



fitness • nutrition • healing

Clinical Applications

- Nutritional Support for the Body's Natural Detoxification Mechanism
- Nutritional Support for Gastrointestinal Health
- Nutritional Support for the Body's Anti-Inflammatory Mechanisms

BioDetox GHI™ is a pleasant-tasting, low allergy, rice protein-based functional food providing a variety of macro- and micro-nutrients, herbs and other nutraceuticals known to support and optimize detoxification in individuals experiencing signs and conditions associated with toxicity, support the gastrointestinal mucosa and support healthy essential fatty acid and prostaglandin production

All Total Fitness® Formulas Meet or Exceed cGMP quality Standards

Discussion

Rice Protein Concentrate used in BioDetox GHI™ is fortified with the amino acids, lysine and threonine, resulting in a complete, high quality, easily-digested, 26 gram portion of vegetable protein. Among the many reasons for including high quality protein is the provision of amino acids such as methionine and cysteine used to generate glutathione and sulfation cofactors needed for Phase 2 conjugation.

The chart below, a brief summation of research, supports key nutrients included in the formula for Hepatic/Detoxification support.

Research Findings	
Inhibitors of Phase I Metabolic Pathways of the Liver	
Ellagic Acid	<p>“...ellagic acid inhibits the cytochrome P4501A1-dependent activation of polycyclic aromatic hydrocarbon carcinogens, binds to and detoxifies... benzo(a)pyrene... and binds to DNA preventing the formation of O6-methylguanine adducts by methylating carcinogens.”</p> <p>“...total P450 content decreased by up to 25%...”</p> <p style="text-align: right;">Carcinogenesis; 1994, Vol 15</p>
Watercress	<p>“Watercress may have exceptionally good anticarcinogenic potential, as it combines a potent inhibitor of phase I enzymes (PEITC) with at least three inducers of phase II enzymes (PEITC, 7-methylsulfinylheptyl ITC and 8-methylsulfinyloctyl ITC.”</p> <p style="text-align: right;">Carcinogenesis; 2000, Vol.21</p>
Green Tea Catechins (EGCG)	<p>“Green tea exhibits...reduced carcinogen activation and formation as well as increased carcinogen detoxification and DNA binding...”</p> <p style="text-align: right;">Nutrition; 2000 Jul-Aug;16</p>

Total Fitness
 1951 Northside Drive
 Atlanta, GA 30318

BioDetox GHI™



Upregulation of Phase II Metabolic Pathways of the Liver

Glutathione Conjugation

NAC
Ellagic Acid
Watercress

“As a source of SH groups, NAC can stimulate GSH synthesis, enhance glutathione-S-transferase activity, promote detoxification, and act directly on reactive oxidant radicals.”
Altern Med Rev. 1998 Apr;3(2)

Sulfation

Sodium Sulfate
MSM
Alpha Lipoic Acid

“...the extent of sulfate conjugate formation and the metabolic clearance of drugs subject to conjugation with sulfate depend therefore on the dose, the dosage form, the route of administration, and the rate and duration of administration as well as on the pharmacokinetic parameters of competing processes.”
Fed Proc. 1986 Jul;45(8)

Amino Acid Conjugation

Glycine
Folic Acid & Calcium
folinate
Methylcobalamin
Pyridoxal 5' phosphate

“Low dietary intake of lipotropes, choline, methionine, glycine, folate, vitamin B12, B6, polyunsaturated fatty acids and phosphates, which are essential for microsomal metabolism detoxication of xenobiotic chemicals, is associated with carcinogenesis.”
Indian J Exp Biol. 1999 Feb;37(2)

Glucuronidation

Preventium® (Potassium D-glucarate)

“the potent beta-glucuronidase inhibitor D-glucaro-1,4-lactone (1,4-GL) ... increases detoxification of carcinogens and tumor promoters / progressors by inhibiting beta-glucuronidase and preventing hydrolysis of their glucuronides. ... its precursors, such as potassium hydrogen D-glucarate and calcium D-glucarate, may exert their anticancer action, in part, through alterations in steroidogenesis..”
Cancer Detect Prev. 1997;21(2)

Acetylation

D-Calcium pantothenate
Magnesium
Vitamin B6

“Acetylation requires pantothenic acid to function. It is the chief degradation pathway for compounds containing aromatic amines such as histamine, serotonin, PABA, P-amino salicylic acid, aniline and procaine amide. It is also a pathway for sulphur amides, aliphatic amines and complex hydrazines.”
Modern Nutrition in Health and Disease; 1999, 9th Ed

Methylation

Folate
Vitamin B12

“Folate deficiency also is associated with increased carcinogenesis, an effect that may be mediated through participation in methylation...”
Am J Clin Nutr. 1995 Mar;61





Gastrointestinal & Anti-Inflammatory Support

L-Glutamine is preferentially used by the intestine as an energy source and contributes to the integrity of the enterocytes. In catabolic states supplementation preserves intestinal mucosal structure and function, decreases bacterial translocation, and supports normal immunologic responses. L-glutamine also helps to regulate acidbase balance.^{1,2}

Ginger Root Powder has historically been used as an anti-emetic and anti-inflammatory.^{3,4} It promotes the release of bile from the gallbladder.⁵

Taurine gets conjugated with bile acids to form bile salts.

Curcumin inhibits the synthesis of inflammatory cytokines and acts as an antioxidant.⁶

The variety of bioflavonoids, vitamins C and E and green tea extract also contribute to the antioxidant potential important for both gastrointestinal, hepatic and anti-inflammatory support.

Please see next page for Supplement Facts and Dosing.

References

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Additional References Available Upon Request

Cautions:

There is insufficient data concerning the use of BioDetox GHI™ during pregnancy or lactation, or by children. Individuals on medications will need close supervision due to enhanced detoxification.

*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.



Dosing:

Please see Patient Guide for Step Approach and Modified Elimination Diet Plan. A full serving is 2 scoops mixed in filtered water or other low glycemic “Allowed” beverage. “Allowed” fruits and crushed ice may also be used to make a smoothie.

**Please see OptiCleanse Plus DRS for Modified Elimination Plan as an example of a plan that may be used under supervision in conjunction with this formula.

BioDetox GHI™ Original Flavor

Supplement Facts					
Serving Size: 2 Scoops (60 g) Servings Per Container: 14					
Amount Per Serving		Calories from Fat 20			
Amount Per Serving		%Daily Value*			
Total Fat	2.5 g		4%		
Saturated Fat	0 g		0%		
Trans Fat	0 g				
Polyunsaturated Fat	1 g				
Cholesterol	0 mg		0%		
Sodium	135 mg		6%		
Potassium	540 mg		15%		
Total Carbohydrates	21 g		7%		
Dietary Fiber	3 g		12%		
Soluble Fiber	1 g				
Sugars	7 g				
Protein	26 g		52%		
Vitamin A (as mixed carotenoids)	2500 IU	50%	Calcium† (as di-calcium malate)	300 mg	30%
Vitamin C (as sodium ascorbate)	250 mg	417%	Phosphorus (as potassium phosphate)	200 mg	20%
Vitamin D (as cholecalciferol)	100 IU	25%	Iodine (as potassium iodide)	60 mcg	40%
Vitamin E (as d-alpha tocopherol)	125 IU	417%	Magnesium† (as di-magnesium malate)	250 mg	63%
Thiamin (as thiamin HCl)	15 mg	1000%	Zinc† (as bis-glycinate chelate)	10 mg	67%
Riboflavin (as riboflavin 5' phosphate)	5 mg	294%	Selenium† (as selenium glycinate complex)	100 mcg	143%
Niacin (as niacinamide and niacin)	40 mg	200%	Manganese†	2 mg	100%
Vitamin B6 (as pyridoxal 5' phosphate)	5 mg	250%	(as manganese bis-glycinate chelate)		
Folic Acid (as folic acid and calcium folinate)	400 mcg	100%	Chromium† (as chromium nicotinate-glycinate chelate)	60 mcg	50%
Vitamin B12 (as methylcobalamin)	50 mcg	833%	Molybdenum†	35 mcg	47%
Biotin	150 mcg	50%	(as molybdenum bis-glycinate chelate)		
Pantothenic Acid (as d-calcium pantothenate)	35 mg	350%			
Lignamax™ (stabilized flaxseed complex)	3 g	**	Ginger Root Powder	150 mg	**
L-Glycine	1500 mg	**	Methylsulfonylmethane	120 mg	**
Lysine	500 mg	**	Alpha Lipoic Acid	100 mg	**
Betaine (as trimethylglycine)	250 mg	**	Sodium Sulfate	100 mg	**
L-Glutamine	1200 mg	**	Watercress Herb Powder	100 mg	**
Lemon Bioflavonoids	250 mg	**	Ellagic Acid (as pomegranate extract)	100 mg	**
Quercetin	250 mg	**	Choline (as choline bitartrate)	100 mg	**
Rutin	200 mg	**	Green Tea Extract (40% catechins)	82 mg	**
Curcumin	200 mg	**	Preventum® (as potassium d-glucarate)	250 mg	**
Taurine	175 mg	**	Aminogen®	300 mg	**
N-Acetyl-Cysteine	150 mg	**	L-Threonine	35 mg	**

* Percent Daily Values are based on a 2,000 calorie diet.
** Daily Value not established.
Other Ingredients: Rice Protein Concentrate, Brown Rice Syrup Solids, Natural Flavors, Guar Gum, Xanthan Gum, Soolite™.

