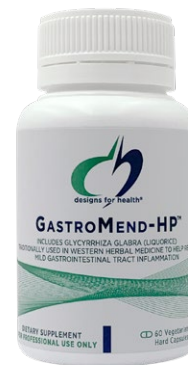


# Gastromend-HP™



Includes liquorice, traditionally used in Western herbal medicine to help relieve mild gastrointestinal tract inflammation



1 Vegetarian Hard Capsule

## OVERVIEW

- > Herbal and nutritional formulation to assist mild gastrointestinal inflammation
- > Inclusion of DGL Liquorice, Chios Mastic and zinc carnosine at therapeutic quantities/doses
- > Specific therapeutic mechanisms action activity of formulation ingredients
- > Capsule dosage for easy compliance

Active Ingredients (per vegetarian hard capsule)	
Glycyrrhiza glabra (DGL Liquorice) root extract std.	46.88 mg
min. equiv. dry	375 mg
equiv. glycyrrhizin NMT	700 micrograms
Mastic	250 mg
Polaprezinc (zinc carnosine) equiv. zinc	18.78 mg 4 mg
Ascorbic acid (vitamin C)	125 mg

<b>Pack Size</b>	60
<b>Serving Per Pack</b>	15 serves

Excipients	
Hypromellose	Purified water
Magnesium stearate	Microcrystalline cellulose
Maltodextrin	Silicon dioxide

Directions for Use
Adults: Take 4 capsules per day, or as directed by your healthcare professional.

Allergen Information
Does not contain: gluten, dairy, lactose, soy, nuts.

Prescribing Considerations
<ul style="list-style-type: none"> <li>• The DGL form of liquorice is considered a safer form that is less likely to result in drug interactions.<sup>1</sup></li> <li>• Caution is advised with use of liquorice in individuals with hypertension, fluid retention, male impotence, infertility or reduced libido.<sup>1</sup></li> <li>• Use of liquorice for more than 2 weeks at therapeutic doses should be monitored due to potential side effects.<sup>1</sup></li> <li>• Liquorice is contraindicated in individuals with hypotonia, severe renal insufficiency, hypokalaemia, liver cirrhosis and cholestatic liver disease.<sup>1</sup></li> <li>• Caution is advised regarding use of vitamin C in individuals with iron overload sensitivities including erythrocyte glucose-6-phosphate dehydrogenase deficiency, haemochromatosis, thalassaemia major or sideroblastic anaemia.<sup>1</sup></li> <li>• Caution is advised with concomitant use of zinc with amiloride, as it reduces zinc excretion and may lead to zinc overload.<sup>1</sup></li> </ul>

Warnings
If symptoms persist, talk to your health professional.

Designed and packed in Australia.



No Added Gluten



No Added Soy



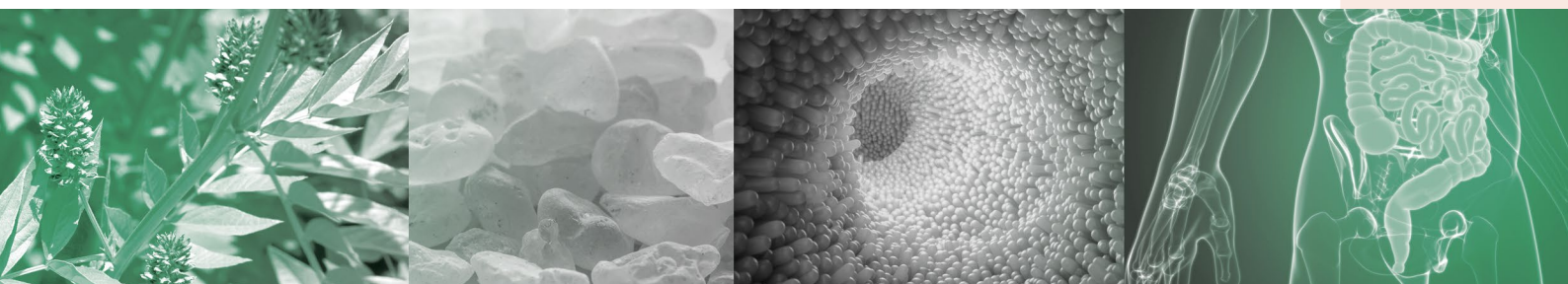
No Added Dairy



No Added Nuts



No Added Lactose





## EDUCATION

Inflammation, acute or chronic, is an important part of the immune system's functional response.<sup>2</sup> However, chronic gastrointestinal inflammation, where there is an imbalance between pro- and anti-inflammatory factors, underlies / causes a broad range of local and extra-intestinal clinical symptoms and pathologies.<sup>3</sup>

Locally, gastrointestinal inflammation can induce abdominal pain, distention, cramping, altered motility, impaired intestinal barrier integrity, microbial dysbiosis and nerve dysfunction.<sup>4,5</sup> Currently known extra-intestinal consequences of gastrointestinal inflammation includes neuropsychological (mood, anxiety, cognition); dermatological (atopic dermatitis, psoriasis); metabolic; disturbed sleep; poor oral health; and suboptimal nutritional status (vitamins A, D, K, carotenoids, folate, iron, zinc and selenium).<sup>5-11</sup>

Just as the endogenous maintenance of intestinal homeostasis involves a complex combination of factors (epithelial barrier function, innate and adaptive immunity, cell migration and autophagy)<sup>12</sup>, the aetiology of gastrointestinal inflammation is also complex and involves multiple antecedents. Such antecedents include genetic predisposition, immune dysregulation and responsiveness, diet (excessive intake of animal protein, sugar, additives; inadequate intake of fruits, vegetables, fibre), smoking, stress and medications.<sup>12-15</sup>

### Liquorice

Liquorice (*Glycyrrhiza glabra*) has a long history of use in Traditional Western Herbal Medicine for supporting gastrointestinal health and reducing mild gastrointestinal inflammation.<sup>16</sup> Deglycyrrhizinated liquorice (DGL) has had the glycyrrhizin compound removed, and this form is used clinically to minimise glycyrrhizin-associated adverse side effects while maintaining the therapeutic properties of liquorice.<sup>17</sup> The primary active constituents of DGL are flavonoids, with other compounds including isoflavonoids, chalcones, coumarins, triterpenoids, sterols, lignins, amino acids and volatile oils.<sup>18</sup> DGL ameliorates gastrointestinal inflammation by stimulating mucosal blood supply and increasing mucous-producing cell concentrations and activity.<sup>18</sup> This subsequently promotes intestinal tissue repair, proliferation and healing to occur when chronic gastrointestinal inflammation is present.<sup>18</sup>

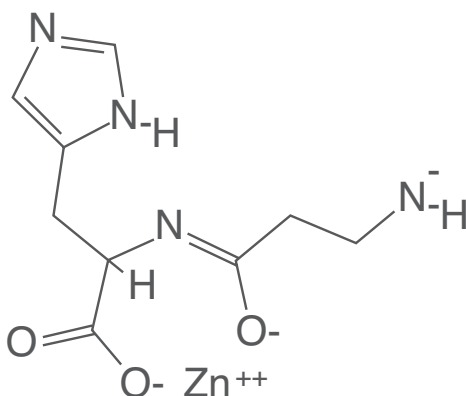


Fig. 1: Zinc carnosine structure

### Mastic

Mastic gum (*Pistacia lentiscus*) has been used traditionally for over 2500 years, with records of its' therapeutic use for stomach and intestinal disorders dating back to ancient Greek times.<sup>2,19,20</sup> The primary active part of mastic gum is the unique natural polymer, comprising of constituents including volatile and active compounds, terpenic acids, phytosterols and polyphenols.<sup>2,20</sup> Mastic gum has demonstrated significant anti-inflammatory effects (downregulating pro-inflammatory factors such as nitric oxide, prostaglandins E2, nuclear-factor Kappa B, tumour necrosis-factor- $\alpha$ , C-reactive protein, ICAM-1, IL-6, IL-8) and inhibiting macrophage migration and chemotaxis). Mastic gum also supports wound healing by ameliorating histological damage.<sup>2,20</sup>

### Zinc carnosine

Optimal endogenous zinc levels in the body are important for supporting gastrointestinal structure, function and repair, with deficiency associated with adverse effects on villi height and size, crypt cell number and depth, mucosal cell apoptosis, intestinal barrier integrity and function and local immune activity.<sup>1,21</sup>

Zinc carnosine, also known as polaprezinc, is a chelated combination of zinc and L-carnosine that directly supports gastrointestinal health by protecting the gastric mucosa, restoring the gastric lining affected by intestinal damage.<sup>21,22</sup>

These effects are attributed to several mechanisms including anti-inflammatory (inhibiting nuclear factor kappa-B); antioxidant (increasing superoxide dismutase-1, superoxide dismutase-2, hemeoxygenase-1, peroxiredoxin-1, and peroxiredoxin-V); and wound healing (increasing vascular endothelial growth factor, nerve growth factor, and platelet-derived growth factor, stimulating epithelial cell migration and proliferation, inhibiting mucosal injury).<sup>21,22</sup>

### References supplied on request.

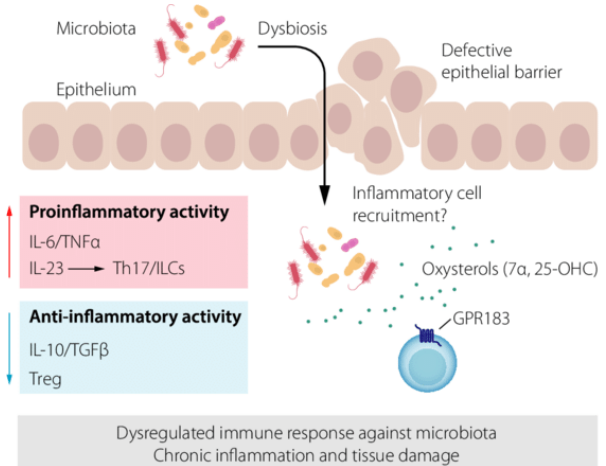


Fig. 2: MOA for intestinal inflammation