

L') rises rapidly from the beginning. This curve represents the component of tonus which, in the absence of contractile effort, is mediated through the somatic nerves.

The results of these experiments corroborate the results of the tonus measurements on the quadriceps femoris muscles, reported in the previous communication.¹ Furthermore, they demonstrate the existence of tonus in a skeletal muscle in the absence of functional somatic nerves. Doubtless this component of tonus is plastic in quality. Therefore, additional evidence, both quantitative and positive in character, is afforded in support of the theory that plastic tonus in skeletal muscles is mediated through the sympathetic nervous system.

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Conditions affecting the formation of glycuronic acid in rabbits.

T. E. FRIEDEMANN and I. KOECHIG. (Introduced by P. A. Shaffer).

[From the Department of Biological Chemistry, Washington University School of Medicine, St. Louis, Mo.]

This experiment represents preliminary data of a study, the object of which is to determine the factors which affect the formation of glycuronic acid in the body.

A solution of menthol was made by dissolving 44 grams in enough warm olive oil to make a total volume of 66 cc. Six cc. portions were administered to rabbits through a stomach tube by means of a graduate syringe. Only healthy young animals were used.

Date	No. of animals group	Av. wgt. in kilos	Treatment	Gm. menthol per rabbit	Excretion of crude ammonium menthol glycuronate per rabbit
7/ 8/25	6	2.04	Normal: food + glucose	4.0	4.0
7/11/25	5	2.00	Insulin: food + glucose	4.0	2.6
7/14/25	4	—	Normal: food	4.0	3.7
7/16/25	4	1.95	Phlorhizin: starving	4.0	2.2

The results indicate clearly that the glycuronic acid output may be decreased either by insulin or by phlorhizin. The normal output per rabbit after the above dose of menthol was about 4 grams of the crude ammonium menthol glycuronate. Under the same conditions, but with insulin and glucose, the output was only about 2.6 grams per rabbit. When starved and phlorhizinized, similar results were obtained, as in the case of insulin. This appears to indicate a relation between the amount of carbohydrate in the tissue and the extent of synthesis of glycuronate.

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Ketolytic action of various sugars *in vitro*.

T. E. FRIEDEMANN. (Introduced by P. A. Shaffer).

[From the Department of Biological Chemistry, Washington University School of Medicine, St. Louis, Mo.]

The results here summarized represent a continuation of the study of the *in vitro* reactions between sugars and acetoacetic acid discovered in 1921 by Shaffer¹ and are believed to afford an explanation of antiketogenesis.²

The reactions of aldehydes and sugars were studied under two conditions: (1) "non-oxidative" and (2) "oxidative".

"NON-OXIDATIVE REACTION."

Simple aldehydes such as formaldehyde,³ acetaldehyde, glyoxylic acid, glyoxal,⁴ and glyoxal carbonic acid reacted readily with potassium acetoacetate at pH 8.0 (in the absence of any oxidizing agent). *Under the same conditions only simple aldoses reacted.* Thus glycol aldehyde and glyceric aldehyde reacted with acetoacetate. *Dihydroxy acetone* did not react and in this respect it acted like other ketones such as pyruvic acid and acetone. How-

¹ Shaffer, P. A., *J. Biol. Chem.*, 1921, xlvii, 433.

² Shaffer, P. A., *J. Biol. Chem.*, 1921, xlvii, 449.

³ Shaffer, P. A., "Antiketogenesis: Its Mechanism and Significance." *Harvey Society Lectures*, 1923-1924. Lippincott Company, Philadelphia.

⁴ Shaffer, P. A., and Friedemann, T. E., *J. Biol. Chem.*, 1924, lxi, 585.