Bio.Revive Kinetic

A formula to provide natural support for the motility of the lower oesophageal sphincter and small intestine.

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Small intestinal bacterial overgrowth (SIBO) is often due to a delay in gastric or small intestine emptying. Functional damage, infections or a slow migrating motor complex may contribute to this slow movement. Dyspepsia, reflux and other upper digestive colic-like symptoms can also be caused by a loss of sphincter tone and reduced small intestinal movement.

Bio.Revive Kinetic blends traditional therapies for the upper digestive tract with the latest research. As with all plants, this formula offers additional benefits, as well as those intended.

Bio.Revive Kinetic key ingredients

Ginger – *Zingiber officinale Roscoe*

Traditionally in Western herbal medicine, ginger has been utilised in the digestive tract for dyspepsia, flatulent colic, gastritis and diarrhoea associated with depletion. It is thought to display anti-emetic, stomachic, carminative and antispasmodic effects. It is commonly used to treat nausea, gastrointestinal cramping, loss of appetite and cold extremities[1]. Research indicates ginger reduces nausea in pregnancy and post chemotherapy[2]. Ginger also has the additional properties of being anti-inflammatory, spasmolytic, anti-platelet and a diaphoretic[17].

Use as a prokinetic

Ginger extracts accelerate gastric emptying and stimulate gastric antral contractions. These effects are mainly due to the presence of gingerols and shogaols and their activity on cholinergic M receptors and serotonergic 5-HT and 5-HT receptors. A double-blind, randomized, placebo-controlled trial (n=12) investigated the effects of a ginger extract (100mg, corresponding to 2g of rhizome twice a day) on gastroduodenal motility. A statistically significant increase in inter-digestive motility was observed in the intervention group in comparison with the placebo group[3].

Nutritional Information	**Per Dose**
Actives	(3 capsules)
Ginger Root Extract 10:1 (5% Gingerols)	50mg
Artichoke Leaf Powder	200mg
Zizyphus Jujube 10:1 (red date)	200mg
Organic Amalaki Fruit	600mg
Organic Haritaki Fruit	500mg
Organic Poria cocos	390mg
Griffonia Seed Extract (99% 5HTP)	50mg
Citrus Bioflavanoid Extract (MicrobiomeX®)	50mg
Liquorice Root Powder	20mg
Panax Korean Ginseng Powder	20mg
Other Ingredients: Magnesium Stearate, Capsule Shell (Hydroxypropyl Methylcellulose).	

GMO free, suitable for vegetarians

Directions:
Take 3 capsules daily. Do not exceed the recommended dose, unless advised by your healthcare professional.

Contraindications and Precautions:
Contains 5-HTP – should not be used in patients currently being treated, or who have recently been treated with, an SSRI antidepressant and should be discontinued two weeks prior to having surgery.

Contains Liquorice – should not be used with any potassium sparing diuretics, or for those with hypertension.

Not suitable during pregnancy or lactation.

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A subsequent RCT showed ginger accelerates gastric emptying and stimulates antral contractions in healthy volunteers. After ingestion of 1200mg of ginger extract or placebo, the frequency of antral contractions was greater in the ginger group vs the placebo group. There was no significant difference in any gastrointestinal symptoms[4]. Patients with functional dyspepsia, displayed faster gastric emptying after ginger than after placebo[5].

Within in vivo and in vitro studies, ginger has been shown to have a prokinetic effect. The extract may have stimulant effect on reticulorumen motility in 40mg kg-1 concentration[6]. Studies on rats show an increased food transit time through the stomach[9]. Ginger also has been shown to improve bile acid and pancreatic enzyme production, all leading to improved digestion. It is also protective to the gastric mucosa[10].

In vivo studies do not identify any major toxicities[7]. The ginger metabolites, 6-, 8- and 10-GN and 6-SG, were found to be safe for healthy human subjects up to doses of 2000mg[8]. A few individuals experienced minor gastrointestinal symptoms, including eructation, heartburn and indigestion at the highest doses.

Phyllanthus emblica / Emblica officinalis (Amla: a Triphala fruit)

Amla (or Indian gooseberry) is a fruit that has traditionally been used in Ayurvedic medicine as a tonic to restore energy and strength. It makes up one of the three fruits in the traditional digestive tonic, Triphala.

Amla exhibits a broad spectrum of pharmacological activities through various mode of actions including antioxidant, gastroprotective, anti-diarrhoeal, immunomodulator, anti-inflammatory and cytoprotective properties. The polyphenols found in Emblica officinalis, especially tannins and flavonoids, are the key responsible elements for most of the major bioactivities.

It is also used in the cases of managing diabetes, dyslipidaemia, obesity, several types of cancer, liver disorders, arthritis, gingivitis, wound healing and digestive disorders[11].

In a randomized double-blind, placebo-controlled clinical trial, it was demonstrated that Amla could reduce frequencies and severity of heartburn and regurgitation in patients with non-erosive reflux disorder, at a dose of 500mg given twice a day after meals[12].

In rat models of cisplatin-induced delayed gastric emptying, Amla extract was shown to completely reverse delayed gastric emptying, comparable to the ondansetron treatment group[18].

The ethanolic extract of Amla has been shown to have anti-ulcer and pancreatic protective effects in rats[13]. Amla is also an anti-diarrheal as well as a light laxative[13]. Amla extracts contain relatively high levels of Vitamin C.

Terminalia chebula (Haritaki)

Haritaki is one of the triad of fruits that make up the traditional Indian formula, Triphala. Triphala is traditionally used as a bowel tonic in Ayurvedic medicine.

It has been used in Ayurvedic medicine as a remedy for several conditions, including heart disease, asthma, ulcers and stomach ailments. Haritaki contains phytochemicals such as terpenes, polyphenols, anthocyanins and flavonoids. Studies have shown that haritaki possesses anti-inflammatory and antioxidant properties.

Components of *Rikkunshito* - Hesperidin (citrus peel), Red date (*Zizyphus spinosa*), liquorice (*Glycyrrhiza glabra*), Ginseng (*Panax ginseng*) and Poria mushroom

Rikkunshito

Rikkunshito is traditional Japanese Kampo medicine that has been used in Japan to treat various disorders of the gastrointestinal (GI) tract for over 600 years. It comprises of a formula of eight herbs:

Glycyrrhizae radix (liquorice), *Zingiberis rhizome* (ginger), *Atractylodis lanceae rhizoma*, *Zizyphi fructus* (red date), *Aurantii nobilis pericarpium* (Citrus Peel), *ginseng radix* (Panax ginseng root), Pinelliae tuber and Hoelen (poria mushroom)[14]. Six of these are approved novel foods for use in the UK. The human dosage of this preparation is traditionally 4g a day.

In Japan, Rikkunshito has traditionally been used to treat functional dyspepsia and recent human studies have indicated that is also effective in gastroesophageal reflux disease, functional dyspepsia and non-ulcerative dyspepsia[28]. It is thought to improve functional dyspepsia by reversing an existing impaired adaptive relaxation of the lower sphincters, leading to an improvement of delayed gastric emptying[15].

The mechanisms of action are varied, primarily Rikkunshito appears to improve nitric oxide signalling, which plays an important role in GIT motility. Rikkunshito has also been shown to improve ghrelin signalling, which in turn improves upper GI motility. Human clinical trials in severely handicapped patients and in children that have post-operative complications after GI surgery have shown improvements in dyspepsia symptoms[28].

Poria

Poria is an edible and medicinal mushroom that is used to treat chronic gastritis, oedema, nephrosis, gastric atony, acute gastroenteric catarrh, dizziness, nausea, and emesis[27], as well as being a constituent of Rikkunshito.

MicrobiomeX®

MicrobiomeX® is a natural citrus fruit peel extract, with a superior stability and standardised for its high content of two core flavonoids, with a high level of hesperidin, which has been shown to be one of the more active constituents of Rikkunshito. Clinically, MicrobiomeX® has also been shown to lower faecal calprotectin levels and increase the intestinal short chain fatty acid butyrate, which has a protective effect on the GIT endothelial lining[29].

Globe artichoke *(Cynara scolymus)*

Traditionally Cynara has been used as a hepatoprotective, hepatic tropho-restorative, choleretic, cholagogue, bitter tonic, hypocholesteriaemic, antiemetic, diuretic and depurative[19]. Both Cynara and its active constituent, cynarin, has been shown to increase bile secretion. Oral administration of Cynara shows stimulated movements of gastrointestinal contents along the small intestine in an experimental model[20].

In a pilot randomised control study a mixture of ginger extract (20mg) and artichoke leaf extract (100mg), showed promotion of gastric emptying in healthy volunteers after the consumption of a standardised meal, without being associated with notable adverse effects[20].

Globe artichoke has been shown to increase bile flow, reduce upper intestinal bloating, reduce nausea, reduce gas, improve appetite and improve fat tolerance in human clinical trials[21].

5-Hydroxytryptophan (5-HTP)

5-hydroxytryptophan is an intermediary metabolite between tryptophan and serotonin production, and it is absorbed easily via the gut, and bypasses the rate limiting step of tryptophan hydroxylase[28].

It is widely recognised that therapies modulating serotonin 5-hydroxytryptamine (5-HT) activity are partly effective in patients with functional intestinal disorders. Serotonin released from the enterochromaffin cells mediates many GI functions, including peristalsis, secretion, vasodilation and perception of pain or nausea, through activation of a diverse family of 5-HT receptors on intrinsic and extrinsic afferent nerve fibres that are located in the lamina propria[25]. There are indications of increased transcription of tryptophan hydroxylase 1 (TPH1) and lowered serotonin re-uptake transporter (SERT) expression throughout the gut in isolated functional dyspepsia[24].

In canines, 5-HTP is a potent stimulator of propagated contractions both in the duodenum and the adjacent jejunal segment and the intestinal motor patterns can be regulated independently of gastric emptying[22]. In murine models, 5-Hydroxytryptamine has been shown to activate the migrating motor complex by activating the 5-HT(7) receptors[23].

Large doses of 5-HTP have been known to give the side effects of nausea. This may be due to the dosage being too large, and thus stimulating gastric motility excessively at once. For use in gastric motility, lower doses (such as 50mg) taken with food lessen the chance of any gastrointestinal discomfort.

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