

LV-GB Complex™

Supports Bile Flow + Toxin Elimination*



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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

LV-GB Complex™ is a formula uniquely targeted to promote optimal liver and gallbladder functioning and healthy detoxification.* It provides vitamins, phytonutrients, and amino acids to act as cofactors to help support the synthesis and proper flow of bile and the body's ability to detoxify and help remove potential toxins.* It contains milk thistle, artichoke extract, ox bile, taurine and other micronutrients to promote optimal digestion and absorption of dietary fats and fat-soluble nutrients.* LV-GB Complex™ is ideal for individuals who may benefit from additional liver support, those with impaired absorption of dietary fats (essential fatty acids), and those with impaired or no gallbladder functioning.*

Formula Highlights

- Clinically relevant amounts of bioavailable vitamins A (as mixed carotenoids), B6 (as pyridoxal-5-phosphate [P-5-P]), and B12 (as methylcobalamin)
- 150 mg each of L-methionine and milk thistle extract (*Silybum marianum*)
- A combination of botanicals and supportive compounds to promote antioxidant status and optimal phase II liver detoxification*
- Features taurine and ox bile to support healthy absorption and digestion of fats and fat-soluble micronutrients*
- Gluten-free, dairy-free, soy-free, non-GMO

Ingredient Highlights

Milk thistle (*Silybum marianum*)

Milk thistle is a botanical used for centuries to support liver and gallbladder health; in modern research it has been shown to promote a healthy inflammatory response, antioxidant status, and liver cell health, while also promoting anti-fibrotic properties.^{1,2} It has been shown to help reduce the production of proinflammatory cytokines and support healthy bile flow.³ Milk thistle may help protect against liver cell injury, as it promotes the healthy turnover of liver cells in the presence of certain liver disorders.^{4,5} A proposed mechanism by which milk thistle helps protect liver cells is supporting the hepatocyte membrane against lipid peroxidation.⁶ This botanical also helps reduce the uptake of xenobiotics by regulating the expression of transporters on the surface of hepatocytes involved in organic ion uptake.⁷

Silymarin, the primary active flavonoid extracted from the dried seeds and fruits of the milk thistle plant (*Silybum marianum*), may be responsible for many of the properties of this plant that promote liver health.* It helps to restore depleted glutathione due to its ability to induce glutathione S-transferase activity, likely through the augmentation of cysteine availability, a rate-limiting factor in glutathione synthesis.^{8,9} Glutathione is critical to the function of enzymes associated with phase II conjugation detoxification pathways.⁸ The liver is responsible for detoxifying many common compounds, including ethanol and estrogen, which lead to a high rate of reactive oxygen species (ROS) production. This is where glutathione, an endogenous antioxidant, is utilized in greater amounts. Nevertheless, even endogenous antioxidants are not always sufficient. This is where the antioxidant properties of silymarin may come in to support ROS scavenging, specifically superoxide anion radicals and excess nitric oxide.¹⁰ However, silymarin is lipophilic, leading to poor solubility in water and only about a 20% to 50% absorption rate in the gastrointestinal tract, indicating the necessity for high extraction concentrations above 60%, with an 80% extraction concentration found in this product.⁶

L-Methionine

L-methionine is an essential amino acid that, after absorption, is metabolized and converted into its biologically active metabolite: S-adenosyl-L-methionine (SAME). This compound plays a major role as a methyl and sulfate group donor to a variety of biochemical reactions throughout the body, prominently in the detoxification pathways.¹¹ Notably, individuals afflicted with excess toxin load and chronic liver disease often exhibit diminished methionine metabolism and subsequent depletion of SAME levels.¹¹ SAME may help with hepatoprotection, including the potential to support the liver in the setting of viral infections, such as hepatitis C, by increasing interferon signaling, a normal immune response blocked by viral pathogens.¹² Furthermore, SAME serves as a precursor to cysteine, one of the three amino acids that make up glutathione, and functions as a primary methylating agent in the liver.¹¹

Benefits*

- Promotes healthy detoxification and liver function^{1-6,8,11,14-16,25-27,29,30}
- Supports healthy bile production and secretion^{13,19-24}
- Helps support healthy absorption of fats and fat-soluble micronutrients^{13,19-24}
- Promotes antioxidant status^{10,14,17,18,30}

Supplement Facts

Serving Size 3 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin A (as Mixed Carotenoids)	1500 mcg RAE 167%	Taurine	100 mg *
Vitamin B-6 (as Pyridoxal-5-Phosphate)	5 mg 294%	Inositol	100 mg *
Vitamin B-12 (as Methylcobalamin)	15 mcg 625%	Ox Bile	75 mg *
L-Methionine	150 mg *	Artichoke Extract (<i>Cynara scolymus</i>)(leaf) [standardized to contain 5% cynarin]	75 mg *
Milk Thistle Extract (<i>Silybum marianum</i>)(seed) [standardized to contain 80% silymarin]	150 mg *	Beet Powder (<i>Beta vulgaris L.</i>)(tuber)	50 mg *

*Daily Value not established.

Artichoke (*Cynara scolymus*)

Artichoke leaf extract may possess choleric and hepatoprotective properties, and may potentially promote healthy turnover of liver cells.¹³ Artichoke may also support glutathione peroxidase activity and decrease the production of ROS.¹⁴ Animal studies indicate that artichoke leaf extract may help increase bile flow and total bile acid concentration.¹³ In a randomized, placebo-controlled trial, 60 patients with non-alcoholic steatohepatitis (NASH) receiving artichoke extract experienced significant reductions in serum aspartate transaminase (AST) and alanine transaminase (ALT) liver enzymes, total cholesterol, low-density lipoprotein (LDL) cholesterol, systolic blood pressure, and blood glucose levels.¹⁴

Beet powder (*Beta vulgaris L.*)

Beetroot is a valuable source of betaine (trimethylglycine), a molecule that helps support gallbladder function and may have a supportive role in the setting of liver degeneration and fatty acid infiltration.^{15,16} Animal studies indicate it may also help support antioxidant capacity and help reduce the activity of pro-inflammatory cytokines.¹⁶⁻¹⁸

Ox bile

Ox bile is a health-supporting agent that has been used for centuries to support liver and biliary health.¹⁹ Clinical studies indicate it may help increase the absorption of dietary fat, help support impaired fat digestion, and increase nutrient assimilation.^{20,21} Ox bile supplementation may be clinically supportive to those without a gallbladder or whose bile output may not be adequate.*

Taurine

Taurine is an amino acid that is essential for bile synthesis.²² Bile acids are conjugated to taurine (or glycine) to form bile salts, which are secreted into the intestinal lumen to emulsify fats.²² Animal studies indicate that taurine may help support healthy lipid metabolism by increasing the conversion of cholesterol into bile acids.^{23,24}

Vitamins A, B6, and methylated B12

The body's main stores of vitamin A are found in hepatic stellate cells in the liver.²⁵ Vitamin A is critical to liver health; impairments in vitamin A metabolism have been associated with liver conditions, such as non-alcoholic fatty liver disease and those associated with fibrosis.²⁶ Vitamin A plays a supportive role in the hepatic glucose metabolism, lipid homeostasis, and hepatic fibrogenesis.^{26,27} Vitamin B6 may help support endogenous glutathione synthesis.⁸ Evidence suggests that vitamin B12 may possess synergistic qualities with silymarin, particularly in support of healthy lipid metabolism.²⁸

Inositol

Inositol may help promote healthy fatty acid synthesis and support healthy liver fat metabolism.^{29,30} Animal studies indicate it may also help increase liver glutathione levels and help reduce liver triglyceride accumulation.^{29,30} Increases in hepatic superoxide dismutase (SOD) and catalase activity, enzymes that support antioxidant activity, were observed in the presence of inositol administration.³⁰

Who should take LV-GB complex™?

Patients without a gallbladder; patients needing to support liver or gallbladder function, those with an inability to handle fatty food; those with occasional bloating, gas, or gastrointestinal distress; or those with skin conditions may potentially benefit from supplementing with LV-GB Complex™.* This synergistic formula promotes healthy fat digestion and supports proper absorption of fat-soluble vitamins.* This product is also beneficial for detoxification support.*

Who should not take LV-GB Complex™?

Patients experiencing acute upper abdominal pain or who are known to have a bile duct obstruction should not take LV-GB Complex™.*

Recommended Use: Take 3 capsules per day with meals or as directed by your health-care practitioner.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---lv-gb-complex-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

***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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