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# Studies on the Configurations of Aminosugar Glucosides and Related Compounds

Kuniaki TATSUTA\*

The absolute configurations of kanamycin and related compounds have been determined by copper complex method.

The absolute configuration of kanamycin was recently proposed by Rinehart, *et al.* and Tatsuoka, *et al.*.

In the present paper, the copper complex method using tetrammin-cupric sulfate (TA-Cu) has been employed, in addition to Cupra B, to establish the absolute configurations of aminosugar glucosides and related compounds. The application of the above reagents to methyl  $\alpha$ - and  $\beta$ -D-glucosaminide and their N-acetyl derivatives, etc., lead to the conclusion that Cupra B is possible to form complex with vicinal-glycol and vicinal-aminoalcohol and that the TA-Cu reagent forms complex only with the latter.

The N-acetyl derivative of O-(3-amino-3-deoxy- $\alpha$ -D-glucopyranosyl)-deoxystreptamine was methylated with methyl iodide and silver oxide and followed by hydrolysis with 3 N hydrochloric acid. The hydrolyzate was chromatographed over cellulose powder using a solvent system of n-butanol-pyridine water-acetic acid (6 : 4 : 3 : 1, v/v) to give O, O'-dimethyl-N, N'-dimethyl-deoxystreptamine, m. p. 228°~231°C (decomp.),  $[\alpha]_{436}^{25} + 30.6^\circ$  (c 0.3, in water). The optical rotation of the compound in a Cupra B and TA-Cu solution showed strong dextrorotations,  $\Delta[M]_{436}^{25} + 1600^\circ$  and  $+1200^\circ$ , respectively, as expected. It has been, therefore, concluded that 3-amino-3-deoxy- $\alpha$ -D-glucose moiety of kanamycin is linked to C-6 position of deoxystreptamine in agreement with the absolute configuration proposed by the above mentioned authors.

The author has successfully applied the empirical rule of Reeves to aminoalcohols by using TA-Cu.

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