THE STRUCTURE OF MEDERMYCIN

Haruo Ogura and Kimio Furuhata

School of Pharmaceutical Sciences, Kitasato University,

Shirokane, Minato-ku, Tokyo 108, Japan

The isolation of the antibiotic medermycin from cultured broths of a Streptomyces K73 has been reported. We present chemical and physical data of medermycin which support the structure and stereochemistry proposed in the Chart. Medermycin benzene adduct $C_{24}H_{27}NO_8.C_6H_6$ was crystallized as orange prisms from benzene. ^{1}H-NMR data of this compound show a chelate peri-hydroxyl group signal at δ_H 12.50 and two vicinally arranged aromatic protons at δ_H 7.59 and 7.70.

Acetylation of medermycin with acetic anhydride in the presence of p-toluenesulfonic acid gave mono-acetate hydrochloride. On the other hand, acetylation of medermycin with acetic anhydride in the presence of pyridine gave diacetate hydrochloride.

Catalytic hydrogenation procedure of medermycin with 10% paradium charcoal in ethanol-acetic acid gave insoluble orange powder, which did not show a characteristic lactone carbonyl absorption at 1785 cm^{-1}. Cope elimination of N-oxide of the dihydromedermycin gave des(dimethylamino)dihydromedermycin. The ^{1}H-NMR data of these compounds show the sugar moiety is attached to C-6 or C-8.

From the CD curves of medermycin, and its derivatives, kalafungin, nanaomycin A and D, medermycin is confirmed as (1R,3R,4R)-9-hydroxy-1-methyl-8-[(2'R,3'S,4'R,6'R)-3'-hydroxy-2'-methyl-4'-(N,N-dimethylamino)-2'H-tetrahydropyran-6'-yl]-1H,3H,4H-5,10-dihydro-2-oxaanthracene-5,10-dion-3-acetic 12,4-lactone.