

Spasmolysis of combined Bee glue and Shaoyao-Gancao-tang on isolated rabbit jejunum

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Background - Propolis (bee glue) is a valuable byproduct of apiculture, which is found in honeybee hives. It has been suggested that propolis-ethanol-extract has antitumour, antimicrobial, antifungal, antiviral, antihepatotoxic, antioxidative, and anti-inflammatory activities (1). Shaoyao-Gancao-tang, a prescription of Chinese Medicine, consists of water extract of liquorice (*Radix Glycyrrhizac*) and peony (*Paeonialaciflora*) roots (2).

Objective - To investigate the effect of combined propolis-ethanol-extract and Shaoyao-Gancao-tang (PSG) on contraction of isolated rabbit jejunum *in vitro*.

Design - PGS was prepared from the ethanol extract of propolis and water extract of 1:1 liquorice and peony roots. One end of the jejunum tube (3-4cm) was fastened to the ventilating pipe of a thermostatic bath, the other end to the tensioning exchanger, which was connected to a Recorder.

Outcomes - With the same concentration (0.02%), PSG showed a 31% reduction on the maximum relaxation time compared with propolis-ethanol-extracts or Shaoyao-Gancao-tang ($p < 0.01$, $n = 10$). This result indicates that there was a synergistic effect between propolis-ethanol-extracts and Shaoyao-Gancao-tang on the myenteric relaxation of jejunum *in vitro*.

Conclusions - The action of PSG on jejunum smooth muscles is most likely through M-receptors, since acetylcholine induced jejunum contractions were significantly decreased by PSG, and there was a remarkable synergistic effect between atropine and PSG ($p < 0.001$, $n = 8$). In conclusions, the PGS showed an antispasmodic activity, and inhibits peristalsis of jejunum smooth muscles via inhibiting M-receptors.

1. Castaldo S, Capasso F. Propolis, an old remedy used in modern medicine. *Fitoterapia*. 2002;73:S1-6.
2. Zhang, ZJ. *Shang Han Lun*. 1st edn, Shanghai Sci & Tech Publishing House, Shanghai. 1983.