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**SECRETORY RESPONSES AND REDOX STATE OF CYTOCHROMES
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PANCREATIC ACINI**

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Secretory responses of the exocrine pancreas and the redox state of cytochromes, a (a_s), b and c + c_1 , were compared among three different preparations of exocrine pancreas of the rat: the isolated perfused pancreas, the pancreatic lobules and the dispersed pancreatic acini.

The concentration of carbachol (CCh) to produce a half-maximal amylase release (ED_{50}) was about 1×10^{-7} M in the isolated perfused pancreas, and the maximal amylase release was 15 fold of the spontaneous control release.

ED_{50} for the pancreatic lobules was about 7×10^{-7} M, and the maximal amylase release was 8 fold of the spontaneous control release.

The dose-response relation obtained in the dispersed pancreatic acini was in between the relation obtained in the isolated perfused pancreas and that obtained in the pancreatic lobules.

In the isolated perfused pancreas, marked reduction of the cytochromes was recorded during continuous stimulation with 3×10^{-7} M CCh, which evoked maximal amylase release.

No reduction of the cytochromes was detected in the pancreatic lobules nor in the dispersed pancreatic acini during stimulation with 3×10^{-8} M CCh and 1×10^{-8} M CCh respectively, despite the fact that the stimulation with these doses of CCh induced maximal amylase release.

These results indicate that the isolated perfused pancreas was most sensitive to the CCh stimulation, that its secretory response was higher than the other two preparations, and that the reactivity of the intracellular respiratory system was reserved. The pancreatic lobules and dispersed pancreatic acini were not as sensitive as the isolated perfused pancreas, and their intracellular respiratory system may already have shifted to a certain reduction level. The resting redox state of the intracellular respiratory system seems to be responsible at least in part for the sensitivity difference among these three preparations.