

# Metabolic Recovery Formula



HormoneSynergy™  
Nutraceuticals

## Clinical Applications

- Supports Natural Detoxification Mechanisms\*
- Supports Gastrointestinal Health\*
- Supports a Balanced Cytokine Profile\*
- Lactose-Free Vegan Protein\*

*Metabolic Recovery Formula is a comprehensive, fructose-free, low-allergy-potential dietary supplement designed to support gastrointestinal (GI) function and balanced detoxification. It features Vegan Protein Blend, Hormone Synergy™ Nutraceuticals' proprietary amino acid and pea/rice protein blend; Aminogen®, to facilitate protein absorption; phytonutrients; mineral amino acid chelates; and activated B vitamins, including Quatrefolic®† and methylcobalamin. In conjunction with a modified elimination diet, Metabolic Recovery Formula addresses GI and hepatic function as well as eicosanoid balance and cytokine metabolism. This formula is suitable for vegans.\**

All Hormone Synergy™ Nutraceuticals Formulas Meet or Exceed cGMP Quality Standards

## Discussion

**Metabolic Recovery Formula** contains macro- and micronutrients, as well as a host of ingredients (some patented or proprietary) that support fatty acid metabolism, gastrointestinal health, and healthy eicosanoid and cytokine metabolism. Activated cofactors support mitochondrial energy production needed for biotransformation and detoxification. This formula's ingredients help moderate phase I detoxification, upregulate and support phase II pathways, and provide antioxidant support as well.\*

### Protein Metabolism

Vegan Protein Blend is Hormone Synergy™ Nutraceuticals' proprietary blend of pea protein isolate and rice protein concentrate, L-glutamine, glycine, and taurine. Generation of glutathione and sulfation cofactors—vital for phase II conjugation—requires an array of amino acids. The combination of pea protein and rice protein, containing a complement of amino acids, achieves an amino acid score of 100%. Glutamine, a conditionally essential and versatile amino acid with two nitrogen moieties, is crucial to nitrogen metabolism and helps maintain healthy liver tissue and function.<sup>[1,2]</sup> The amino acid glycine is needed for bile synthesis, phase II detoxification, and glutathione production. Taurine, a derivative of the sulfur-containing amino acid cysteine, is also important for synthesis of bile salts and helps stabilize cell membranes.\*

### Gastrointestinal Support

**Ginger root**, included to support healthy digestion including the release of bile from the gallbladder, acts at several sites to moderate PGE(2) production and support the normal response to inflammation.<sup>[3]</sup> Fiber (from inulin and flaxseeds) supports production of short-chain fatty acids as well as a healthy intestinal flora. **MeadowPure™**, an organic flaxseed complex, possesses excellent oxidative stability, supports antioxidant activity, and provides lignins, soluble fiber, and omega-3 and omega-6 essential fatty acids.<sup>[4]</sup> **Glutamine** plays a key role in healthy intestinal cell proliferation and gut barrier integrity, immune function, and normal tissue healing.<sup>\*[1,2]</sup>

### Detoxification Support

**Ellagic acid** (from pomegranate extract) prevents over-induction of CYP1A enzymes, works at the gene level to induce synthesis of glutathione-S-transferases and other phase II activities, binds directly to toxins, and protects DNA and hepatocytes.<sup>[5,6]</sup> **Watercress** is a rich source of beta-phenylethyl isothiocyanate (PEITC)—a versatile compound found to inhibit phase I enzymes and induce the phase II enzymes associated with biotransformation and excretion of toxins. Watercress was found to contain even stronger phase II inducers known as 7-methylsulfinylheptyl and 8-methylsulfinyloctyl isothiocyanates as well.<sup>[7,8]</sup> **Green tea catechins** not only support antioxidant activity but also appear to act as modulators of phase I and phase II detoxification.<sup>[9]</sup> **Choline** is present to support lipid metabolism in the liver and can be converted to betaine, a methyl donor.<sup>\*[10]</sup>

The active, bioavailable form of **B vitamins** (pyridoxal-5'-phosphate (B6), 5-methyltetrahydrofolate (folate), methylcobalamin (B12)) and glycine all support amino acid conjugation and are vital for the detoxification of xenobiotics and xenoestrogens. 5-methyltetrahydrofolate (5-MTHF), methylcobalamin, betaine, and **methylsulfonylmethane** (MSM) are present to support methylation and detoxification. 5-MTHF supports healthy folate nutrition, especially in those with variations in folate metabolism. In Metabolic Recovery Formula, 5-MTHF is provided as Quatrefolic® for enhanced stability, solubility, and bioavailability.<sup>\*[11]</sup>

**Preventium®**, a patented form of potassium hydrogen d-glucarate, supports glucuronidation. Sulfation is supported by **MSM** and **sodium sulfate**. Acetylation is supported by **d-calcium pantothenate**, pyridoxal-5'-phosphate, and magnesium. Several minerals in Metabolic Recovery Formula are provided as Albion® mineral chelates and TRAACS® mineral amino acid chelates for enhanced gastrointestinal absorption and bioavailability.<sup>\*[12]</sup>

### Antioxidant Support and Cytokine Balance

**Bioflavonoids, quercetin, rutin, and curcumin** support antioxidant activity, counter free radicals, and support healthy eicosanoid and cytokine metabolism.<sup>[13,14]</sup> Curcumin has a long history of use for its support of a normal, healthy response to inflammation.<sup>[15]</sup> **N-acetyl-cysteine (NAC)** stimulates glutathione synthesis, enhances glutathione-S-transferase activity, and promotes detoxification.<sup>[16]</sup> **Selenium glycinate** provides support for glutathione metabolism and antioxidant protection.\*

Metabolic Recovery Formula provides an array of nutrients that supports gastrointestinal health; detoxification and antioxidant mechanisms; and a normal, healthy response to inflammation and cytokine balance. This formula is designed to be used as part of a step-approach cleanse in conjunction with a modified elimination plan.\*

**\*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.**

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Portland, OR

Metabolic Recovery Formula



# Supplement Facts

Serving Size: 2 Scoops (about 58 g)  
Servings Per Container: About 14

Amount Per Serving	%Daily Value*	Amount Per Serving	%Daily Value*
<b>Calories</b> 240		Molybdenum (as TRAACS® molybdenum glycinate chelate)	35 mcg 47%
Calories from Fat 70		Sodium (naturally occurring)	490 mg 20%
<b>Total Fat</b> 8 g	12%	Potassium (naturally occurring)	510 mg 15%
Saturated Fat 2.5 g	13%	MeadowPure® Stabilized Flaxseed Complex	5.6 g **
<b>Total Carbohydrate</b> 16 g	5%	Alpha-Linolenic Acid	1.28 g **
Dietary Fiber 3 g	12%	Linoleic Acid	392 mg **
Sugars 6 g	**	Pomegranate Extract ( <i>Punica granatum</i> )(hull)(40% ellagic acid)	400 mg **
<b>Protein</b> 26 g	52%	Betaine Anhydrous (trimethylglycine)	250 mg **
Vitamin A (as natural beta-carotene)	2500 IU 50%	Lemon Bioflavonoid Complex ( <i>Citrus x limon</i> ) (fruit peel)(25% bioflavonoids)	250 mg **
Vitamin C (as sodium ascorbate)	250 mg 417%	Quercetin (as quercetin dihydrate from <i>Dimorphandra mollis</i> )(pod)	250 mg **
Thiamin (as thiamine HCl)	15 mg 1000%	Preventum® (potassium d-glucarate)	250 mg **
Riboflavin (as riboflavin 5'-phosphate sodium)	5 mg 294%	Rutin (from <i>Sophora japonica</i> )(bud)	200 mg **
Niacin (as niacinamide and niacin)	40 mg 200%	Turmeric Extract ( <i>Curcuma longa</i> )(rhizome) (95% curcuminoids)	200 mg **
Vitamin B6 (as pyridoxal 5'-phosphate)	5 mg 250%	N-Acetyl-L-Cysteine	150 mg **
Folate (as Quatrefolic® (6S)-5-methyltetrahydrofolate acid, glucosamine salt)	200 mcg 50%	Ginger ( <i>Zingiber officinale</i> )(rhizome)	150 mg **
Vitamin B12 (as methylcobalamin)	50 mcg 833%	Methylsulfonylmethane (MSM)	120 mg **
Biotin	150 mcg 50%	Choline (as choline bitartrate)	100 mg **
Pantothenic Acid (as d-calcium pantothenate)	35 mg 350%	Sodium Sulfate Anhydrous	100 mg **
Calcium (as DimaCal® di-calcium malate and ingredients with naturally occurring calcium)	240 mg 24%	Watercress ( <i>Nasturtium officinale</i> )(herb)	100 mg **
Iron (naturally occurring)	7 mg 38%	Green Tea Aqueous Extract ( <i>Camellia sinensis</i> )(leaf) (80% polyphenols, 60% catechins, 30% EGCG, 6% caffeine)	82 mg **
Iodine (as potassium iodide)	60 mcg 40%		
Magnesium (as Albion® di-magnesium malate)	140 mg 35%		
Zinc (as TRAACS® zinc bisglycinate chelate)	10 mg 67%		
Selenium (as Albion® selenium glycinate complex)	100 mcg 143%		
Manganese (as TRAACS® manganese bisglycinate chelate)	2 mg 100%		
Chromium (as TRAACS® chromium nicotinate glycinate chelate)	60 mcg 50%		

**Other Ingredients:** Vegan Protein Blend (Hormone Synergy™ Nutraceuticals' proprietary blend of pea protein concentrate, pea protein isolate, taurine, glycine, rice protein concentrate, and L-glutamine), dried cane syrup, sunflower oil, natural flavors (no MSG), medium-chain triglyceride oil, tripotassium citrate, cellulose gum, xanthan gum, Aminogen®, stevia leaf extract, guar gum, and silica.

 Albion, DimaCal, TRAACS and the Albion Medallion design are registered trademarks of Albion Laboratories, Inc. Malates covered by US patent 6,706,904.

Preventum® is a registered trademark of Applied Food Sciences, LLC. (US patents 4,845,123, 5,364,644, 5,561,160).

 AMINOGEN® is a registered trademark of Triarco Industries. AMINOGEN® is protected under U.S. patent 5,387,422.

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

## Directions

Blend, shake, or briskly stir 2 level scoops (58 g) into 10-12 ounces chilled, pure water (or mix amount for desired thickness) and consume once daily, or use as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged. The labeling on this product does not comply with California's Proposition 65. Therefore, this product may not be sold in California.

## Does Not Contain

Wheat, gluten, yeast, soy, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

### Typical Amino Acid Profile Per Serving:

Alanine	1,129 mg	Methionine	279 mg
Arginine	2,260 mg	Phenylalanine	1,432 mg
Aspartic Acid	3,049 mg	Proline	1,141 mg
Cysteine	248 mg	Serine	1,404 mg
Glutamic Acid	4,450 mg	Threonine	981 mg
Glycine	1,578 mg	Taurine	500 mg
Histidine	652 mg	Tryptophan	258 mg
Isoleucine	1,214 mg	Tyrosine	1,005 mg
Leucine	2,208 mg	Valine	1,317 mg
Lysine	1,910 mg		

## References

- Smith RJ, Wilmore DW. Glutamine nutrition and requirements. *JPEN J Parenter Enteral Nutr.* 1990 Jul-Aug;14(4 Suppl):94S-99S. Review. [PMID: 2119461]
- Lacey JM, Wilmore DW. Is glutamine a conditionally essential amino acid? *Nutr Rev.* 1990 Aug;48(8):297-309. Review. [PMID: 2080048]
- Lantz RC, Chen GJ, Sarihan M, et al. The effect of extracts from ginger rhizome on inflammatory mediator production. *Phytomedicine.* 2007 Feb;14(2-3):123-28. [PMID: 16709450]
- Adolph JL, Whiting SJ, Juurlink BH, Thorpe LU, Alcorn J. Health effects with consumption of the flax lignan secoisolariciresinol diglucoside. *Br J Nutr.* 2010 Apr;103(7):929-38. Review. [PMID: 20003621]
- Barch DH, Rundhaugen LM, Stoner GD, et al. Structure-function relationships of the dietary anticarcinogen ellagic acid. *Carcinogenesis.* 1996 Feb;17(2):265-9. [PMID: 8625448]
- Girish C, Koner BC, Jayanthi S, et al. Hepatoprotective activity of picroliv, curcumin and ellagic acid compared to silymarin on paracetamol induced liver toxicity in mice. *Fundam Clin Pharmacol.* 2009 Dec;23(6):735-45. [PMID: 19656205]
- Rose P, Faulkner K, Williamson G, et al. 7-Methylsulfinylheptyl and 8-methylsulfinyloctyl isothiocyanates from watercress are potent inducers of phase II enzymes. *Carcinogenesis.* 2000 Nov;21(11):1983-8. [PMID: 11062158]
- Hofmann T, Kuhnert A, Schubert A, et al. Modulation of detoxification enzymes by watercress: in vitro and in vivo investigations in human peripheral blood cells. *Eur J Nutr.* 2009 Dec;48(8):483-91. [PMID: 19636603]
- Akhlaghi M, Bandy B. Dietary green tea extract increases phase 2 enzyme activities in protecting against myocardial ischemia-reperfusion. *Nutr Res.* 2010 Jan;30(1):32-39. [PMID: 20116658]
- Linus Pauling Institute. <http://lpi.oregonstate.edu/infocenter/othernuts/choline/>. Accessed May 8, 2012.
- Quatrefolic. <http://www.quatrefolic.com/>. Accessed May 8, 2012.
- Albion. <http://www.albionminerals.com/>. Accessed May 8, 2012.
- Garg R, Gupta S, Maru GB. Dietary curcumin modulates transcriptional regulators of phase I and phase II enzymes in benzo[a]pyrene-treated mice: mechanism of its anti-initiating action. *Carcinogenesis.* 2008 May;29(5):1022-32. [PMID: 18321868]
- Amália PM, Possa MN, Augusto MC, et al. Quercetin prevents oxidative stress in cirrhotic rats. *Dig Dis Sci.* 2007 Oct;52(10):2616-21. [PMID: 17431769]
- Jurenka JS. Anti-inflammatory properties of curcumin, a major constituent of *Curcuma longa*: a review of preclinical and clinical research. *Altern Med Rev.* 2009 Jun;14(2):141-53. Review. Erratum in: *Altern Med Rev.* 2009 Sep;14(3):277. [PMID: 19594223]
- Kelly GS. Clinical applications of N-acetylcysteine. *Altern Med Rev.* 1998 Apr;3(2):114-27. Review. [PMID: 9577247]

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