Serum from rats immune to the Flexner-Jobling carcinoma was extracted with chloroform in order to remove the lipoids which, as has been demonstrated by Jobling and his co-workers, inhibit the proteolytic ferments present in that fluid. The lipoid-free serum was injected subcutaneously into a group of 17 rats in doses of 1 c.c. for seven successive days. Three days after the last injection, these animals and a group of seven controls were inoculated with 0.003 gm. of the Flexner-Jobling rat carcinoma.

Three weeks after inoculation, the animals injected with lipoid-free serum showed 100 per cent. takes as compared with 85 per cent. in the controls. It may be concluded, therefore, that lipoid-free serum, like non-lipoid-free serum, when obtained from immune animals, does not cause passive immunity.

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Relative utilization of free palmitic acid, glyceryl palmitate and ethyl palmitate by dogs.

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Digestibility of fats depends on several factors which may be grouped as: (1) mechanical, *e. g.*, melting point which determines the rate of gastric discharge[1] and, to a considerable extent, the degree of emulsification; and (2) chemical which determines the character of the products of digestion and the rate of hydrolysis, certain esters of fatty acids, *e. g.*, cetyl palmitate,[2] being attacked very slowly by pancreatic lipase. There is strong evidence for the belief that unchanged esters in a finely emulsified form can not be absorbed by the intestinal mucosa.[3] The facts presented here support this view and agree with the thesis of Terroine[4] that absorption of fats is limited by the rapidity of hydrolysis.

[1] Tangl, F. and Erdelyi, A., *Biochem. Zeitschr.*, 34, 94.
[2] Munk, I., *Archiv. f. (Anat. u.) Physiol.*, 1890, 581.
[3] Bloor, W. R., *J. Biol. Chem.*, 15, 105, 1913.
[4] Terroine, E. F., *J. de physiol.*, 1911, 695.

Two dogs were used for each experiment. The fats employed were added to a basal ration of lean beef, cracker crumbs, and agar. The ethyl palmitate used was neutral; melting point 24°; saponification number 198 (theoretical 197.6). Glycerol palmitate was prepared by heating glycerol and palmitic acid together according to the method of Ellis and Rabinovitz.[1] It was a hard solid with a melting point of about 60°. Feces fatty acids were determined by the method of Gephart and Csonka.[2] Utilization was as follows:

	Dog 1, Per Cent.	Dog 2, Per Cent.	Amount Fed per Day, Grams.
Lard	95.8	95.3	40
Ethyl palmitate	56.8	48.2	40
Glyceryl palmitate	91.7	93.1	40
Palmitic acid	81.2	79.1	40

The ether extract of the feces resulting from feeding ethyl palmitate contained 79.4 per cent. unchanged ester, identified by its melting point, and 20.6 per cent. free palmitic acid. 0.9 per cent. palmitic acid combined as soaps was found.

The poor absorption of ethyl palmitate we think due to a slow hydrolysis as indicated by the large amount of unsplit ester recovered in the feces. Frank[3] has reported a utilization of 75 per cent. for ethyl palmitate; however, the dogs used in his experiments were purged by the large amounts fed and a loss of feces might have resulted in spite of care in collection. The good utilization of glyceryl palmitate is in marked contrast to the poor digestibility of tristearin (9 to 14 per cent.) reported by Arnschinck.[3] It may be worthy of note in this connection that Frank[4] found ethyl stearate utilized to a much less extent than ethyl palmitate, 12 and 75 per cent. respectively. The utilization of glyceryl palmitate is perhaps better than would be expected for such a high melting fat. Mutton tallow, however, having a melting point of 49° is well utilized by dogs (93 per cent.) as found by Arnschink and others.

[1] Ellis and Rabinovitz, *J. Ind. and Eng. Chem.*, 8, 1105, 1916.

[2] Gephart, F. C. and Csonka, F. A., *J. Biol. Chem.*, 19, 521, 1914.

[3] Arnschink, L., *Zeitschr. f. Biol.*, 26, 434, 1890.

[4] Frank, O., *Zeitschr. f. Biol.*, 36, 568, 1898.