



## GASTROMEND-HP™

NUTRIENT & BOTANICAL EXTRACT FORMULA FOR HEALTHY GASTRIC MUCOSA  
60 VEGETARIAN CAPSULES | NPN80050586 | GHM060-CN

**GastroMend-HP™** is a blend of botanical extracts and nutrients with gastric mucosal supportive properties. This novel combination of substances provides a valuable tool in the management of stomach pain and heartburn in association with functional dyspepsia and has been traditionally used to relieve inflammatory conditions of the gastrointestinal tract. It is delivered in quick-release capsules formulated for dissolution and action in the stomach and duodenum.


### FEATURES OF GASTROMEND-HP™

**Mastic gum (*Pistacia lentiscus*)** is a resinous substance from a tree native to Greece and has been used for over 2500 years in the Mediterranean where it is chewed like gum for the purpose of ameliorating stomach pain.<sup>1</sup> Modern scientific research has validated the antimicrobial properties of mastic gum, with human and *in vitro* studies showing it to be effective against *E. coli* and *S. aureus*.<sup>2-5</sup> Mastic gum may also have anti-inflammatory properties. *In vitro* studies demonstrate that mastic gum dose-dependently inhibits production of the superoxide radical and hydrogen peroxide in rodent cells treated with the inflammatory compound TNF- $\alpha$ .<sup>6</sup> Mastic gum did not scavenge the free radicals, rather, it reduced their production, leading researchers to hypothesize that this action is likely responsible for some of the anti-inflammatory activity of mastic gum. Mastic gum has been identified as a PPAR agonist, so it may favorably affect processes that result in inflammation or oxidative stress at the level of gene expression as well.<sup>7</sup> A randomized, double-blind trial investigating the effects of mastic gum on functional dyspepsia found that compared to placebo, mastic gum resulted in significant improvement in stomach pain in general, stomach pain when anxious, heartburn, and dull ache in the upper abdomen.<sup>8</sup> Human and animal studies demonstrate mastic gum's potential role in supporting the treatment of duodenal ulcers and gastric ulcers.<sup>9,10</sup>

**Methylmethionine Sulfonium (MMS)** is a derivative of methionine found in raw cabbage and is often referred to as "vitamin U", although not technically a vitamin. The use of MMS-rich raw cabbage juice has been studied extensively for its beneficial role in supporting the natural healing process of damaged and eroded intestinal mucosa. Human research dating back over 70 years supports the traditional use of raw cabbage juice for dramatically improving gastric and duodenal ulcers, including among subjects who made no other changes to their diet or medication regimens.<sup>11-14</sup>

**Deglycyrrhized Licorice (DGL)** is a well-established mucosal supportive botanical. DGL is a mucilaginous herb that supports healthy intestinal function by coating and soothing the intestinal lining and promoting the natural repair process of inflamed tissue. Being ultra-low in glycyrrhizin, DGL exerts its beneficial gastric effects without the potential side-effects of high-dose full-spectrum licorice consumption (e.g., hypertension, hypokalemia or fluid retention). GastroMend-HP™ provides DGL as

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GutGard®, a patented form of highly concentrated, flavonoid-rich licorice extract. The strong potency of GutGard® makes it effective at one tenth the dose of conventional DGL extracts for decreasing the ulcer index and increasing the pH of gastric fluid (shown in rodent models).<sup>19</sup> An *in vitro* study in murine macrophages and human neutrophils showed that GutGard® inhibits synthesis of the inflammatory prostaglandin PGE2 and activity of enzymes involved in inflammation (COX and LOX).<sup>20</sup>

A randomized, double-blind, placebo-controlled study evaluating the efficacy of GutGard® in adults with functional dyspepsia showed that compared to placebo, taking 150 mg of GutGard® (the amount provided in one 4-capsule serving of GastroMend-HP™) resulted in significant reduction in total symptom scores in as little as 15 days, with reduction increasing further at 30 days.<sup>21</sup> GutGard® promoted marked improvement or total resolution in 60% of subjects compared to over 50% experiencing no change while taking placebo. Improvements were noted in heartburn, nausea, belching, vomiting, regurgitation, loss of appetite, and upper abdominal fullness and pain. Contributing mechanisms may be that GutGard® improves gastric motility, significantly increases gastric emptying and improves GI transit time, as was shown in a rodent model of functional dyspepsia.<sup>22</sup>

**Zinc Carnosine** is included in GastroMend-HP™ based on research showing zinc to have beneficial effects for supporting gastric tissue and the mucosal layer.<sup>29</sup> Compared to placebo, zinc carnosine was shown to neutralize the effect of the NSAID indomethacin on increasing gut permeability in healthy human subjects. (The placebo arm experienced a three-fold increase in gut permeability while the zinc-treated group showed no significant change.<sup>25</sup>) In a trial of patients with small bowel injury induced by extended use of low-dose aspirin, compared to untreated controls, subjects taking zinc carnosine for four weeks showed significant reductions in the number of reddened lesions and erosions, confirmed by capsule endoscopy before and after.<sup>31</sup> Zinc carnosine—zinc complexed with the amino acid L-carnosine in a 1:1 chelate—is the preferred form of zinc for this formula because it does not easily dissociate in stomach acid and effectively adheres to lesions, after rapid dissociation and adheres to ulcerous lesions more effectively, after which the L-carnosine and zinc are separated and have beneficial effects on the affected tissue.<sup>32,33</sup>

**Vitamin C** is included for its role in tissue regeneration. Vitamin C may be effective both restoratively and prophylactically, although more evidence supports the latter. Low levels of vitamin C in serum and gastric juices have been consistently found in subjects with gastritis.<sup>34</sup> Vitamin C deficiency is associated with all forms of gastritis, including autoimmune (pernicious anemia) and experimentally induced. Researchers note that gastric inflammation “can decimate total body ascorbic acid stores by continually quenching high levels of ascorbic acid at inflammatory sites and destroying it in a hypochlorhydric environment.”<sup>36</sup> Since vitamin C deficiency may be as much a result as a contributor to these issues, it is prudent to include vitamin C in a formula designed for patients with gastric inflammatory conditions.

**Medicinal Ingredients (per capsule):**

Mastic Gum.....	250 mg
Vitamin C (Ascorbic Acid).....	125 mg
S-Methymethionine chloride (Vitamin U).....	50 mg
Licorice - DGL.....	37.5 mg
Zinc L-carnosine.....	18.75 mg

**Non-Medicinal Ingredients:** Dicalcium phosphate, hypromellose, magnesium stearate (vegetable source), tricalcium phosphate, silicon dioxide. **Recommended Dose:** Adults: Take 2 capsules twice a day before a meal, or as directed by your health care practitioner. Take a few hours before or after taking other medications. For use beyond 2 weeks, consult a health care practitioner. Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities. Individual monitoring, including liver function tests, may be appropriate.

**REFERENCES**

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