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Synthetic Studies of Amionoalcohol

Yasuo NAKAJIMA*

1) Synthetic study of Inosamines and Inosadiamines

epi-Inosamine-2, myo-inosamine-2, muco-inosamine-1, myo-inosadiamine-2, 4 and muco-inosadiamine-1, 6 have been synthesized from myo-inositol. Their structures have also been established by a study of the NMR spectra of their acetyl derivatives. When epi-inosamine-2 hydrochloride is treated with acetyl bromide, 1,5-dibromo-1,5-dideoxy-rac-inosamine-6 is obtained. Then the bromo compound is treated with sodium azide in boiling aqueous 2-methoxyethanol, followed by reduction myo-inosadiamine-2,4 and muco-inosadiamine-1,6 are obtained.

2) Synthetic study of thioaminoalcohl

1-Mercapto-2-amino-3-cyclohexanol has been synthesized from 2-amino-1,3-cyclohexanediol. When 2-acetamido-di-O-mesyl-1,3-cyclohexanediol is treated with sodium thioacetic acid in the mixture of alcohol and acetone, and subsequently acetylated, triacetyl-1-mercapto-2-amino-3-cyclohexanol is obtained. This structure has also been established by a study of NMR spectra of this acetyl derivative.

3) Synthetic study of phytosphingosine derivative

1-Methoxy-2-amino-3, 4-dihydroxyeicosane have been synthesized from cetyl bromide and 2-butyne-1,4-diol. When 4-methoxy-butenal prepared from 2-butyne-1,4-diol is condensed with cetyl bromide, 1-methoxy-4-hydroxy-2-eicosene is obtained. This compound is converted to the epoxide derivative. Then the epoxide is treated with methanolic ammonia, 1-methoxy-2-amino-3, 4-dihydroxyeicosane is obtained. Demethylation of this material is carried out giving anhydro-phytosphingosine.

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