Table 1

Treatment	Weight increase (%)	Saturation water content (%)	Saturation formic acid content (%)
Unmodified	—	34·2	180
Mercuric acetate	8	30·5	> 200
Benzoquinone	9	30·8	137
Aqueous formaldehyde	2·0	34·0	144
Gaseous formaldehyde	1·8	28·2	145

less and the water content reached 38 per cent at saturation. The formic acid content at saturation following peptide hydrolysis rose to 215 per cent, but in the presence of combined formaldehyde only reached 155 per cent.

This result shows that the hydrolysed structure is able to swell further because of the cleavage of peptide bonds, but the presence of combined formaldehyde imposes swelling restraints when the level of swelling goes beyond the normal degree of swelling of keratin in water. This suggests that the formaldehyde is present as cross-links in equilibrium with the unmodified water-swollen keratin.

Comparison of the water-vapour isotherms of gaseous formaldehyde treated and unmodified wools enables the effect of additional cross-linking on water absorption to be determined with only negligible effect due to the reagent itself. This showed that reductions of the water content only became evident above 80 per cent relative pressure, that is, in the solution region of the isotherm. No change of the water content was observed at low and intermediate relative pressures even though considerable swelling occurs in keratin in the region up to 80 per cent relative pressure. Thus additional cross-links impose restraints on the swelling of keratin if formed in the keratin at a lower level of swelling, but the effect is restricted to swelling in the solution region of the isotherm.

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BIOCHEMISTRY

Lipotropin, a New Active Peptide from Pituitary Glands

A biologically active peptide which is chemically and physiologically distinct from known pituitary hormones has recently been isolated and characterized[1]. Its purity has been established by various criteria such as column chromatography and gel filtration, zone electrophoresis and disk electrophoresis, countercurrent distribution and sedimentation. This peptide, which was obtained in the course of the isolation of adrenocorticotropin (ACTH) by a revised method[2], is more acidic than the latter hormone, and consists of 59 amino-acids. Its molecular weight was determined by sedimentation equilibrium investigations and found to be 6,900. It is structurally different from ACTH, having lysine rather than phenylalanine at the COOH-terminus, and glutamic acid rather than the serine at the NH_2-terminus; furthermore, it has a different amino-acid composition. It has a very low adrenocorticotropic activity, and resembles ACTH in melanocyte-stimulating activity; however, it is not potentiated by treatment with boiling NaOH, as is ACTH. Although the lipolytic potencies in the rabbit as determined *in vitro* were comparable for both peptides, they differed markedly in the rat.

Since this molecule is entirely different from ACTH and the other known peptide hormones in the pituitary, we felt that a term should be established for it at this time. We would like to propose that the new biologically active peptide be designated lipotropic hormone (lipotropin, LPH). As used in the terminology of the other anterior pituitary hormones, the suffix *tropin*[3] has the meaning "to turn or cause to change, as in response to a stimulus". So far as we can determine, the major function of the lipotropin molecule concerns fat metabolism; it effects the mobilization of fat *in vivo* and the liberation of free non-esterified fatty acids from fat pads *in vitro*. With most of the pituitary tropic hormones, a target organ for the hormonal action is known and recognized. However, with this peptide, similar to the case of somatotropin (growth hormone), we do not know the mechanism of its biological action. In this instance, the hormonal action might involve activation of the enzyme lipase, but at present we can only speculate. There is a term that has been used at times to refer to this type of activity, *adipokinin*, but since it involves only the connotation of movement, which is just one aspect of the hormonal effects, it would appear to be too limited. To name the molecule in accordance with the terminology established for the pituitary hormones[3,4] would not only have the merit of consistency, but would also allow for future disclosures about the mechanism of the hormone in metabolic processes.

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Detection of Triosephosphate Isomerase after Electrophoresis

By coupling enzymes to the reduction of a tetrazolium salt, dehydrogenases can be located on electrophoresis strips, and several have been shown to consist of more than one protein component[1,2]. It is possible to detect other enzymes if their action leads to the formation of a compound which can be oxidized by a suitable enzyme in the incubation mixture. In this way triosephosphate isomerase (TPI) has been located by coupling it with phosphoglyceraldehyde dehydrogenase.

Starch-gel electrophoresis of the water soluble proteins from pre-rigor pig muscle was carried out using an ice-cooled vertical apparatus, and the buffer system reported elsewhere[3]. After staining one slice with nigrosine, the complementary slice was incubated with a mixture to locate TPI. This consisted of the following: nitro blue tetrazolium, 3 mg; nicotine adenine dinucleotide, 10 mg; phenazonium methosulphate, 200 μg; *P*-glyceraldehyde dehydrogenase, 1 mg; sodium arsenate, 25 mg; dissolved in 10 ml. of dihydroxyacetonephosphate solution. The latter was prepared as follows: 1 ml. of M sodium α-glycerophosphate, 1 ml. of M sodium pyruvate, 5 mg NAD, 20 μg α-glycerophosphate dehydrogenase and 20 μg lactate dehydrogenase were added to 10 ml. of 20 mM *tris* buffer *p*H 8·0, and the mixture incubated at 37° for 2 h. It was then adjusted to *p*H 2·0 with hydrochloric acid to inactivate the enzymes, and brought back to *p*H 8·0 with M *tris*. This mixture contains as much lactate as di-