Effect of Bak Foong Pills on Exocrine Pancreatic Secretion in rats

Epithelial Cell Biology Research Center, Department of Physiology, The Chinese University of Hong Kong, Shatin, Hong Kong

Bak Foong Pills (BFP, also known as Bai Feng Wan) has long been used for treating gynecological disorders and improvement of overall body functions including gastrointestinal (GI) function. Using the short-circuit current technique, we have demonstrated that BFP ethanol extract exerted a stimulatory effect on gastrointestinal Cl⁻ secretion by activating adenylate cyclase and apical cAMP-dependent Cl⁻ channels in T84 human colonic cells. We further examined the effect of BFP ethanol extract on exocrine secretion of the pancreas in rats. Experiments were performed on anesthetized rats prepared with bile-pancreatic fistula. A polyethylene catheter (PE-10) was inserted into the common bile-pancreatic duct at the ampulla to collect bile-pancreas juice. A second catheter (PE-50) was placed in the duodenum, slightly above the sphincter of Oddi, for duodenal infusion of BFP ethanol extract and other chemicals. Duodenal return of bile-pancreas juice was performed every 15 minutes. The results showed that duodenal infusion of BFP ethanol extract significantly increased the pH value of bile-pancreas juice from 7.78 to 7.94 (P<0.01), as compared to the basal control values. Similar increase in pH was also observed with forskolin, an activator of adenylate cyclase ((P<0.01). It is likely that BFP may exert its effect by increasing release of secretin, which in turns stimulates cAMP-dependent exocrine pancreatic secretion, most likely bicarbonate secretion. Together with its observed effect on colonic secretion, the effect of BFP on exocrine pancreatic secretion contributes to its pharmacological actions on GI tract. (Supported by Innovation & Technology Fund by Innovation & Technology Commission of Hong Kong SAR)