OptiCleanse® Plus

No Added Sugar, No Stevia

Available in Vanilla Delight No Added Sugar, No Stevia and Creamy Chocolate No Added Sugar, No Stevia

Clinical Applications

- Provides Nutrients Associated With Detoxification Mechanisms*
- May Support Healthy Estrogen Modulation in Post-Menopausal Women*
- Provides High-Quality Macro- and Micronutrients*

***OptiCleanse® Plus** is a comprehensive nutritional formula that provides high-quality macro- and micronutrients associated with biological detoxification pathways. The formulation features 24 grams of VegaPro™, a proprietary vegan pea/rice protein; Aminogen® enzyme blend to facilitate protein absorption; activated B vitamins like 5-MTHF and Albion's patented mineral amino acid chelates for optimal nutrient bioavailability; and milled golden flaxseed that provides a source of omega-3 fatty acids and lignans, which may support estrogen modulation in postmenopausal women. When paired with a modified elimination diet, this formula nourishes the body's detoxification systems and fuels sustained energy production. This monk fruit–sweetened formula boasts a superior taste without added sucrose, fructose, or stevia and is suitable for vegans.**

Discussion

Persistent bioaccumulative toxicants originate from various industrial and agricultural practices and processes. These toxicants linger in soil, air, water, and dust for long periods and can be inhaled into the lungs, absorbed via the skin, or consumed through the food chain. Additionally, over 10,000 chemicals are allowed in US food products. Some of these chemicals are direct additives (eg, artificial colors, preservatives), while others are indirect additives that contaminate food during processing, storage, and packaging.[1] Exposure to and accumulation of such toxicants within the body pose significant health risks to humans, including endocrine disruption, neurological effects, immune system dysfunction, and cell-cycle disturbances.[2]
The physiological process of detoxification—mobilization, modification, and excretion of exogenous and endogenous toxicants—transforms primarily nonpolar, lipid-soluble toxicants into polar, water-soluble, and excretable derivatives.[3] The steps in molecular detoxification pathways are classified as phase I, which is mediated primarily by cytochrome P450 (CYP450) enzymes, and phase II, which is mediated by conjugation enzymes.*

Various macro- and micronutrients are used in these phases of detoxification. Furthermore, adequate nutrient levels—including vitamins, minerals, antioxidants, and amino acids—are essential for mitochondrial function and play crucial roles in energy metabolism and adenosine triphosphate (ATP) production. As the chief contributor of free energy in all biological systems, ATP fuels all biochemical reactions, including detoxification reactions.*

OptiCleanse Plus is an excellent adjunct to an effective detoxification program. It provides gentle, comprehensive nutrition with high-quality protein, amino acids, micronutrients, antioxidants, metabolic cofactors, and flaxseed.

VegaPro™
XYMOGEN's VegaPro protein is a proprietary blend of non-GMO pea protein concentrate, pea protein isolate, rice protein concentrate, taurine, glycine, and L-glutamine. This easy-to-digest protein has a well-balanced amino acid profile, including essential branched-chain amino acids, and is high in lysine and arginine. Protein contributes amino acids, which play vital roles in detox physiology: amino acids serve as building blocks for phase 1 CYP450 enzymes and are required to conjugate intermediate metabolites during phase 2 detoxification processes.[4,5] Additionally, a consistent amino acid supply is necessary for the biosynthesis of glutathione, which has a critical role in phase 2 glutathione conjugation of physiologic metabolites (eg, estrogen) and xenobiotics.*[6]

Aminogen®
Aminogen is a naturally derived, patented blend of fungal proteases derived from *Aspergillus niger* and *Aspergillus oryzae*. Aminogen contributes to enhanced protein absorption and reduced protein excretion when combined with protein consumption, and it helps the body naturally liberate free-form amino acids. Researchers examined the effects of Aminogen on protein metabolism in a 2-arm pilot study (N = 21). In the first arm, participants (control) consumed 50 g of whey protein concentrate (WPC) after an overnight fast. Nine days later, after a second overnight fast, participants consumed 50 g of WPC containing either 2.5 g or 5 g of Aminogen. The results indicated that Aminogen increased WPC absorption, as measured by statistically significant increases in postprandial area under the curve, total and individual serum amino acid levels, and nitrogen balance.*[7]

Preventium® (Potassium D-glucarate)
Potassium D-glucarate is a source of glucaric acid, a phytochemical produced in small amounts by the body and naturally found in fruits and vegetables, such as apples, grapefruit, Brussels sprouts, and

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broccoli.[3,8] Glucaric acid has gained attention for its potential role in cellular detoxification processes. The primary mechanism of glucaric acid is beta-glucuronidase inhibition. Beta-glucuronidase is an enzyme that separates conjugated toxicant moieties.[3] By inhibiting beta-glucuronidase, glucaric acid helps prevent toxicants from being reabsorbed and contributes to their elimination.[3] To further elucidate the roles of glucaric acid in detoxification, researchers performed an in silico efficacy analysis of glucaric acid on 4 molecular pathways involved in liver toxicity. The use of a computational systems biology platform demonstrated that glucaric acid reduced reactive oxygen species production in hepatocytes, lowered hepatic apoptosis, reduced beta-glucuronidase in hepatocytes, and decreased glucuronide deconjugate (toxins separated from conjugating glucuronide) levels in bile.[3] This in vitro work provides valuable insights for future animal and human studies to validate therapeutic uses of potassium D-glucarate. Diets low in fruits and cruciferous vegetables may result in a relative lack of glucaric acid, which would correlate with a higher level of beta-glucuronidase and possibly increase risks associated with toxicant accumulation.*[9]

Micronutrients

Each phase of toxicant biotransformation depends upon a wide variety of micronutrients.[4,5] Phase 1 CYP450 enzymes and phase 2 methylation reactions require B vitamins as enzyme cofactors.[4,5] Minerals, including selenium, copper, zinc, and manganese, and vitamins, such as A, C, and E, support antioxidant mechanisms that address the reactive oxygen species (intermediary metabolites) formed in phase 1 of biotransformation.[4,5] Other minerals, such as molybdenum, comprise enzymes (eg, molybdenum hydroxylases) that participate in phase 1 oxidation reactions.[10] Furthermore, micronutrients interact with nonessential metals, such as cadmium, lead, and mercury, at several points in the body, and individuals consuming a micronutrient-deficient diet are predisposed to toxicity from nonessential metals.[11] To promote optimal absorption and utilization of micronutrients in OptiCleanse Plus, vitamins and minerals are provided in bioactive forms. Vitamins include Quatrefolic® (5-MTHF glucosamine salt), methylcobalamin, and pyridoxal 5'-phosphate. Minerals are provided as Albion® mineral amino acid chelates, which are digestive friendly, well tolerated, and have demonstrated greater bioavailability than their mineral salt counterparts.*[12,13]

Glutathione

Glutathione is a major phase 2 conjugating constituent, wherein glutathione S-transferases attach a glutathione group to a phase 1 biotransformed metabolite to enable excretion.[4,5,14] Therefore, a reduced glutathione status directly impacts phase 2 glutathione conjugation reactions. Sulfur-containing amino acids (eg, methionine and cysteine), vitamin B6, folate, magnesium, selenium, and N-acetyl-L-cysteine (NAC) all have roles in improving glutathione synthesis and status.*[14]

Milled Golden Flaxseed

Flaxseed provides alpha-linolenic acid and fiber; it is also one of the richest sources of dietary lignans, including secoisolariciresinol diglucoside. Flaxseed provides approximately 800-fold more lignans than most other food sources.[15] Lignans are polyphenolic precursors to phytoestrogens, which are similar in structure to endogenous sex steroid hormones and, thus, may alter hormone metabolism. Secoisolariciresinol diglucoside is also thought to exert selective estrogen receptor modulator–like effects, which would result in antiestrogenic activities in a high-estrogen environment.[16] The effects of flaxseed consumption on steroid hormone levels have been studied in human trials.[17-19] In a randomized, crossover trial (N = 28), postmenopausal women consumed their habitual diets plus 0 g, 5 g, or 10 g of ground flaxseed in a series of three 7-week feeding periods with a 7- or 14-week washout period between them. Serum samples collected during the last week of each feeding period were analyzed for changes in serum hormones. Researchers determined that flaxseed-enriched diets significantly reduced serum concentrations of 17-estradiol and estrone sulfate, while slightly increasing prolactin.*[17]

No Added Sugar

OptiCleanse Plus is sweetened with monk fruit (*Siraitia grosvenorii*)—a natural sweetener approximately 200 to 300 times sweeter than sugar. Monk fruit's naturally occurring mogrosides (triterpene glycosides) impart its sweetness, and its overall phytochemical composition provides numerous health benefits, including antioxidant activity.[20] Unlike other sweeteners, monk fruit extract carries no bitter aftertaste and has zero calories at typical-use levels.*

OptiCleanse Plus provides comprehensive micro- and macronutrient support to help counteract the persistent bioaccumulative toxicants that threaten human health. It also contains significant amounts of protein/amino acids and flaxseed to support healthy hormone metabolism in postmenopausal women.*

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Antioxidant Activity

Detoxification

Female Health

Liver Support

Multivitamins & Minerals

OptiCleanse® PLUS Vanilla Delight Supplement Facts

Serving Size: 1 Packet (about 54 g)
Servings Per Container: 10

	Amount Per Serving	%DV
Calories	240	
Total Fat	10 g	13%†
Saturated Fat	3 g	15%†
Total Carbohydrate	13 g	5%†
Dietary Fiber	4 g	14%
Total Sugars	1 g	**
Protein (from pea protein isolate, rice protein concentrate, and ingredients with naturally occurring protein)	24 g	
Vitamin A (as natural beta-carotene)	1,500 mcg	167%
Vitamin C (ascorbic acid)	220 mg	244%
Vitamin E (as d-alpha tocopherol succinate)	70 mg	467%
Thiamin (as thiamine HCl)	5 mg	417%
Riboflavin (as riboflavin 5'-phosphate sodium)	2.2 mg	169%
Niacin (as niacinamide)	10 mg	63%
Vitamin B6 (as pyridoxal 5'-phosphate)	5 mg	294%
Folate (as [6S]-5-methyltetrahydrofolic acid, glucosamine salt)[S1]	340 mcg DFE	85%
Vitamin B12 (as methylcobalamin)	22 mcg	917%
Biotin	320 mcg	1,067%
Pantothenic Acid (as d-calcium pantothenate)	6 mg	120%
Calcium (as dicalcium malate[S2] and ingredients with naturally occurring calcium)	200 mg	15%
Iron (naturally occurring)	7 mg	39%
Phosphorus (as dipotassium phosphate)	120 mg	10%
Iodine (as potassium iodide)	55 mcg	37%
Magnesium (as di-magnesium malate)[S2]	140 mg	33%
Zinc (as zinc bisglycinate chelate)[S2]	12 mg	109%
Selenium (as selenium glycinate)[S2]	55 mcg	100%
Manganese (as manganese bisglycinate chelate)[S2]	1.8 mg	78%
Chromium (as chromium nicotinate glycinate chelate)[S2]	55 mcg	157%
Molybdenum (as molybdenum glycinate chelate)[S2]	150 mcg	333%
Sodium (naturally occurring)	560 mg	24%
Potassium (as dipotassium phosphate, tripotassium citrate, and ingredients with naturally occurring potassium)	860 mg	18%
Stabilized Flaxseed	9 g	**
Typical Alpha-Linolenic Acid	2.07 g	**
Typical Linoleic Acid	630 mg	**
Potassium d-glucarate[S3]	250 mg	**
N-Acetyl-L-Cysteine	55 mg	**
L-Glutathione	29 mg	**

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

Other Ingredients: High-oleic sunflower oil, natural flavors (no MSG), medium-chain triglyceride oil, cellulose gum, xanthan gum, taurine, glycine, fungal proteases,[S4] L-glutamine, guar gum, monk fruit extract, silica, and mixed tocopherols.

DIRECTIONS: Blend, shake, or briskly stir the contents of 1 packet (54 g) into 10-12 oz of chilled water and consume once daily, or use as directed by your healthcare professional. Adjust amount of water to desired taste and thickness.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional.

STORAGE: Store 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, sesame, ingredients derived from genetically modified organisms (GMOs), artificial colors, and artificial sweeteners.

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

S2. Albion® and the Albion Gold Medallion® design are registered trademarks of Balchem Corporation or its subsidiaries.

S3. Preventium® is a registered trademark of Applied Food Sciences, LLC.

AMINOGEN® S4. AMINOGEN® is a registered trademark of Innophos Nutrition, Inc.

VegaPro™ 100% VEGAN 100% GLUTEN-FREE

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Typical Amino Acid Profile Per Serving:

Alanine	1,170 mg
Arginine	2,360 mg
Aspartic Acid	3,120 mg
Cysteine	280 mg
Glutamic Acid	4,570 mg
Glycine	1,620 mg
Histidine	680 mg
Isoleucine	1,220 mg
Leucine	2,280 mg
Lysine	1,940 mg
Methionine	300 mg
Phenylalanine	1,500 mg
Proline	1,220 mg
Serine	1,440 mg
Taurine	500 mg
Threonine	1,060 mg
Tryptophan	270 mg
Tyrosine	1,040 mg
Valine	1,360 mg

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All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.

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