

Investigating the potential mechanism of Iberogast: a potential new herbal treatment for intestinal disease

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Background

Inflammatory bowel disease (IBD) is a serious idiopathic and, so-far, incurable condition affecting approximately 1 in 8000 individuals in Australia. It comprises two variants, ulcerative colitis and Crohn's disease. The histopathological features of Crohn's disease are similar to Johne's disease, a debilitating condition that affects livestock. On the other hand, intestinal mucositis (IM), which often manifests in cancer patients undergoing chemotherapy, affects primarily the small intestine. Current therapies for IBD and IM attempt to reduce inflammation and injury to the bowel but these are often ineffective.

Aims and Significance

Iberogast is a plant-based extract sourced from 9 different plants. In Europe it is used for the treatment of intestinal disorders such as dyspepsia. However, much of the health claims for Iberogast have relied primarily on anecdotal indications of therapeutic benefit. There have been relatively few rigorously-conducted scientific studies to underpin its use health-related purposes. In a previous Honours project (Wright et al; Cancer Biology and Therapy, 2009) we have identified indications that Iberogast may be protecting the small intestine from injury, and we are currently investigating its potential to treat disorders of the large bowel. The current study will investigate a potential mechanism of action for Iberogast by determining effects on intestinal mucins and cell kinetics of intestinal enterocytes (cells lining the intestine).

Techniques to be used

Iberogast treated gastrointestinal tissues ben collected from rats with experimentally-induced IBD and IM will be subjected to mucin staining and subsequent localisation and quantification. Different types of mucin will be determined and correlated with histological parameters (villus height/crypt depth) and enterocyte kinetics (proliferation/apoptosis) using immunohistochemistry. Some small animal handling will be involved.

Reference

TH Wright, C Feinle-Bisset, AN Pilichiewicz, RN Butler, KA Lymn, R Yazbeck, KY Cheah, EJ Whitford, GR Sander, S Mashtoub and GS Howarth. The herbal extract, Iberogast, partially improves small intestinal integrity in rats with mucositis induced by 5-Fluorouracil. *Cancer Biol Ther.* 8(10): [Epub ahead of print] (2009).