

is distinct from the normal physiological lipemia induced by carbohydrate feeding in which overproduction is reported to be the initiating event.

EFFECT OF DIETARY TOMATINE ON CHOLESTEROL METABOLISM IN THE RAT. M.N. Cayen (Dept. of Biochem., Ayerst Res. Lab., Montreal, Quebec, Canada). *J. Lipid Res.* 12, 482-90 (1971). Tomatine is a virtually nonabsorbable saponin which has been used as an antifungal agent and analytically as a cholesterol precipitant. It was used in this study to determine whether or not it can form a complex with cholesterol *in vivo* in the rat intestine and what effects such complex formation would have on cholesterol metabolism. Rats that were fed tomatine as 1% of the diet had a decreased uptake of dietary cholesterol by the liver, an increased rate of hepatic and intestinal cholesterol synthesis as well as a partial offsetting of the dietary cholesterol-induced decrease in hepatic cholesterologenesis and an apparent increase in sterol excretion without an effect on bile acid excretion. *In vitro*, tomatine did not sequester cholic acid as did cholestyramine. The results show that tomatine has an effect on cholesterol absorption and on other aspects of lipid metabolism in the rat similar to that of cholestyramine, with the notable exception that tomatine increased sterol excretion while cholestyramine increased bile acid excretion. It was suggested that tomatine forms a nonabsorbable complex with cholesterol in the rat intestine.

STUDIES OF BRAIN MYELIN IN THE "QUAKING MOUSE." H. Singh, N. Spritz and B. Geyer (Dept. of Med., New York Univ. School of Med., and Lipid Met. Lab., Veterans Admin. Hosp., N.Y. 10010). *J. Lipid Res.* 12, 473-81 (1971). Myelin was isolated from the brains of "quaking" and littermate control animals and its composition was determined. The brains of quaking animals contained approximately one-fourth as much myelin as the control animals. There were qualitative as well as quantitative differences between the myelin from the two groups. By continuous cesium chloride gradient flotation it was shown that the myelin from the quaking animals consisted solely of a band corresponding to the heavier and smaller of the two bands found in normal controls. Cholesterol and glycolipids were lower and phospholipids (mainly phosphatidylethanolamine) and protein were higher in quaking animals than in controls. Also, phosphatidylethanolamine was decreased, and several consistent differences in the fatty acids (both unsubstituted and hydroxy) and aldehydes of the component lipids were found. In general there were smaller amounts of monounsaturated fatty acids in quaking animals. Myelin in the quaking mouse has certain compositional similarities with juvenile myelin.

ISOLATION AND CHARACTERIZATION OF A PHOSPHATIDYLETHANOLAMINE-DEFICIENT MUTANT OF BACILLUS SUBTILIS. J.L. Beebe (Dept. Microbiol., Cornell Univ. Med. College, New York, N.Y. 10021). *J. Bacteriol.* 107, 704-11 (1971). A mutant of *Bacillus subtilis* ATCC6051 deficient in phosphatidylethanolamine was isolated by nitrosoguanidine mutagenesis and penicillin concentration of auxotrophs employing phosphatidylethanolamine as supplement. The mutant was compared to the parent strain with regard to lipid composition, growth, osmotic fragility and staining character and differed substantially in each category. In addition to scant amounts of phosphatidylethanolamine, the mutant contained phosphatidylglycerol, cardiolipin, lysyl phosphatidylglycerol and diglucoacyldiglyceride though in amounts differing from those found in the parent strain.

PHOSPHOLIPID METABOLISM IN THE ABSENCE OF NET PHOSPHOLIPID SYNTHESIS IN A GLYCEROL-REQUIRING MUTANT OF BACILLUS SUBTILIS. T.L. Lillich and D.C. White (Biochem. Dept., Univ. Kentucky Med. Center, Lexington, Ky. 40506). *J. Bacteriol.* 107, 790-97 (1971). A glycerol-requiring auxotroph of *Bacillus subtilis* showed no net synthesis of phospholipid when deprived of glycerol. Although there was no net synthesis of phospholipid, it was found that (i) fatty acids and ³²P were slowly incorporated into phospholipid, (ii) in pulse-chase experiments, both ³²P and ¹⁴C in the glycerol portion of the phospholipids were lost from phosphatidylglycerol and lysyl phosphatidylglycerol and accumulated in cardiolipin and (iii) the proportions of the phospholipids in the membrane changed with a loss of PG and an accumulation of cardiolipin. The addition of glycerol to the glycerol-deprived cells resulted in a rapid incorporation of glycerol and restoration to predeprived levels of the cardiolipin and PG.

AN ENZYMATIC PROCESS FOR A PROTEIN-CONTAINING BEVERAGE BASED ON SOYBEAN PROTEIN AND LEMON JUICE. H. Sugimoto, J.P. Van Buren and W.B. Robinson (N.Y. State Agr. Exp.

Sta., Cornell Univ., Geneva, N.Y. 14456). *J. Food Sci.* 36, 729-31 (1971). An acidic enzymatic process for preparation of a bland soybean protein hydrolysate is described. Cooked suspension (5.0%) of isolated soybean protein is mixed with small amounts of an acid-protease preparation from *Trametes sanguinea*, adjusted to pH 3.3-3.5 with concentrated lemon juice and incubated at 50C for 8-10 hours. After stopping the proteolysis by heat treatment, the clear supernatant is separated from any insoluble residue by centrifugation. A solubilized nitrogen recovery of 88-90% is obtained. After being diluted about twice and sweetened with sugar, the hydrolysate constitutes a completely clear, slightly yellowish lemonade-like flavored beverage. The data on chemical analysis, gel-filtration and rheological behavior of the hydrolysate are described and discussed.

INFLUENCE OF SEX AND POSTMORTEN AGING ON INTRAMUSCULAR AND SUBCUTANEOUS BOVINE LIPIDS. R.L. Hood and E. Allen (Dept. of Animal Sci., Univ. of Minnesota, St. Paul, Minn. 55101). *J. Food Sci.* 36, 786-790 (1971). Wholesale beef ribs from bulls, steers and heifers were used to study the changes in subcutaneous (SQ) and longissimus dorsi intramuscular (IM) lipids at 2, 7, 14 and 21 days postmortem (PM). Cholesterol levels, phospholipid levels and IM phospholipid fatty acid composition did not change with PM aging. The progressively increasing free fatty acid (FFA) levels observed with time PM were paralleled by fatty acid composition changes. Differences were observed in the quantity and composition of the fatty acids from the lipid classes for the three sex groups. Rib steaks from heifers had significantly higher sensory panel scores for aroma and lower IM and SQ levels of FFA when compared to bulls. A significant correlation of -0.49 was obtained between aroma score and IM levels of FFA.

PHOSPHOLIPID CONCENTRATION ESTIMATED FROM TOTAL MUSCLE LIPID. A.M. Campbell and L.T. Harrill (Agr. Exp. Sta. and College of Home Ec., Univ. of Tenn., Knoxville, Tenn. 37916). *J. Food Sci.* 36, 837 (1971). The inverse relationship between total muscle lipid concentration and phospholipid concentration of the total lipid was linear when a log-log plot was made of the data from 67 diverse samples. The regression equation presented should have some predictive value.

DENATURATION OF SOYBEAN PROTEINS BY ISOELECTRIC PRECIPITATION. A.M. Nash, W.F. Kwolek and W.J. Wolf (N. Reg. Res. Lab., Peoria, Ill. 61604). *Cereal Chem.* 48, 360-8 (1971). Water extracts of soybean meal were acidified with HCl; neutralized; equilibrated with a buffer of pH 7.6 and analyzed in an ultracentrifuge. Loss of solubility in the buffer, as compared to a nonacidified control, served as a criterion of denaturation. Factors causing denaturation were time of acid treatment and extremes of acidity. Two-hour acidification of water extracts to pH 4.5 decreased solubility and total ultracentrifuge area of the globulin fraction about 12%. Alkylation of sulfhydryl groups did not prevent these losses. When they were removed before neutralizing, protein solubility was reduced and all ultracentrifugal fractions decreased in area. Even though no loss of protein solubility occurred on pH 4.5 treatment of water extracts that were dialyzed to remove phytates, total ultracentrifuge areas decreased.

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• *Obituaries*

Word has been received of the deaths of the following AOCS members: Roy R. Baker, Jr., ('50) Research Chemist at Swift and Co., Oak Brook, Ill.; A.E. Rheineck, Professor, Polymers and Coatings Department, College of Chemistry and Physics, North Dakota State University, Fargo, N. Dak.; and Wilfred D. Simpson, ('58) Manager at Woodson-Tenent Labs, Wilson, Ark.

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