

175–187°, n_D^{25} 1.4905. (Found: C 56.6; H 6.7; N 4.9; COCH₃ 42.7. Calc. for C₈H₁₀O₃N (COCH₃)₂ (297.3): C 56.6; H 6.4; N 4.7; COCH₃ 43.4.) Crystallization from ether gave white crystals, m. p. 89–92°; previously found 95–96°¹.

The transformation of IX into pyridoxine hydrochloride in a 76 % yield has been described previously¹.

2-(α -Aminoethyl) - 3,4-bis(hydroxymethyl)-furan (XI). IX (5.95 g, 0.020 mole) and sodium hydroxide (3 N, 87 ml, 0.20 mole) were mixed and heated under reflux (24 h). After cooling the light brown mixture was continuously extracted with ether (3 days). The ethereal extract was distilled from an oil bath. Hereby 3.02 g (88 %) of XI was obtained as a pale yellow oil; b. p. n_D^{25} 165–171°, n_D^{25} 1.5304. (Found: C 56.3; H 7.9; N 8.5. Calc. for C₆H₁₀O₃N (171.2): C 56.1; H 7.7; N 8.2.)

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Two Fractions of Melanocyte Stimulating Hormone in Urine

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One of the hormones secreted from the pituitary is the Melanocyte Stimulating Hormone (MSH). Two different melanocyte stimulating substances have been isolated from porcine pituitary (Lerner and Lee¹; Lee and Lerner²), one is alpha-MSH which has an isoelectric point at pH 10.5–11.0, the other is beta-MSH which has an isoelectric point at pH 5.5.

Other investigators found similar substances with isoelectric points around pH

5 but could not find any activity at pH 11. (Porath *et al.*³; Benfey and Purvis⁴; Geschwind and Li⁵).

MSH is excreted in the urine of normal men and women (Shizume and Lerner⁶; Dahlberg⁷), as well as during pregnancy (Shizume and Lerner⁶; Dahlberg⁸).

Owing to the inadequate methods for extraction of MSH from urine it has previously been difficult to estimate the excretion in the urine of normal subjects.

As MSH is a pituitary hormone a method for determination of the excretion in urine was thought to give information on certain pituitary functions. A biological assay has therefore been elaborated.

For the determination of the hormone hypophysectomized frogs, *Rana Esculenta*, were used. In the method of extraction used an active melanocyte stimulating substance was found at pH 4.0. In recovery experiments 45.4 % \pm 6.4 of a known amount of added MSH could be retrieved.

As the degree of accuracy thus seemed rather low it was thought that part of the hormone might remain in solution. In order to investigate this problem extractions were carried out at both pH 4.0 and pH 11.5 on the urine of normal women. The usual activity was found at pH 4.0, but in the fraction at pH 11.5 activity was also found. There are thus two fractions of melanocyte stimulating hormone in the urine of homo.

Recovery experiments with a known amount of added MSH yielded the following results:

At pH 4.0 = 40–45 %
at pH 11.5 = 55–60 %

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