AA778098	Thymidine kinase 1, soluble	0.600	0.357	0.160	0.223	0.432	1.639	
AA663310	Thymidylate synthase	-0.074	0.082	0.334	0.021	0.067	0.970	
AA678998	Thymoplatin	-0.356	0.031	0.108	-0.277	0.068	0.740	
AA486085	THYMOSIN BETA-10	0.024	-0.114	0.058	-0.039	-0.121	1.748	
AA486207	Thyroid autoantigen 70kD (Ku antigen)	0.232	0.205	0.215	0.628	-0.704	0.683	
AA454168	Thyroid hormone receptor, alpha (avian erythroblastic leukemia viral (v-erb-a) oncogene homolog)	0.688	0.443	0.648	0.427	0.828	0.186	
AA069596	THYROLIBERIN PRECURSOR	0.666	0.090	0.767	0.057	0.060	-0.568	
T72171	Thyroxine-binding globulin	0.142	0.229	-0.118	-0.128	0.144	0.461	
N59426	TIA1 cytotoxic granule-associated RNA-binding protein-like 1	-0.365	0.235	0.289	0.799	0.266	0.476	
H50344	Tight junction protein 1 (zona occludens 1)	0.386	0.482	0.251	0.088	0.617	0.540	
AA399473	TISSUE FACTOR PATHWAY INHIBITOR 2 PRECURSOR	0.210	0.218	0.008	0.330	0.199	0.330	
T50282	TISSUE FACTOR PATHWAY INHIBITOR PRECURSOR	0.070	0.235	0.185	0.577	0.032	0.361	
H80215	Tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)	0.531	0.695	0.145	-0.109	0.550	-0.152	
AA468280	Tissue inhibitor of metalloproteinase 2	0.763	0.414	0.487	0.336	0.222	-0.225	
AA099153	Tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)	0.608	0.280	0.490	0.276	0.577	0.270	
R47893	TONSILLAR LYMPHOCYTE LD78 BETA PROTEIN PRECURSOR	0.721	0.731	0.537	0.712	0.739	0.303	
R22050	Topoisomerase (DNA) II beta (180kD)	0.833	0.556	-0.023	-0.091	0.816	0.676	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
AA155640	TRANSCOBALAMIN I PRECURSOR	0.380	0.148	0.668	0.229	0.146	0.661	
AA490459	Transcobalamin II	0.472	0.344	-0.008	-0.185	0.923	1.015	
AA136533	Transcription elongation factor B (SIII), polypeptide 1-like	0.434	0.224	0.510	0.202	0.476	0.182	
AA133129	Transcription elongation factor B (SIII), polypeptide 3 (110kD, elongin A)	0.870	0.472	0.273	0.465	0.309	-0.273	
H28344	TRANSCRIPTION ELONGATION FACTOR S-II	0.734	0.732	1.072	0.351	0.799	0.088	
AA496576	Transcription factor 11 (basic leucine zipper type)	0.509	0.724	0.410	-0.235	0.220	-0.521	
AA488366	Transcription factor 12 (HTF4, helix-loop-helix transcription factors 4)	0.544	0.473	0.381	0.385	0.251	-0.513	
AA028644	Transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	0.941	0.673	0.095	0.118	0.906	0.177	
AA449118	Transcription factor 6-like 1 (mitochondrial transcription factor 1-like)	0.133	-0.074	0.262	0.098	-0.050	0.233	
AA481988	Transcription factor 7 (T-cell specific)	0.419	0.740	-0.179	0.081	1.143	0.988	
N63770	Transcription factor AP-2 beta (activating enhancer-binding protein 2 beta)	-0.072	-0.131	0.081	-0.322	0.324	1.563	
AA284693	Transcription factor AP-4 (activating enhancer-binding protein 4)	0.208	-0.036	-0.219	0.154	-0.189	0.754	
AA529904	Transcription factor COUP 2 (a.k.a. ARP1)	0.295	0.879	0.341	-0.194	0.263	0.008	
AA443547	TRANSCRIPTION FACTOR P65	0.093	0.012	0.082	-0.103	0.019	0.069	
AA258001	TRANSCRIPTION FACTOR RELB	0.371	0.220	0.129	0.003	0.162	0.152	
AA455964	TRANSCRIPTION INITIATION FACTOR IIE, ALPHA SUBUNIT	-0.168	0.186	-0.050	-0.178	0.296	0.760	
AA479196	TRANSCRIPTION INITIATION FACTOR IIF, BETA SUBUNIT	0.158	0.417	0.191	0.333	0.585	1.190	
AA677306	TRANSCRIPTION INITIATION FACTOR TFIID 250 KD SUBUNIT	0.630	0.848	0.154	0.520	-0.208	0.483	
T60168	Transcription termination factor, RNA polymerase I	0.577	0.407	0.364	0.492	0.328	0.753	
AA039370	TRANSCRIPTIONAL ENHANCER FACTOR TEF-1	0.117	0.132	0.096	0.445	0.534	0.790	
AA291389	TRANSCRIPTIONAL REGULATOR ISGF3 GAMMA SUBUNIT	0.273	0.491	0.272	0.018	1.073	-0.049	
AA704482	Transducin-like enhancer of split 4, homolog of Drosophila E(sp1)	-0.058	-0.308	-0.208	-0.382	-0.459	1.000	
AA873564	TRANSDUCIN-LIKE ENHANCER PROTEIN 2	-0.542	-0.350	0.300	0.077	0.358	0.937	
H95531	Transferrin	0.076	0.750	-0.166	-0.029	0.342	1.017	
AA487593	Transferrin receptor (p90, CD71)	0.539	0.215	0.325	0.347	0.264	0.272	
AA487427	TRANSFORMATION-SENSITIVE PROTEIN IEF SSP 3521	0.413	0.219	0.319	0.830	-0.118	0.885	
AA424833	Transforming growth factor beta	0.244	0.130	-0.101	-0.253	0.006	1.015	
R35467	TRANSFORMING GROWTH FACTOR BETA 1 PRECURSOR	0.095	0.429	0.072	0.170	0.659	0.836	
AA233738	Transforming growth factor, beta 2	0.330	0.598	0.168	0.184	0.275	0.962	
AA040617	Transforming growth factor, beta 3	1.530	0.517	1.355	0.803	1.027	0.853	
AA487034	Transforming growth factor, beta receptor II (70-80kD)	-0.323	0.124	0.349	-0.261	0.207	1.003	
H62473	Transforming growth factor, beta receptor III (betaglycan, 300kD)	0.407	0.746	0.122	-0.128	0.219	0.899	
AA633901	Transforming growth factor, beta-induced, 68kD	-0.218	-0.031	-0.072	-0.382	-0.193	-0.137	
AA495790	TRANSFORMING PROTEIN RHOB	0.187	0.337	0.116	-0.215	0.374	0.520	
N90862	Transglutaminase 3 (E polypeptide, protein-glutamine-gamma-glutamyltransferase)	0.145	0.018	-0.189	-0.090	0.413	-0.422	
AA017132	Transient receptor potential channel 1	0.463	0.967	0.335	0.081	0.085	1.135	
AA07545	Transition protein 1 (TP1)	-0.321	-0.098	-0.166	0.342	0.213	-0.199	
AA070358	Transketolase (Wernicke-Korsakoff syndrome)	0.686	0.959	0.329	0.325	0.462	-0.140	
AA457050	Teacher Collins syndrome susceptibility protein	0.600	0.388	0.281	0.426	0.235	0.257	
AA256580	TRICHOHYALIN	0.908	0.490	0.160	0.203	0.380	0.827	
AA663983	Triosephosphate isomerase 1	-0.697	-0.275	-0.451	-1.010	-1.139	1.441	
R39682	Tripeptidyl peptidase II	1.323	1.402	0.643	0.469	1.538	0.678	
R60301	TrkB (alternatively spliced) [human, brain, mRNA, 1870 nt]	0.179	0.180	-0.199	-0.092	-0.125	1.151	
AA235388	Tropomodulin	-0.005	-0.336	0.060	0.065	-0.104	1.166	
V58092	Tropomyosin alpha chain (skeletal muscle)	0.233	0.414	0.344	0.010	0.304	0.914	
AA477400	Tropomyosin beta chain (skeletal muscle)	-0.583	-0.398	-0.572	-0.679	-0.409	0.558	
AA181334	Tropoin 1 (skeletal fast)	-0.214	0.038	0.247	-0.333	0.164	0.401	
AA182848	Tropoin 1, skeletal, slow	0.664	0.213	0.410	0.488	0.400	0.280	
AA449932	TROPONIN T, FAST SKELETAL MUSCLE ISOFORM BETA	0.008	0.319	0.117	0.713	0.463	0.322	
AA888929	Tropoin T1, skeletal, slow	1.198	1.156	0.569	0.537	1.183	0.360	
N70734	Tropoin T2 (cardiac)	0.235	0.148	0.441	-0.004	0.208	0.463	
AA664040	TRYPTOPHANYL-TRNA SYNTHETASE	0.322	0.486	0.650	0.697	0.305	0.278	
H37774	Tuberin	0.612	0.668	0.512	-0.048	0.436	-0.448	
AA180742	TUBULIN ALPHA-4 CHAIN	-0.033	0.071	0.087	0.260	0.477	0.104	
T77733	Tubulin, gamma polypeptide	0.051	-0.015	0.100	0.132	-0.051	0.130	
AA150416	Tumor necrosis factor receptor 2 (75kD)	-1.333	-1.301	-1.073	-1.334	-1.234	0.067	
WB2764	TUMOR NECROSIS FACTOR-INDUCIBLE PROTEIN TSG-6 PRECURSOR	0.955	0.746	0.490	0.383	0.485	0.076	
R39356	Tumor protein p53 (Li-Fraumeni syndrome)	0.380	-0.003	0.329	-0.122	0.361	-0.081	
AA045699	TUMOR-ASSOCIATED ANTIGEN CO-029	0.119	0.185	0.235	-0.036	0.165	0.928	
AA487893	TUMOR-ASSOCIATED ANTIGEN L6	-0.122	0.053	-0.218	-0.205	-0.095	0.200	
H23460	TUP1-like enhancer of split gene 1	0.245	0.362	0.328	0.248	0.344	0.028	
H12312	TXK tyrosine kinase	0.434	0.346	0.234	0.578	0.262	0.460	
N67048	Type 3 iodothyronine deiodinase	0.088	0.172	0.277	0.209	0.507	0.386	
H68070	TYPE-1A ANGIOTENSIN II RECEPTOR	0.545	0.645	0.130	0.159	0.477	-0.032	
N31933	Tyrosinase (oculocutaneous albinism IA)	0.247	0.092	0.273	0.378	0.353	-0.507	
H62527	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide	0.571	0.190	0.520	0.464	0.484	0.208	
N69107	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide	0.666	0.627	0.514	0.364	0.015	0.238	
AA486473	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide	0.628	0.388	-0.008	0.171	0.685	0.411	
AA447751	Tyrosine hydroxylase	-0.373	-0.150	0.046	0.564	0.125	0.519	
AA079775	TYROSINE-PROTEIN KINASE CSK	0.765	0.791	0.266	0.297	0.753	0.027	
R78541	TYROSINE-PROTEIN KINASE ITK/TSK	1.387	0.991	1.148	0.757	1.859	0.706	
H84481	TYROSINE-PROTEIN KINASE RECEPTOR ECK PRECURSOR	0.561	0.597	-0.069	-0.101	0.917	0.341	
N90246	TYROSINE-PROTEIN KINASE RECEPTOR EPH PRECURSOR	0.187	0.060	0.184	0.010	0.173	0.037	
AA432062	TYROSINE-PROTEIN KINASE RECEPTOR TIE-1 PRECURSOR	-0.496	-0.067	-0.137	-0.369	0.237	0.886	
H02848	TYROSINE-PROTEIN KINASE RECEPTOR TIE-2 PRECURSOR	0.764	0.919	1.108	1.049	0.849	0.095	
R70488	U1 SMALL NUCLEAR RIBONUCLEOPROTEIN A	0.279	0.715	-0.150	-0.009	0.226	0.529	
R02346	U1 snRNP 70K protein	0.650	0.483	0.731	0.967	0.434	0.335	
AA122272	U2 SMALL NUCLEAR RIBONUCLEOPROTEIN A'	0.145	0.283	0.399	0.446	0.643	0.084	
R17676	UBIQUINOL-CYTOCHROME C REDUCTASE COMPLEX 11 KD PROTEIN PRECURSOR	0.714	1.376	0.783	0.185	0.919	0.591	
AA664284	UBIQUINOL-CYTOCHROME C REDUCTASE COMPLEX 14 KD PROTEIN	-0.038	-0.025	0.077	-0.128	0.347	0.943	
T67270	UBIQUINOL-CYTOCHROME C REDUCTASE COMPLEX SUBUNIT VI REQUIRING PROTEIN	-0.135	0.387	1.105	0.031	1.050	0.477	
AA663058	Ubiquinol-cytochrome c reductase core protein II	-1.045	-0.603	-0.402	-0.436	-0.722	0.856	
AA448184	UBIQUINOL-CYTOCHROME C REDUCTASE IRON-SULFUR SUBUNIT PRECURSOR	-0.161	-0.346	-0.252	-0.198	-0.328	0.125	
AA625632	Ubiquitin A-52 residue ribosomal protein fusion product 1	-0.624	-0.778	-0.048	-0.549	-0.565	0.319	
AA878561	Ubiquitin A-52 residue ribosomal protein fusion product 1	-0.980	-0.262	0.022	-0.575	-0.058	0.360	
AA588670	Ubiquitin activating enzyme E1	0.691	0.588	0.624	0.236	0.715	0.408	
AA670438	UBIQUITIN CARBOXYL-TERMINAL HYDROLASE ISOZYME L1	0.403	0.162	0.366	0.072	0.370	0.902	
N27190	UBIQUITIN CARBOXYL-TERMINAL HYDROLASE ISOZYME L3	-0.200	-0.062	-0.125	-0.307	-0.245	0.477	
AA465536	UBIQUITIN CARBOXYL-TERMINAL HYDROLASE T	0.456	0.353	0.230	0.089	0.541	-0.081	
AA437374	UBIQUITIN CARBOXYL-TERMINAL HYDROLASE TRE-2	0.184	0.067	-0.245	-0.356	0.032	-0.038	
W90381	Ubiquitin protein ligase E3A (human papilloma virus E6-associated protein)	0.261	-0.408	-0.011	0.174	-0.896	0.461	
N23454	Ubiquitin-activating enzyme E1, like	1.313	0.210	1.025	0.998	1.282	1.023	
AA600173	Ubiquitin-conjugating enzyme E2A (RAD6 homolog)	0.477	0.199	0.368	0.257	0.447	1.309	
AA598492	Ubiquitin-conjugating enzyme E2B (RAD6 homolog)	-0.020	-0.112	-0.291	-0.192	0.258	-0.466	
H20743	UBIQUITIN-CONJUGATING ENZYME E2-CDC34 COMPLEMENTING	0.217	0.508	0.221	-0.042	0.739	0.275	
AA520978	Ubiquitin-conjugating enzyme E2H (homologous to yeast UBC8)	1.438	-0.235	0.915	-0.098	0.286	0.197	
AA487197	Ubiquitin-conjugating enzyme E2I (homologous to yeast UBC9)	0.028	-0.040	-0.083	-0.283	-0.310	0.786	
N49405	Ubiquitin-like protein	-0.098	-0.228	0.081	0.080	0.251	1.015	
N64628	UBIQUITIN-LIKE PROTEIN GDX	0.248	0.472	-0.002	0.013	0.500	0.895	
T50788	UDP glucuronosyltransferase precursor (UGT2B15)	0.134	0.144	0.651	0.592	0.157	0.568	
H68509	UDP-GLUCURONOSYLTRANSFERASE 2B10 PRECURSOR, MICROSOMAL	-0.131	-0.062	-0.241	-0.535	-0.016	0.060	
N53031	UDP-GLUCURONOSYLTRANSFERASE 2B4 PRECURSOR, MICROSOMAL	0.155	0.107	0.409	0.174	0.225	0.307	
H61243	Uncoupling protein 2 (mitochondrial, proton carrier)	0.506	0.047	0.583	0.328	1.018	0.810	
R51835	unknown EST	0.399	1.868	0.353	0.635	0.606	0.787	
R60313	unknown EST	0.128	0.265	0.693	-0.217	-0.500	0.441	
R51835	unknown EST	1.889	1.436	0.604	0.761	1.337	-0.744	

ACC	Gene Name	ZR75	YY3	YY1	468	MPI	231	(log base 2 ratio)
R52541	unknown EST	-0.396	0.413	-0.358	0.038	0.188	-0.178	
R56088	unknown EST	0.176	0.341	0.082	0.268	0.460	0.139	
R60313	unknown EST	0.278	0.101	0.525	0.343	0.323	0.831	
R36958	unknown EST	-1.505	-0.416	-0.890	-1.413	-0.715	1.015	
R51865	unknown EST	0.278	0.091	0.243	0.160	0.087	0.272	
H07132	unknown EST	0.422	0.330	0.178	0.541	0.486	0.028	
N21573	unknown EST	-0.696	-0.353	-0.164	0.027	-0.311	-0.229	
H08808	unknown EST	-0.335	-0.280	0.182	0.473	-0.151	0.873	
H05439	unknown EST	-0.119	-0.014	0.285	0.617	0.038	0.699	
R51835	unknown EST	1.144	0.436	-0.170	0.250	-0.068	0.990	
R60313	unknown EST	-0.185	0.456	-0.376	-0.010	-0.460	0.723	
R51835	unknown EST	1.498	1.963	0.782	0.701	1.697	-1.109	
R52541	unknown EST	0.584	0.416	0.377	0.034	-0.006	0.405	
R56088	unknown EST	0.340	0.409	-0.148	-0.090	0.213	0.662	
R60313	unknown EST	0.489	0.608	0.019	0.188	0.538	0.452	
R36958	unknown EST	0.854	0.784	0.361	0.164	0.438	0.541	
R51865	unknown EST	0.445	0.327	-0.064	-0.283	-0.107	0.827	
H07132	unknown EST	0.239	0.530	0.161	0.076	0.325	0.499	
N21573	unknown EST	0.046	0.610	-0.132	-0.248	-0.170	-0.696	
H08808	unknown EST	0.909	0.690	0.057	-0.334	0.061	0.319	
H05439	unknown EST	0.138	0.655	-0.151	-0.422	-0.294	0.844	
AA425900	Uracil-DNA glycosylase	-0.509	-0.384	-0.186	-0.228	0.089	1.087	
H15112	URACIL-DNA GLYCOSYLASE 1 PRECURSOR	0.085	0.217	-0.388	-0.164	-0.087	1.076	
AA426227	Uridine monophosphate synthetase (orotate phosphoribosyl transferase and orotidine-5'-decarboxylase)	-0.120	0.005	-0.004	-0.348	0.086	0.112	
AA284669	Urokinase-type plasminogen activator	0.183	-0.027	0.108	-0.062	0.155	0.135	
AA424344	Uroporphyrinogen decarboxylase	0.177	0.000	0.212	0.034	0.103	0.808	
AA443089	Uroporphyrinogen III synthase	0.119	0.030	0.762	0.184	-0.085	0.042	
T63761	Uteroglobin	0.218	0.129	0.151	0.138	0.080	0.827	
AA676840	UTROPHIN	-0.176	-0.005	-0.071	0.023	-0.211	0.745	
AA496785	V-abl Abelson murine leukemia viral oncogene homolog 1	1.536	0.474	1.329	0.561	1.349	0.816	
AA496800	Vacuolar H ⁺ ATPase proton channel subunit	0.212	-0.031	0.433	0.520	0.026	0.058	
AA464217	V-akt murine thymoma viral oncogene homolog 1	-0.099	-0.171	-0.366	-0.115	-0.221	0.162	
AA457097	V-akt murine thymoma viral oncogene homolog 2	0.175	0.492	0.898	0.675	-0.089	1.460	
AA457123	VALYL-TRNA SYNTHETASE	1.455	0.892	0.251	0.480	0.337	0.809	
H16591	Vascular cell adhesion molecule 1	0.387	0.202	0.538	0.501	0.602	0.911	
R45059	Vascular endothelial growth factor	0.436	0.554	0.256	0.502	-0.002	1.096	
AA630120	Vascular endothelial growth factor B	-0.078	-0.141	-0.470	-0.167	0.214	0.994	
H73241	VASOACTIVE INTESTINAL POLYPEPTIDE RECEPTOR 1 PRECURSOR	0.083	0.400	-0.020	0.031	0.247	0.045	
AA410429	Vasodilator-stimulated phosphoprotein	0.707	-0.159	1.146	0.772	1.247	1.198	
AA682337	Vav 2 oncogene	-0.440	-0.208	-0.452	0.128	0.494	0.569	
N24966	V-erb-b2 avian erythroblastic leukemia viral oncogene homolog 3 (alternative products)	2.122	1.652	1.176	0.575	1.267	0.936	
H96235	V-ets avian erythroblastosis virus E26 oncogene homolog 2	0.088	0.289	0.706	0.546	0.171	1.036	
AA876039	VILLIN	-0.054	0.201	0.097	-0.211	0.024	1.285	
AA411440	Villin 2 (ezrin)	-0.310	0.005	0.492	0.325	0.080	0.411	
AA486321	Vimentin	0.712	0.439	0.809	0.695	1.179	0.833	
AA486728	Vinculin	0.242	0.049	0.066	0.056	0.023	0.978	
H65066	Visinin-like 1	0.225	0.402	0.357	0.420	0.057	1.214	
AA485226	Vitamin D (1,25-dihydroxyvitamin D3) receptor	0.350	-0.003	0.249	0.075	0.303	1.022	
T68102	VITAMIN K-DEPENDENT GAMMA-CARBOXYLASE	0.519	1.230	-0.225	-0.009	-0.040	1.251	
AA690349	VITAMIN K-DEPENDENT PROTEIN Z PRECURSOR	0.482	0.499	-0.103	0.311	0.332	0.553	
AA461527	V-jun avian sarcoma virus 17 oncogene homolog	-0.154	-0.183	-0.068	-0.234	-0.043	0.677	
N24824	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	-0.420	0.130	0.036	-0.243	0.412	0.976	
AA457034	V-myb avian myeloblastosis viral oncogene homolog-like 2	-0.486	0.148	-0.829	-0.698	-0.191	1.098	
AA464600	V-myc avian myelocytomatosis viral oncogene homolog	-0.020	0.009	0.526	0.248	0.118	0.980	
AA404059	Voltage-dependent anion channel 1	-0.230	0.324	-0.213	0.078	0.552	1.052	
T66814	Voltage-dependent anion channel 2	-0.116	0.241	0.091	0.145	0.704	0.645	
R54176	Von Hippel-Lindau syndrome	0.189	0.258	0.588	0.324	0.655	0.838	
AA485883	VON WILLEBRAND FACTOR PRECURSOR	0.345	0.260	0.438	0.049	0.001	0.841	
AA442994	V-rat murine sarcoma 3611 viral oncogene homolog 1	0.750	0.771	0.399	0.259	0.498	0.568	
W88568	V-rat murine sarcoma viral oncogene homolog B1	0.579	0.608	-0.039	-0.279	0.309	0.907	
N25425	V-rat-1 murine leukemia viral oncogene homolog 1	0.225	0.323	-0.064	-0.082	-0.095	0.794	
W15297	V-rat simian leukemia viral oncogene homolog B (ras related; GTP binding protein)	0.046	-0.159	-0.163	-0.163	0.185	0.788	
N32146	V-rel avian reticuloendotheliosis viral oncogene homolog	-0.321	0.079	-0.053	-0.306	-0.378	0.705	
W69471	V-ski avian sarcoma viral oncogene homolog	0.655	0.603	0.327	0.157	0.566	0.680	
T50498	V-ski avian sarcoma viral oncogene homolog	0.330	0.295	0.013	0.234	0.120	0.727	
R83837	V-yes-1 Yamaguchi sarcoma viral related oncogene homolog	0.558	0.476	0.394	-0.708	0.420	0.510	
AA378396	WEE1-LIKE PROTEIN KINASE	0.283	0.842	0.222	0.248	0.438	0.657	
AA131527	WHITE PROTEIN HOMOLOG	0.382	0.250	-0.106	-0.087	0.470	1.403	
AA130187	Wilms tumor 1	-0.088	0.427	0.063	0.328	0.540	0.709	
N78828	Wingless-type MMTV integration site 2, human homolog	0.481	0.488	-0.154	0.145	0.427	0.912	
W49672	Wingless-type MMTV integration site 5A, human homolog	-0.046	-0.006	0.248	0.252	0.172	0.907	
H51193	Wiskott-Aldrich syndrome (eczema-thrombocytopenia)	0.350	0.446	0.531	0.396	0.432	1.010	
AA394240	X BOX BINDING PROTEIN-1	1.179	1.208	0.381	0.798	0.782	0.618	
R09503	Xanthine dehydrogenase	-1.296	-0.329	-0.411	-1.085	-0.828	0.390	
H85518	X-arrestin	0.516	0.891	0.006	0.668	0.558	0.874	
AA485380	XE168 PROTEIN	0.489	0.558	0.111	0.168	0.377	0.780	
AA453300	Xeroderma pigmentosum, complementation group A	0.206	0.093	0.143	0.017	0.123	0.194	
AA410435	X-LINKED HELICASE II	0.587	0.534	0.068	0.059	0.403	1.180	
AA491227	YY1 transcription factor	0.032	0.236	0.090	0.205	0.147	0.929	
H19440	ZAK1-4 mRNA in human skin fibroblast, complete cds	0.127	0.344	-0.060	0.201	0.197	0.724	
AA877080	Zinc finger protein 10 (KOX 1)	0.309	0.511	-0.080	0.096	0.559	0.729	
AA448919	Zinc finger protein 131 (clone pHZ-10)	-0.147	0.182	-0.447	-0.543	-0.649	0.610	
H17048	Zinc finger protein 133 (clone pHZ-13)	0.163	0.028	0.270	0.866	-0.009	0.998	
N67262	Zinc finger protein 135 (clone pHZ-17)	-0.068	0.079	-0.109	0.098	0.040	0.742	
AA043458	Zinc finger protein 137 (clone pHZ-30)	-0.217	0.010	0.087	-0.133	0.221	0.664	
AA211508	Zinc finger protein 139 (clone pHZ-37)	-0.066	0.125	0.101	-0.188	0.158	1.081	
AA443659	Zinc finger protein 143 (clone pHZ-1)	0.151	0.044	0.163	-0.365	0.387	1.072	
N26148	Zinc finger protein 148 (pHZ-52)	0.010	-0.163	-0.616	-0.981	-0.609	-0.191	
AA436372	Zinc finger protein 151 (pHZ-67)	-0.035	0.114	0.268	0.247	-0.176	0.236	
AA700196	Zinc finger protein 174	0.450	0.279	0.383	0.577	0.058	0.743	
T57877	Zinc finger protein 3 (A8-51)	-0.045	0.215	0.382	0.337	0.245	0.913	
N64607	Zinc finger protein 35 (clone HF.10)	0.417	0.151	0.329	0.318	0.376	0.466	
AA279941	Zinc finger protein 42 (myeloid-specific retinoic acid-responsive)	0.510	0.535	0.302	0.007	-0.001	0.606	
AA773894	Zinc finger protein 43 (HTF6)	0.936	0.762	0.819	0.152	0.200	-0.081	
AA629838	Zinc finger protein 74 (Cos52)	-0.196	0.009	-0.069	-0.137	-0.128	1.122	
AA626012	Zinc finger protein 76	0.582	0.333	0.282	0.272	0.488	0.632	
N69908	Zinc finger protein 9 (a cellular retroviral nucleic acid binding protein)	0.620	0.663	0.034	-0.111	0.806	0.459	
R26526	Zinc finger protein basonuclin	-0.138	0.147	0.425	0.567	-0.170	0.686	
AA088434	ZINC FINGER PROTEIN HF.12	0.217	0.475	0.041	0.180	-0.047	0.172	
R36383	Zinc finger protein homologous to Zfp-36 in mouse	0.557	0.484	0.476	0.311	0.135	1.273	
N77807	ZINC FINGER PROTEIN HRX	0.809	0.920	0.983	1.969	0.247	1.194	
AA406372	Zinc finger protein, X-linked	0.284	0.260	0.162	0.433	-0.197	0.742	
AA862465	Zinc-alpha-2-glycoprotein 1	0.566	0.355	-0.308	0.286	0.338	-0.032	
AA425602	ZONA PELLUCIDA SPERM-BINDING PROTEIN 3A PRECURSOR	-0.251	-0.258	1.777	0.198	1.423	1.369	

Personnel Supported by this Award**Brent H. Cochran, Ph.D****Nicholas Grammatikakis, Ph.D.****Publications resulting from this award:**

- 1 .Grammatikakis, N., Lin, J.-H., Grammatikakis, A., Tsichlis, P. N. and Cochran, B. H. (1999). p50^{cdc37} acting in concert with Hsp90 is required for Raf-1 function. *Mol. Cell Biol.* *19*, 1661-1672.
2. Silverstein, A. M., Grammatikakis, N., Cochran, B. H., Chinkers, M. and Pratt, W. B. (1998). p50(cdc37) binds directly to the catalytic domain of Raf as well as to a site on hsp90 that is topologically adjacent to the tetratricopeptide repeat binding site. *J Biol Chem* *273*, 20090-5.