to be of the same order of activity as the authentic material.

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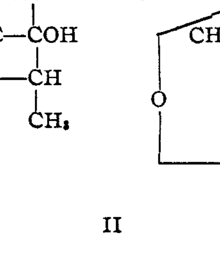
STREPTOMYCES ANTIBIOTICS. XIX. DIHYDROSTREPTOSONIC ACID LACTONE AND CONFIGURATION OF STREPTOSE AND STREPTOBIOSAMINE

Sir:

2-Methyl pentaacetyldihydrostreptobiosaminide[1] was allowed to react stepwise with ethyl mercaptan–hydrogen chloride, acetic anhydride, and mercuric chloride for the preparation of amorphous pentaacetyldihydrostreptobiosamine.[2] Acetylation of this compound gave hexaacetyldihydrostreptobiosamine.[2] Oxidation by bromine and hydrolysis by hydrochloric acid of pentaacetyldihydrostreptobiosamine gave the known N-methyl-L-glucosamine and the new dihydrostreptosonic acid lactone, m. p. 143–144°, $[\alpha]_D$ $-32°$ (c, 0.40 in water). Reaction of the lactone with hydrazine gave dihydrostreptosonic acid hydrazide, m. p. 137–139°, $[\alpha]_D$ $+23°$ (c, 0.9 in water).

Application of Hudson's rules of rotation to streptosonic acid diamide[3] and dihydrostreptosonic acid hydrazide shows that the hydroxyl group at C_2 of streptose lies on the right. Since it has already been shown[4] that the hydroxyl groups at C_2 and C_3 of streptose are *cis*, and that the configuration about C_4 is *levo*,[5] the configuration of L-streptose is represented by structure I. On the basis of these data, and the calculations of the glycosidic linkage between streptose and N-methyl-L-glucosamine to be α-L,[6] the configuration of streptobiosamine is represented by structure II. The levorotations of streptosonic acid lactone[3] and dihydrostreptosonic acid lactone support the applicability of Hudson's rules to these streptose derivatives, since it is established conclusively that the configuration about C_4 of these lactones is L. That the lactone of dihydrostreptosonic acid lactone involves the secondary hydroxyl group at C_4 is shown by the liberation of formaldehyde when the lactone reacts with two equivalents of periodic acid.



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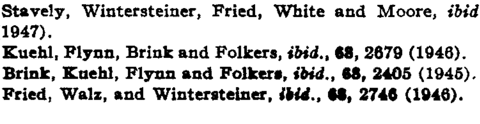

II

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[1] Brink, Kuehl, Flynn and Folkers, THIS JOURNAL, **68**, 2557 (1946).

[2] Stavely, Wintersteiner, Fried, White and Moore, *ibid.*, **69**, 2742 (1947).

[3] Kuehl, Flynn, Brink and Folkers, *ibid.*, **68**, 2679 (1946).

[4] Brink, Kuehl, Flynn and Folkers, *ibid.*, **68**, 2405 (1945).

[5] Fried, Walz, and Wintersteiner, *ibid.*, **68**, 2746 (1946).

[6] Lemieux, DeWalt and Wolfrom, *ibid.*, **69**, 1838 (1947).

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CHARACTERISTICS OF THE DROPPING MERCU ELECTRODE IN FUSED SALTS

Sir:

In a preliminary investigation of the applicability of polarographic techniques to fused salt media we have obtained typical polarographic reduction waves for the cations of a number of salts dissolved in a fused salt solvent. The results indicate that the Ilkovic equation[1,2] is applicable to the melt employed, a ternary eutectic consisting of 66.65 mole % ammonium nitrate, 25.76% lithium nitrate, and 7.59% ammonium chloride (m. p. 86.2°).[3]

Mercury was used for the dropping electrode and the stationary unpolarized anode pool in a cell maintained at 125 ± 0.5° in an oil-bath. Drops were collected in a Pyrex spoon, washed, dried, and weighed for tests of the Ilkovic equation.

Characteristic reduction waves were obtained with nickel(II), copper(II), and bismuth(III), the latter two exhibiting maxima. A trace of potassium iodide eliminated the maximum in the case of copper. Varying degrees of success have been had with other solute salts, prime difficulties being limited solubility in or reaction with the solvent electrolyte.

TABLE I

TEST OF THE ILKOVIC EQUATION

No.	C, mmol./l.	i_d, μ amp.	m mg./sec.	$t_{max.}$, sec.	$\frac{i_d}{Cm^{2/3}t^{1/6}_{max}}$
1	1.95	3.74	1.41	4.0	1.21
2	4.98	10.0	1.45	4.5	1.22
3	6.77	12.8	1.37	3.9	1.22
4	9.97	17.2	1.45	3.4	1.10
5	12.8	21.6	1.40	3.5	1.09
6	12.8	16.6	0.658	7.6	1.22

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[1] D. Ilkovic, *Coll. Czechoslov. Chem. Commun.*, **6**, 498 (1934).

[2] I. M. Kolthoff and J. J. Lingane, "Polarography," Interscience Publishers, Inc., New York, N. Y., 1941, p. 38.

[3] E. P. Perman and R. H. Wilson, *J. Chem. Soc.*, **125**, 1709 (1924).