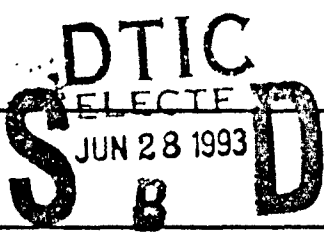


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Studies conducted during 1992 showed that a) new inhibitors of the enzyme COMT (catechol-O-methyl transferase) could modify the metabolism of dopamine in the corpus striatum, both basally and after dopamine administration; b) the decrease in serotonin release from brain neurons (as assessed by in vivo microdialysis) caused by giving animals repeated doses of serotonin-uptake blockers (like fluoxetine or dexfenfluramine) can be largely blocked by also treating them with a drug (methiothepin) which blocks serotonin receptors. This indicates that the change in serotonin reflects a regulated physiological process, and not neurotoxicity; c) systemically-administrated nicotine increases the release of serotonin from brain neurons; and, d) in human subjects, lower doses of oral melatonin than had been thought effective (10 mg) can produce significant behavioral effects (sleepiness).					
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Technical Report AFOSR-90-0326

January 1, 1992 - December 31, 1992

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SUMMARY:

Halfway through this period the P.I. was informed that Air Force support for this research program would terminate at the end of the project year. For this reason all available resources were used to complete a few ongoing projects, and the new ones proposed for 1992 and thereafter were not started. Studies conducted during 1992 showed that a) new inhibitors of the enzyme COMT (catechol-O-methyl transferase) could modify the metabolism of dopamine in the corpus striatum, both basally and after dopamine administration; b) the decrease in serotonin release from brain neurons (as assessed by in vivo microdialysis) caused by giving animals repeated doses of serotonin-uptake blockers (like fluoxetine or dexfenfluramine) can be largely blocked by also treating them with a drug (methiothepin) which blocks serotonin receptors. This indicates that the change in serotonin reflects a regulated physiological process, and not neurotoxicity; c) systemically-administrated nicotine increases the release of serotonin from brain neurons; and, d) in human subjects, lower doses of oral melatonin than had been thought effective (10 mg) can produce significant behavioral effects (sleepiness).

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