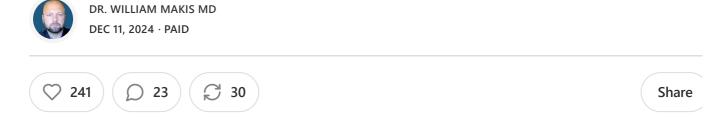
# MILK THISTLE - Liver Protector, Kidney protector and Brain protector - why I use this my Cancer Protocols





# **2023** Nov - Milk thistle: A review of its phytochemistry, pharmacology and conventional uses

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

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

The main and best-known component of milk thistle extract is silymarin, a cor 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 extrac Along with other flavonoids including taxifolin, quercetin, and apigenin, silym contains several important flavonolignans, including silybin, isosilybin, silychi 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 us many years.

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

It is important to keep in mind, nevertheless, that silymarin mostly excretes th bile and has a fast liver conjugation and half-life. It requires high or repeated o 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 ster like effects by controlling nuclear expression and preventing the differentiation stellate hepatocytes into myofibroblasts, which in turn lessens the deposition 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 alani 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 situat of chronic liver illness, silymarin taken orally in high doses has been shown to useful in reducing hepatic inflammation.

Silymarin exhibits promise in preventing hepatocyte mortality brought on by h levels of circulating free fatty acids in the context of non-alcoholic fatty liver d (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 glutathi levels and HDL/LDL ratios in oxidative studies.

#### Renal protective activity

Silymarin, a bioactive ingredient produced from milk thistle, has shown promi treating a range of renal problems and illnesses. Various models of renal dama; 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 clipid peroxidation, is known to cause nephrotoxicity and raise the risk of kidne cancer.

Silymarin has demonstrated beneficial effects against DNA-damaging compouincluding 8-hydroxy guanosine and lipid peroxidation caused by FeNTA. The antioxidant and free radical scavenging capabilities of silymarin are responsible these beneficial effects. The NFB pathway, which is involved in fostering neople processes, cellular inflammation, proliferation, and the prevention of apoptosical also be suppressed by silymarin. Silymarin is a potential treatment option for rearcinogenesis due to its capacity to decrease NF-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 (R)

Silymarin, a naturally occurring substance derived from milk thistle, is being researched for its potential in treating a number of neurological diseases and h showed 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 oxidatio 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 capa

to cross the blood-brain barrier, this raises the possibility that silymarin may p 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 substantianigra pars compacta neurons from 6-OHDA damage. This suggests t silymarin has a dose-dependent neuroprotective effect against 6-OHDA-induc damage, most likely by lowering oxidative stress and working through an estro route.

#### **Conclusion**

Milk thistle is a well-liked option for people looking for natural therapies for li problems and detoxification because the main active ingredient, silymarin, has 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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