

LIVER LOVE



Clinical Applications

- Provides Micronutrients, Phytonutrients, and Cofactors that Support Detoxification of Xenobiotics and Xenoestrogens*
- Supports Healthy Estrogen Metabolism*
- Supports Antioxidant Mechanism and Glutathione Production*

*Liver Love is a comprehensive formula designed to support phase I and phase II liver detoxification of environmental pollutants, endocrine disruptors, estrogen metabolites, xenoestrogens, and other toxins. Liver Love also supports antioxidant activity throughout the detoxification process. Micronutrients, phytonutrients, and activated cofactors provide additional support for energy production, cellular protection, and liver function during crucial metabolic biotransformation processes.**

All MSW Nutrition Formulas Meet or Exceed cGMP Quality Standards

Discussion

Xenobiotics (chemicals foreign to a living organism) have the potential to disrupt metabolism and negatively affect cellular health.^[1-3] Classes of xenobiotics include pesticides, petroleum-based plastic compounds, industrial chemicals, and xenoestrogens. Liver Love comprises an array of compounds to support detoxification and elimination of these potentially toxic molecules. Man-made xenoestrogens (including BPA, DDT, and DES), act as endocrine disruptors and can alter hormonal function in sensitive tissues including breast, uterus, cervix, and prostate.^[4,5] Xenoestrogens at very low levels are believed to disrupt neurotransmitter balance, glucose homeostasis, normal reproduction, and healthy metabolism.^[5] Detoxification of xenobiotics is a complex process that requires micronutrients, phytonutrients, energy, and adequate antioxidant support for safe and effective completion.^[6]

Antioxidant and Detoxification Support Several nutrients support antioxidant activity, both phases of detoxification, and the health and function of the liver (the major site of detoxification). **Milk thistle extract** contains silymarin, a compound found to limit the entry of hepatotoxins, donate sulfhydryl groups for detoxification, and increase hepatic glutathione by over 35%.^[7] Its action in the liver reduces fat peroxidation and fibrous tissue formation, supports a normal immune and inflammatory response, promotes protein synthesis and tissue regeneration, and supports glucuronidation and glutathione levels.^[8] **Alpha-lipoic acid** is both water- and fat-soluble. It supports glutathione metabolism, helps regenerate antioxidant vitamins C and E, and helps maintain the ratio of reduced-to-oxidized CoQ10 in mitochondria.^[7] The redox couple of lipoic acid and dihydrolipoic acid stabilizes NF-kappaB transcription and may help support healthy immune functions in the body.^[9,10] **Methylselenocysteine (MSC)** is considered a well-tolerated form of the trace element selenium and may support normal cell-life regulation.^[11] Selenium provides antioxidant support via glutathione peroxidase and manganese superoxide dismutase (MnSOD) activity.^[12] **N-acetyl-cysteine (NAC)** may significantly increase glutathione in the body, which, in turn, is incorporated into crucial antioxidant and detoxification enzymes. Glutathione supports antioxidant activity, phase II detoxification, and the normal breakdown of metabolites, toxins, and other compounds. NAC supports phase II sulfation reactions as well.^[7] **Calcium D-glucarate** has been added to support glucuronidation. **5-methyltetrahydrofolate (5-MTHF)** is present as Quatrefolic® (a stable, bioavailable form of folate) to support methylation, energy generation, and phase I and phase II activity.*

Phytonutrients A variety of phytonutrients support antioxidant activity in the body. **Green tea catechins** have been found to assist in free-radical scavenging, support detoxification through modification of phase I and phase II enzymes, and support normal cell-life regulation via multiple signaling pathways.^[13,14] Bioflavonoids, including **resveratrol**, **quercetin**, and the highly absorbable FlavitPURE™ form of **dihydroquercetin (DHQ)**, support phase I detoxification as well as intermediary antioxidant protection.^[11] **Pterostilbene**, a highly absorbable, methylated form of resveratrol, is thought to work together with quercetin in supporting normal cell-life regulation.^[15] Turmeric extract provides curcumin, a phytonutrient valued for its promotion of antioxidant activity, support of metabolic detoxification, and modulation of cytokine production.^[16,17] BioPerine®, a patented form of piperine from **black pepper**, has been added to enhance the absorption of nutrients, particularly curcumin.*^[18]

Xenoestrogen Metabolism Liver Love provides **diindolymethane (DIM)** and **glucoraphanin** as SGS™. DIM promotes healthy estrogen metabolism and creates a better balance of estrogen metabolites (2-OH, 4-OH, 16-alpha-OH) through phase I cytochrome P450 enzyme induction and promotion of 2-hydroxylation.^[19,20] The action of DIM is complemented by glucoraphanin, which supports long-term antioxidant activity and phase II detoxification of less-desirable estrogen metabolites and xenoestrogens.^[21,22] Glucoraphanin and its metabolite sulforaphane are found to be effective, long-acting, indirect antioxidants and significant inducers of phase II detoxification enzymes.^[23,24] These actions may help support healthy estrogen balance and may be crucial for the health of estrogen-sensitive tissue.*

***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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3930 Bee Caves RD, STE F
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512-356-9144

LIVER LOVE



Supplement Facts

Serving Size: 2 Capsules
Servings Per Container: 60

	Amount Per Serving	%DV
Folate (as Quatrefolic® (6S)-5-methyltetrahydrofolic acid, glucosamine salt)	200 mcg DFE	50%
Calcium (as tricalcium phosphate and calcium d-glucarate tetrahydrate)	75 mg	6%
Selenium (as methylselenocysteine)	15 mcg	27%
Calcium D-Glucarate Tetrahydrate	250 mg	**
Green Tea Aqueous Extract (<i>Camellia sinensis</i>)(leaf) (80% polyphenols, 60% catechins, 30% EGCG, 6% caffeine)	250 mg	**
Alpha-Lipoic Acid	100 mg	**
N-Acetyl-L-Cysteine	100 mg	**
Milk Thistle Extract (<i>Silybum marianum</i>)(seed)(30% silybins)	100 mg	**
DIM (diindolylmethane)	75 mg	**
Quercetin (as quercetin dihydrate)(from <i>Sophora japonica</i>)(bud)	50 mg	**
Turmeric Extract (<i>Curcuma longa</i>)(rhizome)(95% curcuminoids)	50 mg	**
trans-Resveratrol (as <i>Polygonum cuspidatum</i> root extract)	18.5 mg	**
pTeroPure® trans-Pterostilbene	15.5 mg	**
truebroc® Glucoraphanin (from broccoli extract)(<i>Brassica oleracea italica</i>)(seed)	15 mg	**
Dihydroquercetin	5 mg	**
BioPerine® Black Pepper Extract (<i>Piper nigrum</i>)(fruit)	5 mg	**

** Daily Value (DV) not established.

Other Ingredients: HPMC (capsule), stearic acid, magnesium stearate, and silica.



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



Produced under US patent 6,521,818 licensed from Brassica Protection Products LLC; truebroc is a registered trademark of Brassica Protection Products LLC.

pTeroPure is a trademark of ChromaDex, Inc.

BioPerine is a registered trademark of Sabinsa Corp. BioPerine is protected by US patents 5,536,506; 5,744,161; 5,972,382; and 6,054,585.

Directions

Take two capsules daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

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Formulated To Exclude

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

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REV. 03/02/21

MITOCHONDRIAC



Clinical Applications

- Methylation helps improve absorption and stability*
- Powerful Antioxidant Support*
- Supports Healthy Cellular Function*
- Produces Changes Associated with Longer Lifespan (including activation of sirtuins)*
- Supports Cardiovascular/Neurological Health*

*Mitochondriac provides a complete bioflavonoid complex with resveratrol, quercetin, and pterostilbene. These three antioxidants work together synergistically. Pterostilbene, a new focus of scientific research, is methylated resveratrol, a bio-optimized form that complements resveratrol and quercetin. These compounds are being extensively studied in the areas of cardiovascular health and aging.**

All Mendoza Sports & Wellness Formulas Meet or Exceed cGMP Quality Standards

Discussion

Resveratrol (RES) (3,5,4'-trihydroxystilbene) is a stilbenol derived from stilbene, a natural plant product. RES is found in varying amounts in grapes, various berries, plums, peanuts (and pines). Oral resveratrol is rapidly metabolized via sulfate conjugation by the intestine/liver.^[1] The methyl capping of all free hydroxyl groups (as in Pterostilbene) results in dramatically higher hepatic metabolic stability, intestinal absorption and membrane transport compared to unmethylated RES.^[2,3] Quercetin, pterostilbene and resveratrol are synergistic antioxidants, with quercetin seemingly aiding in the absorption of resveratrol.*^[4]

Stilbenols are polyphenolic compounds that have cell-protecting properties.^[5] For RES, this action has mostly been linked to growth and death regulatory pathways. Research published in 2008 also demonstrated RES's contribution to the maintenance of genome stability. Pterostilbene and quercetin, structurally-related and naturally-occurring, small polyphenols, show longer half-life in vivo than unmethylated resveratrol and have been shown to work synergistically to protect cellular health.*^[6]

As exciting as its role in chemoprotection, is resveratrol's ability to produce changes associated with longevity. These include increased insulin sensitivity, reduced IGF-1, increased AMP-activated protein kinase and peroxisome proliferator-activated receptor-gamma coactivator 1 alpha activity, increased mitochondrial number and improved motor function. RES opposed the effects of the high calorie diet in 144 of 153 significantly altered gene pathways.^[7] RES activates sirtuins including SIR2, a special longevity cellular^[8] and SIRT1 that helps protect nerve cells.*^[9]

In vitro, ex vivo and animal experiments have shown that the attributes of RES such as its powerful antioxidant activity, modulation of hepatic apolipoprotein and lipid synthesis, inhibition of platelet aggregation, and inhibition of human platelet and neutrophil production of proatherogenic eicosanoids favor protection against atherosclerosis.*^[10]

Resveratrol's numerous anti-inflammatory properties may explain why it has so many far-reaching health benefits. It inhibits synthesis and release of pro-inflammatory mediators, modifies eicosanoid synthesis, and inhibits activated immune cells. By inhibiting either NF-(kappa)B or the activator protein-1 (AP-1), resveratrol also appears to inhibit inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2).^[11] Specific human dosing to support a healthy inflammatory response has not yet been established.*^[12]

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 @mswnutrition

MITOCHONDRIAC



Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Quercetin (as quercetin dihydrate)(from <i>Sophora japonica</i>)(bud)	250 mg	**
trans-Resveratrol (as <i>Polygonum cuspidatum</i> root extract)	75 mg	**
trans-Pterostilbene ^{S1}	62.5 mg	**

** Daily Value not established.

Other Ingredients: HPMC (capsule), microcrystalline cellulose, stearic acid, magnesium stearate, silica, and medium-chain triglyceride oil.

PterPure[®] S1. Pterpure[®] is a registered trademark of ChromaDex, Inc.



Directions

Take one capsule twice daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

Storage:

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

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Formulated To Exclude

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

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**Mendoza Sports & Wellness
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DRS-174
REV. 10/14/22



Clinical Applications

- Promotes Energy Production and Stamina*
- Supports the Body's Adaptogenic Response*
- Supports the Body's Response to Stress*
- Promotes Adrenal Physiological Functions*

*Zen features a comprehensive blend of nutrients and botanical extracts targeted to supporting the body's adaptogenic response to promote optimal energy production, stamina, and the management of everyday stressors. Adrenal glandular tissue, sourced from Argentinian bovine to safeguard purity, rounds out the ingredient profile.**

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Discussion

Cortisol is one of the main stress-mediating glucocorticoid hormones produced by the adrenal gland. It acts to maintain blood glucose levels necessary for normal brain and physical functions. Typically, cortisol levels spike in the morning and gradually decrease throughout the day. When the body is under stress, cortisol production increases. With prolonged increased levels of cortisol, the body produces more glucose leading to an increase in risk for depressed immune function, increased production of cytokines, insulin resistance, weight gain, and other potentially chronic conditions. Eventually, the adrenal production of cortisol weakens resulting in "adrenal fatigue," which causes feelings of tiredness, mild depression, and general malaise. Zen is formulated to support individuals who present with cortisol levels that are low throughout the day and are sometimes referred to as being in the "burnout" or "flat-line" stage of adrenal fatigue.*

Vitamin C

The release of adrenocorticotropic hormone (ACTH) from the pituitary gland in tandem with the body's physiological response to stress will deplete the relatively large amount of vitamin C typically stored in the adrenal cortex.^[1,2] This vitamin is essential for the synthesis of epinephrine, the hormone secreted by the adrenal medulla in response to stress. Epinephrine, in turn, plays a role in the synthesis of aldosterone, the hormone that regulates blood pressure, volume, and pH.*

Vitamin B6, Pantothenic Acid

Vitamin B6, acting as a coenzyme, has a role in the conversion of muscle glycogen to glucose, which is needed for a proper response to stressors, the synthesis of serotonin, and the support of the immune function.^[3] Physiologically, vitamin B6 influences the adrenal glucocorticoid receptor, stimulates the secretion of adrenal catecholamines, and aids in sodium and potassium balance.^[2] Pantothenic acid is essential to the adrenal glands for the production of glucocorticoids. It forms pantothenic acid in the body, which then converts to coenzyme-A—the most active metabolic enzyme in the human body needed to produce cellular energy.^[4] Pantothenic acid plays a critical role in the utilization of fats and carbohydrates in energy production and in the manufacture of adrenal hormones and red blood cells.^[5]

Asian Ginseng (Panax)

As an important herbal remedy in traditional Chinese medicine, Panax ginseng has been used for thousands of years, primarily for energy production. The main active agents have been identified as ginsenosides, and they are the focus of much published research.^[6] Experimental models show that ginseng and ginsenosides have beneficial effects in supporting the adrenal glands; protecting the gastric mucosa; and supporting healthy body weight, blood hormones, and the gene expression of catecholamine-synthesizing enzymes.^[6-10] Ginsenosides also have immune-supporting and cytokine-modulating activities.^[7,11]

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Eleuthero

In the 1950s, Russian researchers investigated the properties of eleuthero and discovered that it had “adaptogenic” activity. An adaptogen refers to a substance that supports the body’s ability to adapt and promote healthy physiological functioning, most notably in relation to stress. This balancing effect has been evaluated in numerous human clinical trials that demonstrate the ability of eleuthero to increase stamina, mental alertness, and the capability of the participants to handle stress.*^[12,19]

Rhodiola

This adaptogenic herb has been used traditionally in Eastern Europe and Asia for centuries to increase stamina, maintain a healthy mood, support the nervous and immune systems, and maintain healthy male sexual function.^[13,14] According to Panossian et al, experimental studies performed on isolated organs, tissues, cells, and enzymes demonstrated that rhodiola preparations exhibit adaptogenic effects that support nerve, brain, and heart health and instill calm, enhance longevity, and stimulate the nervous system.^[14] Rhodiola may also have a positive effect on brain neurotransmitters, such as dopamine and serotonin, and may influence endogenous opioid levels.^[13] According to a review of the literature on rhodiola, supplementation supports healthy work performance, quality of sleep, appetite, and energy levels subsequent to intense physical or intellectual strain. Salidroside and rosavin have been identified as primary actives. The rhodiola extract in Zen is standardized to provide no less than 1% salidroside and 3% rosavin.*

Schisandra

Schisandra has been widely studied for its effect on helping the body adapt to psychological and physical stressors. It has been suggested that schisandra affects the basal levels of nitric oxide and cortisol, which promote endurance and accuracy of movement, mental performance, and working capacity.*^[15,16]

Schisandra is commonly used in combination with other adaptogens. In a double-blind placebo-controlled trial with rhodiola and eleuthero, improvement in attention as well as speed and accuracy on cognitive tasks was noted.*^[17]

Adrenal Gland (from Argentina bovine), Licorice Root

Adrenal gland derived from pure Argentinian bovine is a complementary ingredient traditionally used to replenish adrenal function.^[18] Licorice contains triterpenoid saponins that influence cortisol balance, and it is a staple herb for supporting adrenal insufficiency.*^[19]



Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Vitamin C (ascorbic acid)	125 mg	139%
Vitamin B6 (as pyridoxal 5'-phosphate)	15 mg	882%
Pantothenic Acid (as d-calcium pantothenate)	150 mg	3,000%
Adrenal Gland (from bovine)(Argentina)	125 mg	**
Asian Ginseng Extract (<i>Panax ginseng</i>)(root) (4% ginsenosides)	75 mg	**
Eleuthero Extract (<i>Eleutherococcus senticosus</i>)(root)(0.8% eleutheroside)	50 mg	**
Licorice (<i>Glycyrrhiza glabra</i>)(roots)	50 mg	**
Schisandra Extract (<i>Schisandra chinensis</i>) (berries)(2% schisandrins)	50 mg	**
Rhodiola Extract (<i>Rhodiola rosea</i>)(root)(3% rosavins and 1% salidroside)	50 mg	**

** Daily Value not established.

Other Ingredients: Capsule (hypromellose and water), ascorbyl palmitate, medium-chain triglyceride oil, and silica.



Directions:

Take one capsule twice daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

Storage:

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

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Formulated To Exclude

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

***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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