A STUDY OF THE STRUCTURE

OF THE LACTOSOMATOTROPIC HORMONE

II. AMINO-ACID SEQUENCE OF THE INDIVIDUAL PEPTIDES

OF A TRYPTIC HYDROLYZATE OF THE FRAGMENT B-LSTH

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The cyanogen bromide fragment B of lactosomatotropic hormone (LSTH) and CB-H₁ of ovine lactogenic hormone (O-LTH) have similar amino-acid compositions and terminal amino acids [1, 2]. For a more detailed comparison, the fragment B-LSTH (95 amino acids) containing five lysine residues and four arginine residues, was hydrolyzed with trypsin. The peptides of the tryptic hydrolyzate were separated by gel chromatography on Sephadex G-25 and by partition chromatography in a column of cellulose. The homogeneity of the peptides isolated was established by chromatoelectrophoresis in a thin layer of cellulose. The amino-acid compositions of all the peptides isolated were determined, and the N-terminal amino acids were found by the reaction with dansyl chloride (DNS-Cl) [3, 4].

A comparison of the results obtained with the structure of O-LTH enabled us to find peptides differing in amino-acid composition from the corresponding peptides of O-LTH. The amino-acid sequences of these peptides were studied by a combination of stepwise Edman degradation and dansylation [5]. To determine the sequence of amino acids at the C-terminal section of peptide BT-5, it was incubated with carboxypeptidase A for 20 h.

Below we give a comparison of the structures of the peptides BT-3a, BT-3b, and BT-5 of LSTH with sections of the cyanogen bromide fragment $CB-H_1$ of the O-LTH molecule

Thus, the characterization of the peptides from the tryptic hydrolysis of the fragment B-LSTH, and the study of the amino-acid sequences of individual representatives of them has shown differences in the primary structures of LSTH and O-LTH.

LITERATURE CITED

- 1. N. D. Gafurova, L. V. Nagornaya, and F. Yu. Ryshka, Khim. Prirodn. Soedin., 284 (1975).
- 2. C. H. Li, J. S. Dixon, T.-B. Lo, K. D. Schmidt, and Y. A. Pankov, Arch. Biochem. Biophys., 141, 705 (1970).
- 3. W. R. Gray, Methods Enzymol., 11, 139 (1967).
- 4. K. R. Woods and K. T. Wang, Biochim. Biophys. Acta, 133, 369 (1967).
- 5. P. Edman, Acta Chem. Scand., 4, 283 (1950).

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