

MILK THISTLE - Liver Protector, Kidney protector and Brain protector - why I use this in my Cancer Protocols



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For millennia, people have been fascinated by and used milk thistle (*Silybummarianum*), a hardy flowering plant with unusual purple petaled flower spiky foliage. This botanical gem has attracted a lot of interest from researchers, medical professionals, and fans due to its extensive history of traditional and modern applications

Silymarin, one of its main bioactive components, has shown extraordinary potential in lowering lipid peroxidation and consequently showing strong antioxidant qualities. Additionally, it has been shown to have antidiabetic, hepatoprotective, and antihypertensive properties.

The main and best-known component of milk thistle extract is silymarin, a complex combination that is present in the plant's leaves, seeds, and fruits. Silymarin is mostly made up of flavonolignans and often makes about 70–80% of the extract. Along with other flavonoids including taxifolin, quercetin, and apigenin, silymarin contains several important flavonolignans, including silybin, isosilybin, silychristin, and silydianin. Silybin stands out as the main and most physiologically active component of silymarin among these chemicals.

Hepatoprotective activity

Silymarin, a milk thistle component with hepatoprotective effects, has been used for many years.

Silymarin is recognized to have a variety of advantageous qualities, including antioxidant, immunomodulatory, antifibrotic, antiproliferative, and antiviral effects, even if the exact mode of action is still not completely understood.

It is important to keep in mind, nevertheless, that silymarin is mostly excreted in the bile and has a fast liver conjugation and half-life. It requires high or repeated doses to successfully suppress hepatic inflammation *in vivo*.

The primary sources of silymarin's hepatoprotective benefits are its capacity to scavenge free radicals and boost cellular glutathione levels.

When exposed to xenobiotics, these effects result in the suppression of lipid peroxidation and increased membrane stability. In addition, silymarin has steroid-like effects by controlling nuclear expression and preventing the differentiation of stellate hepatocytes into myofibroblasts, which in turn lessens the deposition of collagen fibers.

Silybinin stands out for having a large impact on the levels of inflammatory cytokines like IL-2, IL-4, IFN-, and TNF- in the intra-hepatic messenger RNA (mRNA).

Additionally, this substance reduces hepatocyte apoptosis while lowering alanine and aspartate aminotransferase levels.

Silybin A and B decrease T-cell proliferation and the release of pro-inflammatory cytokines in a dose-dependent manner, according to in vitro research. In situations of chronic liver illness, silymarin taken orally in high doses has been shown to be useful in reducing hepatic inflammation.

Silymarin exhibits promise in preventing hepatocyte mortality brought on by high levels of circulating free fatty acids in the context of non-alcoholic fatty liver disease (NAFLD), highlighting its potential as a therapy option for this condition.

Silymarin and silybinin's protective properties against a variety of hepatotoxic substances, such as acute ethanol intoxication, carbon tetrachloride, cisplatin, thioacetamide, thallium, D-galactosamine, and acetaminophen, have been confirmed in animal experiments.

Notably, silymarin seed ethanolic extract administration dramatically lowered enzyme levels in rats with liver damage brought on by carbon tetrachloride. Furthermore, silymarin's ethyl acetate extracts significantly improved glutathione levels and HDL/LDL ratios in oxidative studies.

Renal protective activity

Silymarin, a bioactive ingredient produced from milk thistle, has shown promise in treating a range of renal problems and illnesses. Various models of renal damage in patients with renal impairment have been used to study its effects.

Renal Protection during Chemotherapy

Silymarin has shown the ability to counteract renal toxicity brought on by chemotherapy drugs like cisplatin and ifosfamide without sacrificing the effectiveness of these medicines in treating tumors. This makes silymarin a potential cotreatment to lessen the chemotherapy's renal adverse effects.

Protection against Nephrotoxicity and Renal Cancer

Ferric nitrilotriacetate (Fe-NTA), which produces reactive oxygen species and lipid peroxidation, is known to cause nephrotoxicity and raise the risk of kidney cancer.

Silymarin has demonstrated beneficial effects against DNA-damaging compounds including 8-hydroxy guanosine and lipid peroxidation caused by FeNTA. The antioxidant and free radical scavenging capabilities of silymarin are responsible for these beneficial effects. The NF- κ B pathway, which is involved in fostering neoplastic processes, cellular inflammation, proliferation, and the prevention of apoptosis, can also be suppressed by silymarin. Silymarin is a potential treatment option for renal carcinogenesis due to its capacity to decrease NF- κ B activation.

Neuroprotective activity

Due to its high oxygen utilization, abundance of polyunsaturated fatty acids, elevated amounts of free iron ions, and relatively limited antioxidant defenses, the brain is particularly susceptible to damage from reactive oxygen species (ROS).

Silymarin, a naturally occurring substance derived from milk thistle, is being researched for its potential in treating a number of neurological diseases and has shown promise in preventing oxidative damage to the brain.

Alzheimer's disease

Protein oxidation plays a key role in the early stages of Alzheimer's disease pathogenesis. Silymarin was discovered to dramatically lessen protein oxidation in the cortex and hippocampus of aged rats when supplied at a level of 200 mg/kg. Given its antioxidant characteristics in the central nervous system and its capacity

to cross the blood-brain barrier, this raises the possibility that silymarin may play a protective role in the fight against Alzheimer's disease.

Parkinson's disease

Silymarin, at a dose of 200 mg/kg, attenuated 6-hydroxydopamine (6-OHDA)-induced rotating behavior in hemi-parkinsonian rats. Additionally, it shielded substantia nigra pars compacta neurons from 6-OHDA damage. This suggests that silymarin has a dose-dependent neuroprotective effect against 6-OHDA-induced damage, most likely by lowering oxidative stress and working through an estrogenic route.

Conclusion

Milk thistle is a well-liked option for people looking for natural therapies for liver problems and detoxification because the main active ingredient, silymarin, has been thoroughly studied for its hepatoprotective and antioxidant benefits.

Milk thistle may become a more significant component of integrative medicine, bridging the gap between conventional wisdom and modern research, opening new opportunities for enhancing health and wellbeing.

My Take...

Milk Thistle:

- Protects the liver
- Protects the kidneys
- Protects the brain



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