

The influence of diet on liver phosphorylase. III. Role of inactivation on the decrease of phosphorylase under certain dietary conditions

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The addition of epinephrine to the incubation medium did not modify significantly and regularly the phosphorylase activity of liver slices prepared from well-fed or fasted rats. Liver phosphorylase was rapidly inactivated in homogenates prepared in KCl. The rate of inactivation was lower in fasted animals or in those fed a high-fat, carbohydrate-free diet than in rats fed equilibrated or carbohydrate diets. The addition of an activating mixture composed of ATP, magnesium, fluoride, and caffeine promoted the reactivation of the enzyme. Phosphorylase activity was well maintained in homogenates prepared in KF and did not change in the presence of the activating mixture.

Homogenates obtained from fasted rats or from animals fed equilibrated or high-fat, carbohydrate-free diets behaved similarly. These results are interpreted as an indication that the low phosphorylase activity observed during fasting or when animals are fed a high-fat, carbohydrate-free diet is not the consequence of a hig