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(6) EXPLORATION OF NEW CHEMOTHERAPEUTICS

FOR

INFECTIOUS DISEASES

~~RESPONSIBLE INVESTIGATOR~~

(10) by

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EXPLORATION OF NEW CHEMOTHERAPEUTICS FOR INFECTIOUS DISEASES

Fundamental Studies on Protomycin, an Antiamoebic Antibiotic and Cephalomycin, an Antiviral Antibiotic

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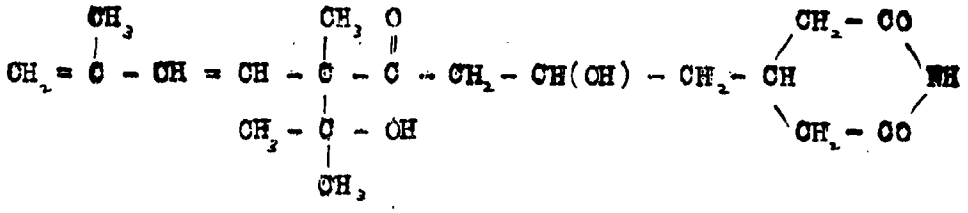
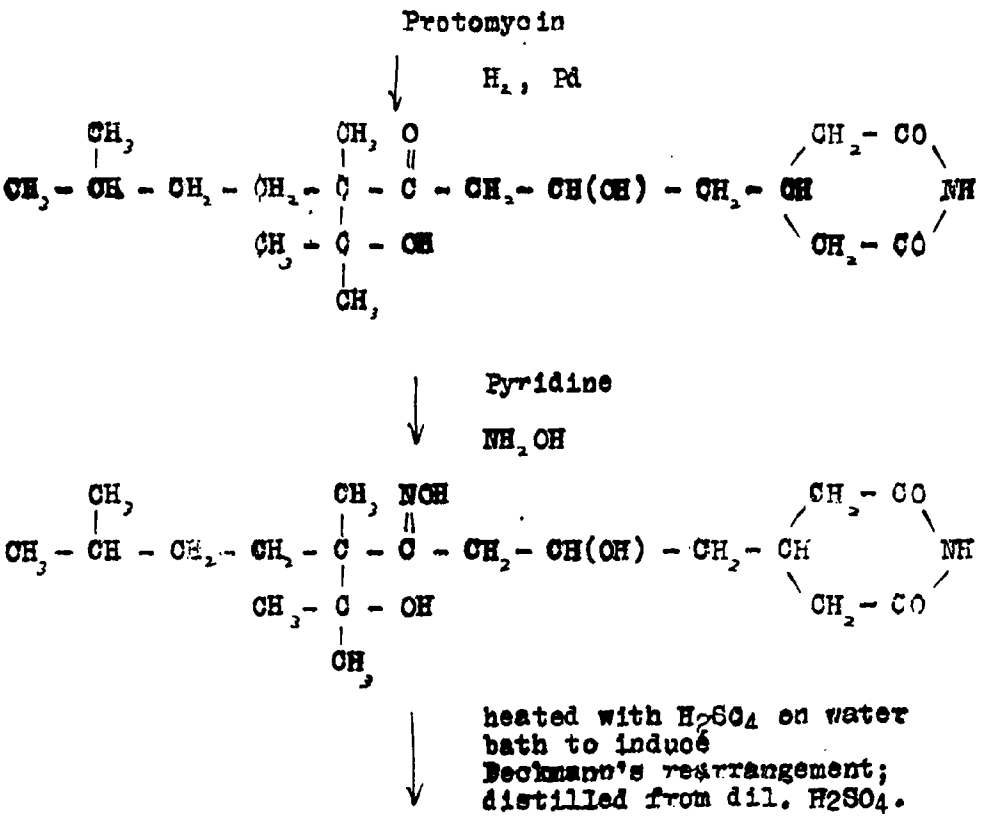
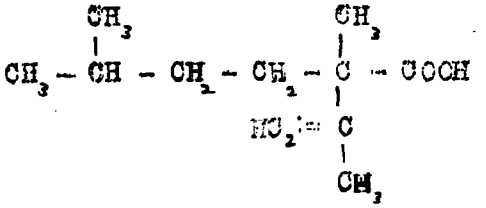
1. Protomycin

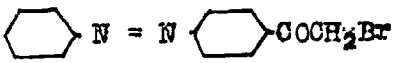
In the preceeding quatery report, we have proposed the structure for ptotomycin.

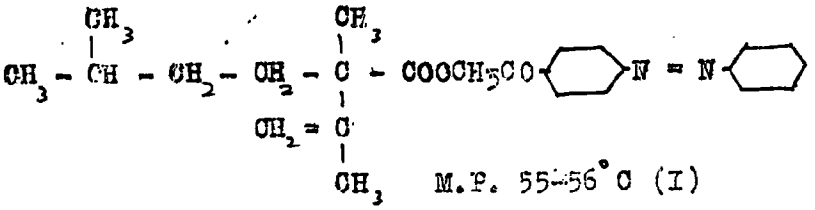


To prove this structure, an acid obtained by the following sequency of reactions remained still to be identified:



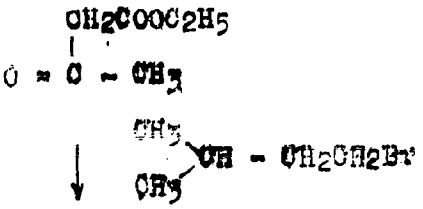


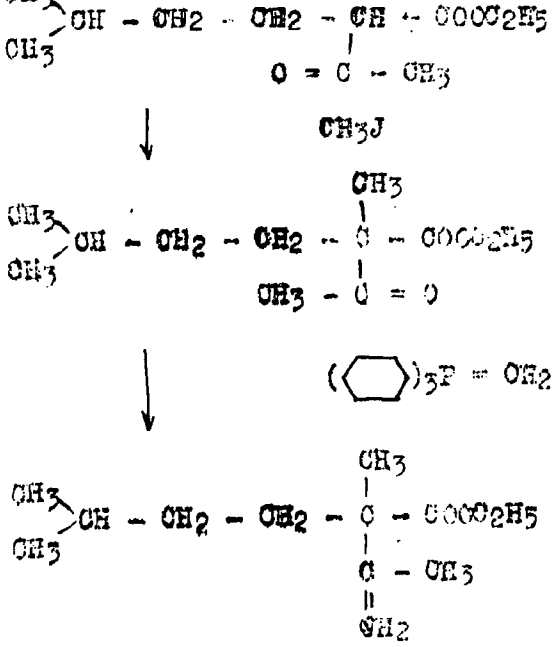




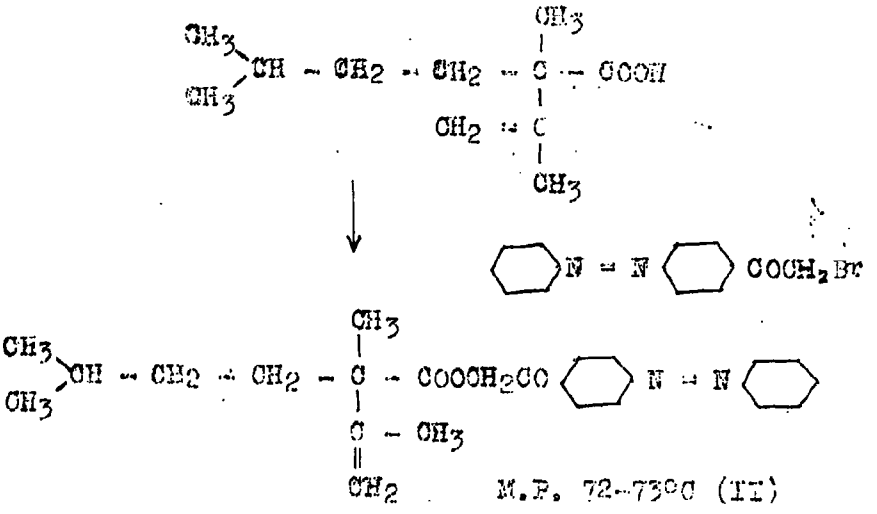
M.P. 55-56° C (I)

The corresponding acid ester was synthesized by the following sequency of reactions:





hydrolysis



M.P. 72-73°C (II)

Although mixed melting point of the products (I) and (II) was 55-56° C at several different proportions and their infrared spectra were almost identical each other except three absorption bands, we undertook the resolution of racemate (II) into optically active components. While the experiment is still under continuence, we obtained a fraction with M.P. 62-63°C from (II) with (M.P. 72-73°C).

2. Cephalomycin

Cephalomycin was separated into fractions by the chromatography on DEAE-cellulose. The most active component eluted with 0.4% NaOH was assayed for amino acid constitution by DNP method.
The result was as follows;

Amino Acids	Molaratio	Amino Acids	Molaratio
valine & leucine	2.7	proline	4.8
alanine	1.45	arginine	?
serine	0.95	histidine	?
glutamic & aspartic acid	4.9	methionine	?
threonine	0.90	phenylalanine	0.34
cystine	0.02	glycine	1.25

Protomycin was treated with pronase, a proteolytic enzyme selectively acting on L-amino acid moiety, to evaluate liberated amino acids. Because the protomycin is quantitatively hydrolysed with pronase, D-amino acid was supposed not to exist. Glycine, alanine, serine and threonine were detected as N-terminal groups by DNP-method.