ON THE FUNCTION OF THE EXOCRINE PANCREAS STUDIED WITH THE ISOLATED AND PERFUSED SABBIT PANCREAS

Toshiyuki SAITO
Department of Veterinary Physiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo, Japan

1) A method has been developed for perfusing the isolated rabbit pancreas. By using this method, the effect of acetylcholine on the amylase content and the flow of pancreatic juice were studied.

2) The advantages of the present method are: a) isolation of the pancreas can be carried out easily, b) direct effects of the secretagogues can be examined by injecting them into the perfusing tube, c) the control perfusing solution can easily be replaced with other solutions of different composition, d) the pancreatic juice can separately be collected from the pancreatic duct.

3) The juice secretion in the "resting" state increased during the first two hours and remained relatively constant for the following five hours. Amylase secretion, on the other hand, was high during the first two hours, but then decreased and remained relatively constant during the following five hours.

The volume and the amylase content of the pancreatic juice increased after the administration of pancreozymin.

4) Acetylcholine given either transitorily or continuously increased markedly the output of amylase into the pancreatic juice, but reduced the flow of pancreatic juice.