



NANOEMULSION

MILK THISTLE

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Nanoemulsified Milk Thistle provides a highly bioavailable form of silymarin, a combination of bioactive flavonoids present in the well known herb, milk thistle. This formulation is designed to support detoxification and healthy liver function.

EDUCATION

A BURDENED LIVER LEADS TO AN UNHEALTHY BODY

Silybum marianum, is a revered member of the traditional herbal medicine compendium, used by herbalists for over 2,000 years for its remarkable hepatoprotective properties.¹ Featuring a prickly flower head and purple tubular flowers, this distinctive plant has been extensively studied in the scientific literature and found to support liver function, antioxidant activity, and immunity.

The human body is elegantly equipped with biochemical pathways and organs that support the transformation and elimination of harmful compounds, a process known as detoxification. The liver works tirelessly to orchestrate detoxification, equipped with a broad array of enzymes that neutralize and eliminate environmental toxins and internally-generated waste products. Because the liver is continually metabolizing toxins, it is susceptible to injury.² When demand on the liver's detoxification pathways is high, the function of this critical organ may become impaired. Liver dysfunction, in turn, causes downstream effects such as fatigue and intestinal dysbiosis.^{3,4}

ENHANCES HEALTHY LIVER FUNCTION

The herb milk thistle offers gentle, broad-based support to the liver, serving as a powerful plant ally in our modern, toxin-laden world. It is a bitter herb that promotes the excretion of hepatoprotective bile salts, aiding healthy bile flow and digestion.⁵ Milk thistle is rich in silymarin, a mixture of bioactive flavonoids including silybin, silydianin, and silychristine.

Silymarin inhibits the absorption of toxins into hepatocytes, the chief functional cells of the liver.⁶ Silymarin also protects the liver from chemical and environmental stressors, including alcohol and pathogens, and supports liver cells' ability to synthesize new proteins, assisting the organ's regenerative capacity.^{7,8}



Supplement Facts

Serving Size: 2 mL (4 Pumps)
Servings Per Container: 25

	Amount Per Serving	% Daily Value
Milk Thistle Seed Extract (80% Silymarin)	30mg	**

**Daily Value not established

Other Ingredients: Glycerin, water, ethanol, medium-chain triglycerides, tocopherol, highly purified phospholipids, natural citrus oils, natural mixed tocopherols

INCREASES ANTIOXIDANTS AND MAY ENHANCE CELLULAR RESILIENCE

The herb milk thistle has been shown to enhance the production of our bodies' master endogenous antioxidant, glutathione, by upregulating the activity of the Nrf2 pathway.⁹ Due to its phenolic structure, silymarin can also donate electrons directly to free radicals, neutralizing these damaging molecules and preventing them from harming cell membranes. Last but not least, silymarin inhibits the activity of cyclooxygenase (COX) and lipoxygenase (LOX) enzymes and NF-κB, thereby inhibiting oxidative and inflammatory processes. Together, these effects promote cellular redox balance and restore physiological homeostasis.^{10,11,12}

Emerging research indicates that milk thistle enhances the production of proteins that protect cells in times of physiological stress, including heat shock proteins, thioredoxin, and sirtuins.¹⁰

MODULATES THE IMMUNE SYSTEM

Scientific research indicates that the herb milk thistle has potent immunomodulatory properties.¹³ Silymarin downregulates the NF-κB signaling pathway, alleviating the inflammatory cytokine cascade involved in chronic inflammatory diseases. In preclinical studies, silymarin has been found to suppress the STAT3 and MEK/ERK signaling pathways involved in abnormal cell proliferation, thus offering possible chemoprotective effects.¹³ Silibinin, the major active constituent of silymarin, stabilizes mast cell membranes, inhibiting histamine release and alleviating allergic inflammation.¹⁴ Last but not least, silymarin exerts antimicrobial effects by augmenting interferon expression and forming complexes with bacterial cell walls, thereby disabling viruses and bacteria and promoting their elimination from the body.^{15,16}

EXERTS ANTI-FIBROTIC EFFECTS

Liver fibrosis is an accumulation of extracellular matrix proteins in the liver caused by chronic inflammatory assaults on the organ. Fibrosis leads to the formation of scar tissue, which ultimately compromises liver function. Through the inhibition of the NF-κB signaling pathway, silymarin helps alleviate hepatic inflammation caused by various toxic exposures that can lead to fibrosis.^{17,18}

LIPOSOMAL DELIVERY ENHANCES SILYMARIN BIOAVAILABILITY

The main constituent of silymarin, silybin, has low water solubility, limiting its bioavailability in typical oral formulations. Liposomal delivery systems improve the absorption of hydrophobic molecules and allow them to bypass hepatic first-pass metabolism, resulting in higher bioavailability. A liposomal delivery system has been found to significantly enhance the bioavailability of silymarin and enhances the compound's beneficial effects on hepatocytes and immune cells.^{19,20}

Quicksilver Delivery Systems® improve upon liposomal and emulsification technology with smaller, more stable particles made from the highest-grade ingredients available. In addition to exceptional absorption rates, these tiny liposomal and nanoemulsified particles increase diffusion across mucous membranes, enhance lymphatic circulation of nutrients and support cellular delivery.

TS210021

References available at quicksilverscientific.com/milkthistlereferences

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WARNING: NOT FOR USE BY INDIVIDUALS UNDER THE AGE OF 18 YEARS. DO NOT USE IF PREGNANT, BREAST-FEEDING, OR PLANNING TO BECOME PREGNANT. KEEP OUT OF REACH OF CHILDREN. Consult a healthcare professional before use if you have any medical condition or are taking any other supplements or medications. Do not exceed recommended dosage. See www.quicksilverscientific.com for additional safety information.

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