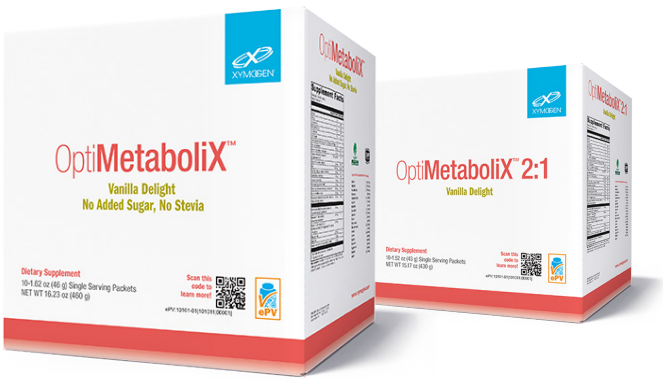
OptiMetaboliX™ and OptiMetaboliX™ 2:1

For Support of Healthy Glucose and Insulin Metabolism*
Featuring InSea²®—Next Generation Carbohydrate Control*



OptiMetaboliX is available in Vanilla Delight No Added Sugar, No Stevia
OptiMetaboliX 2:1 is available in Vanilla Delight

Clinical Applications

- Supports Healthy Glucose and Insulin Metabolism*
- Helps Reduce Glycemic Impact of Meals*
- Supports Healthy Body Composition*
- Supports Healthy Blood Lipid Metabolism*
- Provides Antioxidant Support*
- Supports the Maintenance of Healthy Peripheral Nerves*

OptiMetaboliX™ *and* ***OptiMetaboliX™ 2:1*** *exclusive combination of well-researched, clinically validated, and highly bioavailable ingredients that provides multimodal support for healthy insulin and glucose metabolism and related pathways. It features InSea²®—an optimized blend of purified polyphenols from wild-crafted brown seaweed. InSea² uniquely slows carbohydrate digestion and assimilation and can reduce the impact of high-glycemic foods. This newly developed, next generation dual carb controller is 100% natural, has an excellent safety profile, and is friendly to the gastrointestinal tract.* OptiMetaboliX 2:1 provides the same active ingredients as OptiMetaboliX but with fewer grams of carbohydrate (12 g versus 15 g per serving), yielding approximately a 2:1 protein to carbohydrate ratio.†*

Discussion

InSea² is a clinically tested blend of purified polyphenols sourced from *Ascophyllum nodosum* and *Fucus vesiculosus,* two species of wild-crafted brown seaweed. It is the only product on the market that targets enzymes involved in carbohydrate digestion and assimilation with a dual mechanism of action. InSea² inhibits alpha-amylase (a starch-degrading enzyme) and alpha-glucosidase (a sucrose-degrading enzyme) and reduces the after-meal impact of ingested high-glycemic–index foods. In humans, InSea² (500 mg/d) attenuated by 48% the rise in blood glucose normally produced by ingesting white bread, reduced insulin secretion by 12%, and improved insulin sensitivity by 8% compared to placebo.[1] Lowering postprandial blood glucose may support glucose/insulin regulation, improve insulin sensitivity, and support healthy lipid profiles, leptin levels, and appetite control. In another human trial, treatment with a formulation containing InSea² resulted in a 33% increase in feelings of satiety, a decrease in next-meal caloric intake, and a significant impact on weight reduction compared to placebo.[2] InSea² has been evaluated in clinical trials, animal safety and efficacy studies, and in vitro tests. It has an excellent safety profile and is friendly to the gastrointestinal tract.*

CinSulin® is a clinically proven, patented water extract of cinnamon (*Cinnamomum cassia*) shown to influence glucose metabolism. The unique proprietary extraction and dehydration process for manufacturing CinSulin results in a concentrated (10:1) extract that minimizes undesirable substances while retaining those substances that are health-promoting, such as type-A polyphenolic polymers. Cinnamon has been studied extensively for its roles in glucose uptake, glycogen synthesis, insulin action, and support for healthy blood lipid metabolism.[3,4] Anderson et al demonstrated a 20-fold increase in glucose uptake in fat cells treated with water-soluble type-A polymers.[5] In human studies, water-extracted cinnamon supplementation (500 mg/d) helped the body maintain healthy blood sugar levels,[6] improved antioxidant status,[7] and supported healthy blood pressure and body composition changes.*[4]

VegaPro™ is a pure, sweetener-free, vegetable protein blend sourced from non-GMO pea protein isolate, and rice protein concentrate. This proprietary blend achieves an amino acid score of 100% and has excellent digestibility. Moderately high-protein, low-glycemic foods help increase feelings of satiety and support healthy body composition, healthy blood lipid metabolism, and postprandial glucose levels.[8-10] In an animal study comparing the effects of pea protein and casein on blood lipids, rats fed pea proteins showed a significant improvement in blood lipid levels compared to rats that were fed casein. The researchers also found that the pea proteins appeared to "affect cellular lipid homeostasis by upregulating genes involved in hepatic cholesterol uptake and by downregulating fatty acid synthesis genes."[10] These findings were echoed in a 2013 study performed in rats that tested the effects of a combination of pea protein and soluble fibers on cholesterol homeostasis and metabolism.*[11]

Inulin, a soluble fiber from chicory root, is utilized in the OptiMetaboliX formulas (8 g/serving) as a low-glycemic–index carbohydrate that supports glucose management and gastrointestinal health. In a randomized, triple-blind, controlled trial, 49 females received either 10 g/d of inulin (intervention, n = 24) or maltodextrin (control, n = 25) for two months. At the end of the study period, significant positive effects were recorded on several glycemic and antioxidant indices (e.g., glucose metabolism, glycosylated hemoglobin, malondialdehyde, and total antioxidant capacity) in the inulin group when compared to the maltodextrin group ($P < 0.05$).[12] As a prebiotic, inulin promotes the growth of beneficial intestinal bacteria.*

Benfotiamine is a lipid-soluble, highly bioavailable form of thiamin (vitamin B1) that enhances the activity of transketolase, an enzyme that catalyzes the conversion of harmful glucose intermediate metabolites in the pentose phosphate pathway.[13] In vitro research showed treatment with benfotiamine had an impressive effect on transketolase activity (454% increase from control). Researchers further demonstrated that increasing transketolase activity diverts harmful intermediate metabolites away from three of the major pathways (including advanced glycation end-product formation) implicated in hyperglycemia-induced vascular damage.[14] In addition to benfotiamine, OptiMetaboliX and OptiMetaboliX 2:1 provide a full spectrum of highly bioavailable B vitamins, including folate, as Quatrefolic, and high-dose biotin to support carbohydrate/glucose metabolism, insulin action, and nerve health.*

Alpha-Lipoic Acid (ALA) and Green Tea Leaf Extract are included in OptiMetaboliX and OptiMetaboliX 2:1 for their well-known protective antioxidant effects as well as for their roles in glucose metabolism and insulin action and sensitivity.[15,16] Additionally, green tea leaf extract has been shown to support a healthy body mass index, and ALA has important roles in protecting peripheral nerves.[17] AMP-activated protein kinase (AMPK) and adiponectin, an adipokine, are targets of cardiometabolic health research due to their roles in cellular energy homeostasis and insulin sensitizing, respectively. The effects of ALA on these targets were studied in rats fed a high-fat or low-fat

Blood Sugar Support

Body Composition

Cardiovascular Support

OptiMetaboliX™ Vanilla Delight No Added Sugar, No Stevia Supplement Facts

Serving Size: 1 Packet (about 46 g)
Servings Per Container: 10

	Amount Per Serving	% Daily Value
Calories	160	
Total Fat	5 g	6%*
Saturated Fat	1.5 g	8%*
Total Carbohydrate	15 g	5%*
Dietary Fiber	10 g	36%
Total Sugars	1 g	**
Protein (from Pea Protein Isolate and Rice Protein Concentrate)	21 g	
Niacin (as niacinamide)	40 mg	250%
Vitamin B6 (as pyridoxal 5'-phosphate)	5 mg	294%
Folate (as [6S]-5-methyltetrahydrofolic acid, glucosamine salt)[S1]	200 mcg DFE	50%
Vitamin B12 (as methylcobalamin)	50 mcg	2083%
Biotin	5000 mcg	16,667%
Pantothenic Acid (as d-calcium pantothenate)	35 mg	700%
Calcium (naturally occurring)	25 mg	2%
Iron (naturally occurring)	4 mg	22%
Zinc (as zinc bisglycinate chelate)[S2]	15 mg	136%
Chromium (as chromium nicotinate glycinate chelate)[S2]	500 mcg	1429%
Sodium (naturally occurring)	430 mg	19%
Potassium (from tripotassium citrate and ingredients with naturally occurring potassium)	410 mg	9%
Brown Seaweed Blend (*Ascophyllum nodosum* and *Fucus vesiculosus*)(20% polyphenols)[S3]	500 mg	**
Cinnamon 10:1 Aqueous Extract (*Cinnamomum cassia*)(bark)[S4]	200 mg	**
Organic Green Tea Aqueous Extract (*Camellia sinensis)*(leaf)(25% polyphenols, 15% catechins, <10% caffeine)	200 mg	**
Alpha-Lipoic Acid	200 mg	**
Benfotiamine	50 mg	**
Vanadium (as vanadium nicotinate glycinate chelate)[S2]	2.5 mg	**

* Percent Daily Values are based on a 2,000 calorie diet.
** Daily Value not established.

Other Ingredients: Inulin (from chicory), natural flavors (no MSG), sunflower oil, cellulose gum, xanthan gum, taurine, glycine, medium-chain triglyceride oil, fungal proteases[S5], guar gum, L-glutamine, and monk fruit extract.

DIRECTIONS: Blend, shake, or briskly stir the contents of one packet (46 g) into 8-10 oz chilled water and consume one to two times daily; or take one to two scoops approximately 20-30 minutes before each main meal; or use as directed by your healthcare professional.

Consult your healthcare professional. prior to use. Not intended for use by pregnant or lactating women or children under 12. Individuals taking medication should discuss potential interactions with their healthcare professional.

STORAGE: Keep closed in a cool, dry place out of reach of children.

FORMULATED TO EXCLUDE: Wheat, gluten, yeast, soy protein, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners, and artificial preservatives.

Quatrefolic® S1. Quatrefolic® is a registered trademark of Gnosis S.p.A. Produced under US Patent 7,947,662.

S2. Albion® and TRAACS® are registered trademarks of Albion Laboratories, Inc. Chelates covered by US patent 7,838,042 and patents pending.

S3. InSea²® is a registered trademark of innoVactiv Inc.

S4. CinSulin® is a registered trademark of Tang-An Medical Ltd., manufactured under US patents 8,304,000 and 8,329,232.

AMINOGEN® S5. AMINOGEN® is a registered trademark of Innophos Nutrition, Inc. AMINOGEN® is protected under U.S. patent 5,387,422.

VegaPro™ 100% VEGAN 100% GLUTEN-FREE

OptiMetaboliX 2:1 is available in Vanilla Delight.

OptiMetabolix 2:1 contains all of the same active ingredients found in OptiMetaboliX. However, it contains significantly fewer grams of carbohydrate (12 g/serving).

(control) diet. The researchers found ALA supplementation reduced body weight and adiposity in both groups. In the high-fat diet group, ALA supported insulin homeostasis and stimulated AMPK and adiponectin in white adipose tissue.*[18]

Chromium, Vanadium, and Zinc are provided as Albion® TRAACS® amino acid chelates for optimal absorption and utilization. Chromium supports the metabolic action of insulin and may work synergistically with biotin to improve glucose tolerance. Vanadium may reduce hepatic gluconeogenesis and mimic insulin's effect while zinc plays a major role in the stabilization of insulin hexamers and the pancreatic storage of the hormone.*[19]

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Additional references available upon request

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All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

DRS-262
Rev. 07/02/20