

# SILYMARIN FORTE



## CLINICAL APPLICATIONS

- Supports Healthy Liver, Spleen and Kidney Function
- Enhances Detoxification Pathways
- Provides Liver Cell Antioxidant Protection
- Supports Healthy Nerve Cell Function and Brain Health

## GASTROINTESTINAL SUPPORT

Silymarin is a flavonoid compound derived from milk thistle that supports liver function and enhances detoxification pathways. It is also used to support the gallbladder, kidneys, and spleen. Silymarin prevents the depletion of the intracellular antioxidant, glutathione, within liver cells, thereby enhancing detoxification and protecting cells from free radical activity. Due to its variety of functions, Silymarin Forte makes a potent addition to any liver support and detoxification program. Silymarin has a well-established safety profile and a long history of medicinal use. Silymarin Forte includes 200 mg milk thistle per capsule, standardized to 80% silymarin.

### Overview

The main bioflavonoid complex found in milk thistle seeds, silymarin has been widespread in use for thousands of years to improve bile transport and support the liver, spleen and kidneys. It enhances liver cell detoxification by preventing the depletion of glutathione and by binding to liver cells, protecting them from exposure to chemicals and toxins. Silymarin is also able to increase unique protein synthesis within cells that protect them from free radical damage.

### Liver Support and Detoxification†

Silymarin protects the liver through various functions: acting as an antioxidant;<sup>1</sup> preventing lipid oxidation;<sup>2</sup> balancing Phase I detoxification; enhancing glucuronidation, to help eliminate excess hormones;<sup>3,4</sup> and preventing the depletion of glutathione.<sup>5</sup> Silymarin also supports a normal inflammatory response by inhibiting leukotriene and prostaglandin synthesis, quieting immune mast cells and neutrophils,<sup>6-9</sup> as well as increasing the production of cellular proteins that promote

cell regeneration.<sup>10</sup> Clinical studies have also demonstrated silymarin can also boost immune health.<sup>11-13</sup>

### Kidney Health†

Silymarin has been reported to protect the health of kidneys from free radical stress caused by exposure to heavy metals.<sup>14</sup> Pre-supplementation with silymarin was also found to significantly protect cells from free radical damage induced by toxins, in a dose-dependent manner.<sup>15</sup> Dietary supplementation of silymarin has also been found to protect kidney function and promote a normal response to inflammation.<sup>16</sup>

### Nerve Cell Function and Brain Health†

Animal research has demonstrated a significant reduction in levels of amyloid beta in the brain and improvement in behavior when preventively treated with a powdered diet containing 0.1% silymarin over 6 months. Silymarin-treated animals also showed calmer behavior than controls.<sup>17</sup> In another study, silymarin was found to help counteract oxidative stress in animals to support blood sugar and nervous system health.<sup>18</sup>

### Directions

1 capsule three times per day or as recommended by your health care professional.

### Does Not Contain

Gluten, corn, yeast, artificial colors and flavors.

### Cautions

If you are pregnant or nursing, consult your physician before taking this product.

† 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.

# Supplement Facts<sup>V1</sup>

Serving Size 1 Capsule

Servings Per Container 60 & 120

	Amount Per	% Daily
1 capsule contains	Serving	Value
Milk Thistle Seed Extract (Standardized to contain 80% Silymarin)	200 mg	*

\* Daily Value not established

ID# 806060 60 Capsules

ID# 806120 120 Capsules

## References

1. Wagner H. Plant constituents with antihepatotoxic activity. In: Beal JL, Reinhard E eds. Natural Products as Medicinal Agents. Stuttgart: Hippokrates-Verlag; 1981.
2. Bosisio E, Benelli C, Pirola O, et al. Effect of the flavanolignans of *Silybum marianum* L. on lipid peroxidation in rat liver microsomes and freshly isolated hepatocytes. *Pharmacol Res* 1992;25:147-154.
3. Baer-Dubowska W, Szaefer H, Drajka-Kuzniak V. Inhibition of murine hepatic cytochrome P450 activities by natural and synthetic phenolic compounds. *Xenobiotica* 1998;28:735-743.
4. Halim AB, el-Ahmady O, Hassab-Allah S, et al. Biochemical effect of antioxidants on lipids and liver function in experimentally-induced liver damage. *Ann Clin Biochem* 1997;34:656-663.
5. Campos R, Garido A, Guerra R, et al. Silybin dihemisuccinate protects against glutathione depletion and lipid peroxidation induced by acetaminophen on rat liver. *Planta Med* 1989;55:417-419.
6. Fiebrich F, Koch H. Silymarin, an inhibitor of lipoxygenase. *Experientia* 1979;35:150-152.
7. Fantozzi R, Brunelleschi S, Rubino A, et al. FMLP-activated neutrophils evoke histamine release from mast cells. *Agents Actions* 1986;18:155-158.
8. Dehmlow C, Murawski N, de Groot H, et al. Scavenging of reactive oxygen species and inhibition of arachidonic acid metabolism by silibinin in human cells. *Life Sci* 1996;58:1591-1600.
9. De La Puerta R, Martinez E, Bravo L. Effect of silymarin on different acute inflammation models and on leukocyte migration. *J Pharm Pharmacol* 1996;48:968-970.
10. Sonnenbichler J, Zetl I. Biochemical effects of the flavanolignane silibinin on RNA, protein and DNA synthesis in rat livers. In: Cody V, Middleton E, Harbourne JB, eds. Plant Flavonoids in Biology and Medicine: Biochemical, Pharmacological, and Structure-Activity Relationships. New York, NY; 1986:319-331.
11. Deak G, Muzes G, Lang I. Immunomodulator effect of silymarin therapy in chronic alcoholic liver diseases. *Orv Hetil* 1990;131:1291-1292, 1295-1296. [Article in Hungarian].
12. Lang I, Nekam K, Gonzalez-Cabello R. Hepatoprotective and immunological effects of antioxidant drugs. *Tokai J Exp Clin Med* 1990;15:123-127.
13. Pradhan SC, Girish C. Hepatoprotective herbal drug, silymarin from experimental pharmacology to clinical medicine. *Indian J Med Res*. 2006 Nov;124(5):491-504. [PMID: 17213517].
14. Chtourou Y, Mouldi Garoui E, Boudawara T, Zeghal N. Protective role of silymarin against manganese-induced nephrotoxicity and oxidative stress in rat. *Environ Toxicol*. 2013 Jan 22. doi: 10.1002/tox.21845. [Epub ahead of print].
15. Ninsontia C, Pongjit K, Chaotham C, Chanvorachote P. Silymarin selectively protects human renal cells from cisplatin-induced cell death. *Pharm Biol*. 2011 Oct;49(10):1082-90. Epub 2011 May 18.
16. Kaur G, Athar M, Alam MS. Dietary supplementation of silymarin protects against chemically induced nephrotoxicity, inflammation and renal tumor promotion response. *Invest New Drugs*. 2010 Oct;28(5):703-13. Epub 2009 Jul 10.

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