

CHEMISTRY

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ABSTRACTS

Isolation and Characterization of a New Peptide Antibiotic. E. B. HERR, JR., M. E. HANEY, G. E. PITTINGER and C. E. HIGGENS, The Lilly Research Laboratories.—Many soil samples are examined in the search for new antibiotics. Recently, in such a screen, a new species of *Streptomyces* was isolated and named *Streptomyces capreolus*. This organism produces a peptide antibiotic with marked anti-tuberculosis activity. The active peptide is produced when the culture is grown on a medium of sugars, peptone, and inorganic salts. The antibiotic is a strongly basic peptide and is isolated as the tetrahydrochloride salt by adsorption on charcoal followed by fractional precipitation. Elemental analyses suggest an empirical formula of $C_{24}H_{57}O_{10}N_{13}Cl_4$. Electrometric titration indicates an approximate molecular weight of 885. A total hydrolysis of the antibiotic (5.7N HCl, 100°C., 24 hrs.) releases the neutral amino acids, alanine, serine, and glycine. These amino acids have been identified qualitatively by their chromatographic behavior. Three basic amino acids also have been identified following total hydrolysis. One was isolated, crystallized, and identified as $\alpha\beta$ diaminopropionic acid. A second basic amino acid appears to be ornithine or an analogous compound as determined by the chromatographic behavior of the free amino acid and the dinitrophenyl derivative. The third basic amino acid has been crystallized and does not appear to be a commonly known amino acid.

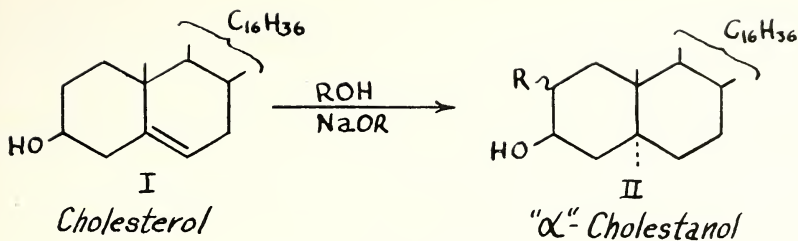
In vivo testing in mice shows this antibiotic to be highly effective against TB organisms. In addition to the anti-TB activity, the antibiotic has a low order of gram-negative activity. The compound is much less toxic than other anti-TB agents. The biological activity and some of the structural aspects of the antibiotic will be discussed.

Anomalous Meerwein-Ponndorf Reduction in Steroids . . . "α" Cholestanol. QUENTIN R. PETERSEN, Wabash College.—Cholesterol (I), when refluxed with strong base for a three hour period is completely modified, no unchanged cholesterol remaining.

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The oily product of this reaction has been examined exhaustively by chromatographic techniques.

Six pure compounds have been obtained from the reaction mixture, four of which contain no remaining unsaturation. The product obtained in highest yield (20%) appears to be an alkylated cholestanol (II, "α" cholestanol). Thus, the unique reaction shown below must have occurred.



The implications of the reduction of double bonds under Meerwein-Ponndorf conditions are discussed and some possible mechanistic paths leading to the observed products are suggested.

Ortho Substituted 2-Phenylquinolines. C. E. KASLOW and HENRY MOE, Indiana University.—A series of 2-(o-halophenyl)quinolines (X = F, Cl, or Br) were prepared. In one series, an attempt was made to introduce bromine in position-3 in through the usage of a 2-aryl-4-hydroxyquinoline. However when chlorine or bromine was introduced in place of the hydroxy group, hydrogenolysis was not selective enough to remove only the halogen in position-4. o-Halo-acetophenones and -propiophenones were prepared and subjected to the Pfitzinger reaction to give 2-(o-halophenyl)cinchoninic acids and 2-(o-halophenyl)-3-methylcinchoninic acids. These were decarboxylated to the 2-(o-halophenyl)quinolines and 2-(o-halophenyl)-3-methylquinolines. The o-haloacetophenones were converted to the corresponding phenacyl bromides and the latter to the phenacyl acetates which were, in turn, subjected to the Pfitzinger reaction. These 2-(o-halophenyl)-3-hydroxycinchoninic acids were also decarboxylated. The substituted quinolines were all converted to the methiodides. An attempt was made to carry out a resolution of some of the methiodides in which one might expect considerable hindrance to rotation but these were unsuccessful. A comparison of the ultraviolet spectra of the methiodides of the 2-(o-halophenyl)-quinolines and the 2-(o-halophenyl)-3-methylquinolines indicated that the aryl and quinoline rings could become coplanar. The synthesis of other quinoline compounds related to this work is described.