1. Hawkins, R. D. and Gunter, J. M. *Biochem. J. London* **40** (1946) 192.
2. Whittaker, V. P. *Physiol. Rev.* **31** (1951) 312.
3. Mendel, B., Mundell, D. B. and Rudney, H. *Biochem. J. London* **37** (1943) 473.
4. Koelle, G. B. *Biochem. J. London* **53** (1953) 217.
5. Augustinsson, K. B. *Acta Physiol. Scand.* **15** *Suppl.* **52** (1948).
6. Blaschko, H., Chou, T. C. and Wajda, I. *Brit. J. Pharmacol.* **2** (1947) 108, 116.

On the Question of a Cysteinyl-glycinase Activity of RNA

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Binkley [1] reported that cysteinyl-glycinase should be a protein-free RNA and put forward the hypothesis that RNA should interfere in protein synthesis through this activity.

Because of the remarkable implications of these statements (among others, that an enzyme should be non-protein in nature), an attempt was made at purifying further the cysteinyl-glycinase (through chromatography on calcium phosphate, Dowex 2 and DEAE cellulose) and at studying some of its chemical properties.

A separation of cysteinyl-glycinase activity from RNA was achieved, and Folin-positive, orcinol-negative, P-negative, chloroform-sensitive preparations of enzyme were obtained, showing a maximum in UV absorption spectrum at about 280 mμ.

1. Binkley, F. *Nature* **167** (1951) 888; *Exptl. Cell Research Suppl.* **2** (1952) 145.

A Method for the Isolation of 2-Deoxy-D-ribose from Thymidine

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It has always been assumed that the sugar component of thymidine is in analogy with the purine nucleosides 2-deoxy-D-ribose. Good evidence in support of this assumption has recently been provided [1-3], although the conclusive chemical proof was lacking. The present work describes the isolation of crystalline 2-deoxy-D-ribose from thymidine, and also provides a very convenient micro-method for the isolation of this sugar for tracer studies, which was the main purpose of this work. Thymidine is reduced by 3 % NaHg in aqueous solution at room temperature. The reduction mixture was shown by paper electrophoresis to contain two acidic 2-deoxy-D-ribosyl components formed by breakage of the reduced pyrimidine ring under the prevailing alkaline conditions. Removal of alkali in the reduction mixture with Amberlite IR 120(H) followed by gentle acid hydrolysis with dilute sulphuric acid and passage through a column of weakly basic resin such as Amberlite IR 4B(OH) afforded crystalline 2-deoxy-D-ribose. The yield was almost 100 %. For tracer work it is advisable to purify it by recrystallization or paper chromatography.

1. Macnutt, W. S. *Biochem. J. London* **50** (1952) 384.
2. Burke, D. C. *Chemistry and Industry* **1954** 1393.
3. Michelson, A. M. and Todd, A. R. *J. Chem. Soc.* **1955** 816.

Glucose Inhibition of Respiration in Ascites Tumor Cells

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Glucose exerts a pronounced inhibitory effect upon the respiration of ascites tumor cells, a phenomenon also called the Crabtree effect. In an attempt to approach this problem the glycolysis and the tricarboxylic acid cycle of the ascites tumor cells were studied under various conditions.

Ascites cells (30—40 mg protein) incubated in phosphate buffer for 1 h at 37° with excess glucose as substrate were found to accumulate 1—2 μM of a barium insoluble fructose ester, assumed to be fructose-diphosphate.

In the presence of glucose (10 μM/ml), the removal of inorganic phosphate (20 μM/ml) from the medium increased the oxygen uptake by 25—50 % and decreased the glucose uptake