ted compounds, that can be differentiated from cholic acid by partition chromatography^{2,3}. The amount of cholic acid in the hydrolysed bile was then calculated from the titration values of the cholic acid band.

It was found, that the injection of 2.5 mg of sodium-taurochenodesoxycholate per hour scarcely influenced the cholic acid production, 5 mg per hour reduced the daily production to about 4 mg, whereas 10 mg per hour caused a reduction down to the normal daily synthesis of 1–2 mg.

If the amount of bile salts in a 200 g rat is about 15 mg the bile acids have to circulate 15–20 times per day in the enterohepatic circulation to maintain a concentration in the portal blood similar to that in the last mentioned experiment.

The daily formation of 40–60 mg of bile acids corresponds to about three times the amount cholesterol present in the liver. We have therefore injected ¹⁴C-acetate intraperitoneally and followed the appearance of ¹⁴C in the secreted bile.

In a typical experiment about 1 mg of sodium acetate (1.9×10^6 c.p.m.) in 1.5 ml of saline was injected intraperitoneally into fistula rats at the time indicated after the operation. The percentage of the administered isotope that was recovered in the bile during the following 6 hours is shown in the second column below.

Hours after operation	% injected isotope recovered in bile
16	0.13
64	0.61
112	1.41

According to paper chromatography about 80 % of the isotope was contained in the bile salts.

The correlation of data of this type with the bile acid formation will be exemplified and discussed. The method has been found useful for studying the regulation of the synthesis of bile acids under different experimental conditions.

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Increase of Cholinesterase Content in Mouse Liver Homogenates after Incubation

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The rate of hydrolysis of acetylcholine by mouse liver homogenates increases by about 100 % when the homogenates are left either overnight at room temperature (20° C) or two to three hours at 37° C.

Of the organs investigated (brain, kidney, plasma, erythrocytes and liver) only the liver presented a real "autoactivation". This increase in activity takes place in liver homogenates from mice of different ages and both sexes, but seems to be more progressive in the female. There seems to be a greater "activation" in liver homogenates from infantile mice than mature ones, although there are large fluctuations.

The "activation" does not disappear with dialysis and seems to be localized to the particles of the liver cell upon "high speed" centrifuging. Calcium ions have no influence, neither is the increase in activity dependent on the isotonicity of the medium.

Kinetic experiments with a selective inhibitor of "pseudo"-cholinesterase¹, Nu 683, suggest that one and the same enzyme, viz. a "pseudo"-cholinesterase, is responsible for the major part of the activity with acetylcholine as substrate, both prior to and after the "activation".

The increase of hydrolysis takes place with acetylcholine and butyrylcholine as substrates, while deactivation results when tributyrin and benzoylcholine are employed. With acetyl-β-methyl-choline the rate of hydrolysis is quite slow, but has a slight tendency to increase with time; too small, however, to be of any experimental significance. These experiments indicate that we are dealing with a butyrylcholinesterase².

Benzoylcholine, often used as a specific substrate for "pseudo"-cholinesterase³, is not hydrolysed at an increased rate after incubation. On the contrary, the hydrolysis decreases with time. Thus there might perhaps be two "pseudo"-cholinesterases in the mouse liver; one butyrylcholinesterase and one "benzoylcholinesterase". As known, "benzoylcholinesterases" are occasionally found in the plasma of rabbits⁴ and in the liver of guinea pigs^{5,6}.

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On the Question of a Cysteinyl-glycinase Activity of RNA

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Binkley¹ 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 m μ .

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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 provided¹⁻³, 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.

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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 μ M of a barium insoluble fructose ester, assumed to be fructose-diphosphate.

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