
Effects Of The Main Flavolignans In Silybum Marianum Extract On The Human Body

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Abstract. Milk thistle (*Silybum marianum*) extracts, one of the most widely used dietary supplements, contain a mixture of six major flavonolignans (silybin A, silybin B, isosilybin A, isosilybin B, silychristin, and silydianin) and other components. However, the pharmacokinetics of the free individual flavonolignans have been only partially investigated in humans. Furthermore, antioxidant effects of the extract, which may underlie the basis of many therapeutic effects, have not been thoroughly assessed. In this article, the main beneficial effects are theoretically analyzed.

Keywords: Physiology, flavolignans, silymarin, liver, health.

Introduction. First, because it helps with liver disease, because it is an excellent hepatoprotector. This will be able to regenerate damaged liver cells and restore its proper functioning. as well as jaundice, liver cirrhosis, toxins, alcohol and drugs have been proven to treat liver injuries, you can remove toxins and toxins from the body. The plant is an excellent regulator of hormones and proteins. Milk thistle has a number of other medicinal actions: choleric and hepatoprotective, equipment for fermentation. Milk thistle is used in diseases of the grass:

- toxic or viral hepatitis;
- alcohol and nicotine addiction;
- reduction of side effects after radiation and chemotherapy;
- Elimination of harmful effects of the drug on the liver;
- during prolonged and chronic diseases;
- various origins of skin diseases and psoriatic arthritis, poriasis, dermatitis, allergic rhinitis
- various degrees of diabetes;
- Diseases of the gastrointestinal tract;
- varicose veins and general vascular diseases;
- Inflammation of the gallbladder and its ducts.

Main part. Milk thistle has been used as a cytoprotectant for the treatment of liver disease, for the treatment and prevention of cancer, and as a supportive treatment of *Amanita phalloides* poisoning. Clinical studies are largely heterogeneous and contradictory. Aside from mild gastrointestinal distress and allergic reactions, side effects are rare, and serious toxicity rarely has been reported. In an oral form standardized to contain 70 to 80 percent silymarin, milk thistle appears to be safe for up to 41 months of use. Significant drug reactions have not been reported. Clinical studies in oncology and infectious disease that are under way will help determine the efficacy and effectiveness of milk thistle.[Rainone, F. (2005)].

Milk thistle (*Silybum marianum*) was used in classical Greece to treat liver and gallbladder diseases and to protect the liver against toxins. It recently has been investigated for use as a cytoprotectant, an anticarcinogen, and a supportive treatment for liver damage from *Amanita phalloides* poisoning. Its active ingredient is silymarin, found primarily in the seeds. Silymarin undergoes enterohepatic recirculation, which results in higher concentrations in liver cells than in serum.[Boerth J, Strong KM.]. It is made up of components called flavonolignans, the most common being silybin.[Pepping J.].

Some useful information on its use against viral hepatitis: [1](#), [2](#), [3](#), [4](#).

A number of studies have suggested that silymarin is an anti-inflammatory. It regulates inflammatory mediators such as tumor necrosis factor (TNF)[Manna SK, Mukhopadhyay A], TNF-alpha[Zi X, Mukhtar H, Agarwal R], nitrous oxide, interleukin-6, and interleukin-1 receptor antagonist.[Tager M, Dietzmann J]. Silymarin also increases lymphocyte proliferation, interferon gamma, interleukin-4, and interleukin-10 cytokines, in a dose-dependent manner.[8,9]. Taken together, these effects suggest a possible role in preventing or treating infectious disease. I will quote from [google scholar](#) for more information.

Silybum marianum or milk thistle (MT) is the most well- researched plant in the treatment of liver disease. The active complex of MT is a lipophilic extract from the seeds of the plant and is composed of three isomer flavonolignans (silybin, silydianin, and silychristin) collectively known as silymarin. Silybin is a component with the greatest degree of biological activity and makes up 50% to 70% of silymarin. Silymarin is found in the entire plant but it is concentrated in the fruit and seeds. Silymarin acts as an antioxidant by reducing free radical production and lipid peroxidation, has antifibrotic activity and may act as a toxin blockade agent by inhibiting binding of toxins to the hepatocyte cell membrane receptors. In animals, silymarin reduces liver injury caused by acetaminophen, carbon tetrachloride, radiation, iron overload, phenylhydrazine, alcohol, cold ischaemia and *Amanita phalloides*. Silymarin has been used to treat alcoholic liver disease, acute and chronic viral hepatitis and toxin - induced liver diseases. This article on the effects on the liver: [Milk thistle in liver diseases: past, present, future. Ludovico Abenavoli](#)

Conclusion. Results demonstrated that all six flavonolignans were rapidly absorbed and eliminated. In order of abundance, the exposure to free flavonolignans was greatest for silybin A followed by silybin B, isosilybin B, isosilybin A, silychristin, and silydianin. The systemic exposure to these compounds appeared linear and dose proportional. The disposition of flavonolignans was stereoselective, as evidenced by the apparent clearance of silybin B, which was significantly greater than silybin A, whereas the apparent clearance of isosilybin B was significantly lower than isosilybin A. The concentrations of urinary 8-epi-prostaglandin F_{2α}, a commonly used biomarker of oxidative status in humans, were considerably decreased in study subjects after a 28-day exposure to the extract (1.3 ± 0.9 versus 0.8 ± 0.9 ng/mg creatinine) but failed to reach statistical significance ($P = 0.076$). [Hao-Jie Zhu. Etc]. In the concluding section, we conclude with an analysis of published articles about this extract. [They are](#). Articles published in 2021.

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