

Rationale For Hepticene™

The liver is the largest gland in the body, accounting for approximately 2% of total body weight in adults. It is a multitasked workhorse, but primarily modifies and stores the myriad products of digestion. For example, it is responsible for storing dietary glucose (sugar) as a molecule called glycogen which converts back into glucose between meals to maintain normal blood glucose levels. The liver receives venous blood from the gastrointestinal (GI) system directly through the portal vein. After a meal, food molecules (including toxic substances) absorbed from the small intestine go directly to the liver for assimilation or detoxification.

HEPTICENE™

Nutrient Support Formula

W Y S O N G

PURPOSE:

A nutritional supplement designed to support the health of the liver and gallbladder, as well as to support the metabolic and detoxification functions of the liver.

INGREDIENTS:

Natural phytonutrient extracts and concentrates of Turmeric, Dandelion Root, Licorice Root, Lecithin, and Milk Thistle; Dried Liver.

- Contains no additives -

DIRECTIONS:

Suggested Dosage: Two capsules two times daily. Hepticene™ is best assimilated if swallowed with meals. For best results, Hepticene should be used as part of the Wysong Optimal Health Program™.

For long-term usage discontinue two days out of every week and five successive days every month to decrease the potential for intolerance development.



The liver also produces bile, which emulsifies large molecules of fat into smaller molecules for assimilation. Bile is stored in the gall bladder and secreted into the small intestine once food arrives from the stomach. Several bile ducts transport bile between the liver, gall bladder and intestine.

The liver detoxifies many poisonous substances introduced into the bloodstream by ingestion, inhalation, or from metabolic waste products. The liver also regulates blood levels of lactic acid (from anaerobic respiration in muscle), cholesterol, and non-essential amino acids (protein).

A constant and multi-faceted assault from our external and internal environments confronts the liver. For example, hepatitis viruses cause varying degrees of liver damage and are second only to tobacco smoke as carcinogenic agents. Alcohol, smoking, pollutants from the environment, a constant diet of processed foods, chronic malnutrition, and physical and emotional stresses all cause cumulative damage to the liver, diminishing the capacity of the liver to function.

The importance of the liver is apparent not only from its diverse functions but also by its incredible resilience and adaptability. Extremely large amounts of destroyed liver tissue can be regenerated. However, continued assault from alcohol and other toxins or pollutants can stress the liver beyond its recuperative abilities. There is a window of generous opportunity to heal the liver, but appropriate lifestyle and dietary modifications must be made. The Wysong Optimal Health Program™, Wysong Foundation Formulas and specific Nutrient Support Formulas such as Hepticene provide important keys for healing and prevention.

Liver Nutrition

There are nutrients that specifically enhance liver function. These include a variety of vitamins and minerals that are contained in the natural diet which are explained in the Wysong Optimal Health Program and also

in the Wysong Foundation Formulas. Additionally, there is a wide range of phytonutrients such as flavonoid antioxidants that also strengthen the liver. These antioxidants, as well as essential fatty acids, enzymes and probiotics are also found in the Foundation Formulas and are all critically important in supporting the liver. Wysong supplements are designed to provide everyone with an excellent spectrum of natural health-enhancing nutrients as an insurance policy against the limitations of the modern diet and the added stresses of our modern world.

Heptecene incorporates a variety of nutrients (not part of the Wysong Foundation Formulas) that are known to specifically target the liver. It is important, however, that the Foundation Formulas be taken concomitantly with Heptecene since they are designed to complement its effectiveness.

Heptecene is the result of several years of research seeking non-toxic, natural nutritional supplements. Ingredients have been selected based upon the weight of scientific evidence and traditional experience with their use. Supplementation with natural nutrients and “nutraceuticals” is an emerging science, and precise mechanisms of action have not been determined in many cases.

Mechanisms of Action

Heptecene Silymarin is the active component of milk thistle and provides a variety of liver benefits.

Silymarin directly aids liver cells by binding to the outside of the cells and blocking the entrance of certain toxins. This was first noted in studies involving toxic mushroom. Silymarin was also shown to block receptor sites to which the toxin binds. Also, toxins that have entered liver cells are neutralized by silymarin.

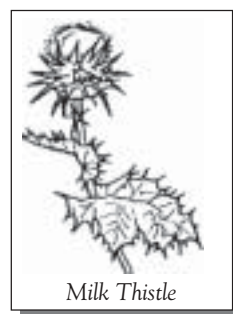
Silymarin boosts antioxidant activity of the liver by helping cells produce glutathione. It has also been shown in studies to raise liver cell glutathione levels by up to 50%.

Heptecene also increases the enzyme superoxide dismutase in red blood cells. This, along with the increase in glutathione levels, is a major aid for those with a history of alcohol abuse.

Heptecene helps the liver synthesize new protein. This was demonstrated in silymarin studies involving patients with alcoholic liver disease and chronic hepatitis. The protein-regenerating action helps liver cells return to a healthy, functional state.

Studies show that a daily dose of Heptecene Silymarin lowered liver enzyme levels in 4-8 weeks and also reversed symptoms of weakness, loss of appetite, and nausea. It also stimulated immune functioning.

The damage from certain prescription drugs like anti-depressants or anti-convulsants may be minimized by Heptecene through the prevention of free-radical damage associated with long-term use. Additionally, lipoxygenase, the enzyme that catalyzes the transformation of polyunsaturated fatty acids into inflammatory leukotrienes is inhibited.



Milk Thistle

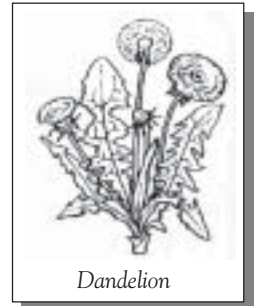
(See Lipid Nutrition: Understanding Fats and Oils in Health and Disease.) Membrane fatty acid loss is also reduced.

Heptecene Lecithin increases the capacity of bile to solubilize cholesterol. Lecithin also supplies choline, which is

necessary for liver and brain function and may help normalize the abnormally low phospholipid to cholesterol ratio associated with high blood cholesterol. A deficiency of choline and essential fatty acids has been shown to induce liver cancer in experimental animals.

Heptecene Dandelion Root has direct effects on the liver (increasing bile production and flow to the gall bladder) and on the gall bladder (causing release of stored bile).

Heptecene dandelion root also offers greater nutritional value than many other vegetables. It is particularly high in vitamins



Dandelion

(higher vitamin A content than carrots) minerals, protein, choline, inulin (probiotic) and pectins.

Heptecene Turmeric has curcumin as its active component. This compound helps prevent the liver from being damaged by toxic chemicals and enhances the flow of bile.

Heptecene Licorice Root exhibits its many pharmacological actions: estrogenic, aldosterone-like, cortisol-like (anti-inflammatory), anti-allergic, antibacterial, antiviral, anti-trichomonas, anti-convulsant, anti-cancer, expectorant, anti-cough, and anti-hepatotoxic. The major active component of licorice is glycyrrhizin. In hepatitis, glycyrrhizin inhibits liver damage produced by toxic chemicals. (Licorice has a high sodium content. Water retention can be a side effect, but rarely will this happen if appropriate precautions are taken. Licorice should not be used by patients with a history of high blood pressure or renal failure or who currently use heart medications. Prevention of side effects can be made

by instituting a high potassium, low sodium diet. Consult a nutritionally oriented physician.)

Hepticene Liver Substance is a natural way to provide the liver with exactly the nutritional components it needs to function normally. Nutrients contained within specific tissues stimulate the corresponding tissue when eaten. Thus, liver substance fuels liver growth, function, and repair.

Clinical Evidence

A double-blind study was performed in which 129 patients (cases) with toxic metabolic liver damage, fatty degeneration of the liver, and/or chronic hepatitis were compared with a control group of 56 patients. Those receiving Hepticene ingredients showed impressive improvements. A follow-up study on patients with liver damage due to alcohol, diabetes, viruses, or toxic exposure reflected similar improvements in laboratory and biopsy findings.

In other studies, liver enzyme levels were lowered in 4-8 weeks, and symptoms such as weakness and loss of appetite were reversed. Immune function was also stimulated.

A study of 170 patients in a placebo study with advanced cirrhosis of the liver had improved liver enzyme and biopsy results and lengthened survival.

Another study showed reduced damage due to viruses, and reversed liver cell injury. Liver enzymes, appetite and energy levels were increased in another study.

A study of 8 patients with gallstones for a duration of 18-34 months demonstrated significant increases in bile phospholipid content and cholate/cholesterol ratio (a measure of the liver's ability to break down cholesterol) as well as a significant decrease in bile cholesterol. Additional studies have also found lower levels of plasma total cholesterol, and increased levels of bile phosphatidylcholine.

A clinical study of 15 patients with hepatic stenosis demonstrated reversal of the condition, and a significant and progressive decrease in hepatic fat over the 6-week study period.

Studies in both humans and animals show enhanced bile flow, and improvement in liver congestion, jaundice, hepatitis, and gall stones.

Double-blind studies show effectiveness of Hepticene ingredients against hepatitis, especially chronic, active hepatitis.

One research study found reversal of liver damage (fatty changes, necrosis, and biliary hyperplasia) caused by feeding aflatoxin.

Additional work has shown significant lowering of the peroxidation of lipids in liver, lung, kidney, and brain tissue exposed to carbon tetrachloride, paraquat, and cyclophosphamide. Researchers concluded that Hepticene ingredients help liver damage and arterial disease associated with oxidative damage. Antioxidation occurs via iron chelation, which is more potent at performing this task than alpha-tocopherol vitamin E.

Research demonstrates inhibition of the liver enzymes cytochrome P450 (P450) and glutathione S-transferase (GST). The P450 enzyme hydroxylates (adds an -OH group) some compounds, rendering them toxic. GST breaks down glutathione, a tripeptide that plays an important role in the removal of damaging hydroperoxides and free radicals in the liver.

The ingredients in Hepticene have a significant body of scientific research demonstrating their efficacy in liver protection and repair. A partial listing of scientific references demonstrating the effectiveness and safety of these ingredients follows this monograph.

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.

HEPTICENE™ SCIENTIFIC REFERENCES

- Adzet T. Polyphenolic compounds with biological and pharmacological activity. *Herbs, Spices, and Medicinal Plants*. 12:167-84. 1986.
- Baron J, et al. Metabolic studies, aldosterone secretion rate and plasma renin after carbonoxolone sodium as biogastrone. *Br Med J*. 2:793-5. 1969.
- Berenguer J, et al. Double-blind trial of silymarin treatment versus placebo in the treatment of chronic hepatitis. *Muench Med Wochenschr*. 119:240-60. 1977.
- Buchman AL, et al. Lecithin increases plasma-free choline and decreases hepatic stenosis in long-term total parenteral nutrition patients. *Gastroenterology*. 102 (4 pt. 1): 1363-70. 1992.
- Campos R, et al. Silybinin dihemisuccinate protects against glutathione depletion and lipid peroxidation induced by acetaminophen on rat liver. *Planta Med*. 55:417-9. 1989.
- DiMario FR, et al. The effects of silymarin on the liver function parameters of patients with alcohol-induced liver disease: A double-blind study. *Der Toxisch-metabolische Leberscladen*. Hans. Verl-Kontor, Lubeck, Germany. pp.54-58. 1981.
- Duff G, et al. Lecithin is known to increase the capacity of the bile to solubilize cholesterol. *Am. J. Med*. 11:92. 1951.
- Duke JA. *Handbook of Medicinal Herbs*. CRC Press. Boca Raton, FL. 1985.
- Faulstich H, et al. Silybinin inhibition of amatoxin uptake in the perfused rat liver. *Arzneim-Forsch Drug Res*. 30:452-4. 1980.
- Fehér J, et al. Free radicals in tissue damage in liver diseases and therapeutic approach. *Tokai J Exp Clin Med*. 11:121-34. 1986.
- Ferenci R, et al. Randomized controlled trial of silymarin treatment in patients with cirrhosis of the liver. *J Hepatol*. 9:105-13. 1989.
- Fiebrich F, et al. Silymarin, an inhibitor of lipoxygenase. *Experientia*. 35:148-50. 1979.
- Fiebrich F, et al. Silymarin, an inhibitor of prostaglandin synthetase. *Experientia*. 35:150-52. 1979.
- Fujisawa K, et al. Therapeutic effects of liver hydrosylate preparations on chronic hepatitis. *Asian Medical Journal*. 26:497-526. 1983.
- Hikino H, et al. Antihepatotoxic actions of flavonolignans from *Silybum marianum* fruits. *Planta Medica*. 50:248-50. 1984.
- Kiso Y, et al. Antihepatotoxic principles of *Curcuma longa* rhizomes. *Planta Medica*. 49:185-87. 1983.
- Kiso Y, et al. Mechanism of anti-hepatotoxic activity of glycyrrhizin: Effect on free-radical generation and lipid peroxidation. *Planta Medica*. 50:298-302. 1984.
- Leng-Peschlow E. Alcohol-related liver diseases. *Pharmedicum*. 2:22-27. 1994.
- Maguilo E, et al. Studies on the regenerative capacity of the liver in rats subjected to partial hepatectomy and treated with silymarin. *Arzneim-Forsch Drug Res*. 23:161-67. 1973.
- Muzes G, et al. Effect of the bioflavonoid silymarin on the *in vitro* activity and expression of superoxide dismutase (SOD) enzyme. *Acta Physiol Hung*. 78:3-9. 1991.
- Mowrey DB. *The Scientific Validation of Herbal Medicine*. Cormorant Books. Lehi, UT. 1986.
- Oetari S, et al. Effects of curcumin on cytochrome P450 and glutathione S-transferase activities in rat liver. *Biochem Pharmacol*. 51(1):39-45. 1996.
- Palasciano G, et al. The effect of silymarin on plasma levels of malondialdehyde in patients receiving long-term treatment with psychotropic drugs. *Curr Ther Res*. 55:537-45. 1994.
- Pelter A, et al. The structure of silybinin (Silybum substance E6) – the first flavonolignan. *Tetrahedron Lett*. 25:2911-16. 1968.
- Polichetti E, et al. Cholesterol-lowering effect of soyabean lecithin in normolipidaemic rats by stimulation of biliary lipid secretion. *Br J Nutr*. 75(3): 471-8. 1996.
- Poser G. Experience in the treatment of chronic hepatopathies with silymarin. *Arzneim-Forsch Drug Res*.
- Salmi H, et al. Effect of silymarin on chemical, functional and morphological alterations of the liver. *Scand J Gastroenterol*. 17:517-21. 1982.
- Schopen RD, et al. Searching for a new therapeutic principle. Experience with hepatic therapeutic agent legalon. *Med Welt*. 20:888-93. 1969.
- Schopen RD, et al. Therapy of hepatoses. Therapeutic uses of silymarin. *Med Welt*. 21:691-8. 1970.
- Soni KB, et al. Reversal of aflatoxin induced liver damage by turmeric and curcumin. *Cancer Letter*. 66(2):115-21. 1992.
- Sonnenbichler J, et al. Stimulating influence of a flavonolignan derivative on proliferation, RNA synthesis and protein synthesis in liver cells. *Assessment and Management of Hepatobiliary Disease*. Springer-Verlag, Berlin. 265-72. 1987.
- Soudamini KK, et al. Inhibition of lipid peroxidation and cholesterol levels in mice by curcumin. *Indian J Physiol Pharmacol*. 36(4):239-43. 1992.
- Sreejayan MN, et al. Curcuminoids as potent inhibitors of lipid peroxidation. *J Pharm Pharmacol*. 46(12):1013-6. 1994.
- Srimal R, et al. Pharmacology of diferuloxylmethane (curcumin), a non-steroidal anti-inflammatory agent. *J Pharm Pharmacol*. 25:447-52. 1973.
- Suzuki H, et al. Effects of glycyrrhizin on biochemical tests in patients with chronic hepatitis - double-blind trial. *Asian Med J*. 26:423-38. 1984.
- Tompkins R, et al. Relationship of biliary phospholipid and cholesterol concentrations to the occurrence of human gallstones. *Ann Surg*. 172:(6):936-45. 1970.
- Tuchweber B, et al. Prevention by silybinin of phalloidin induced hepatotoxicity. *Toxicol Appl Pharmacol*. 51:265-75. 1979.
- Tuzhilin S, et al. The treatment of patients with gallstones by lecithin. *Am J Gastroenterol*. 65:231. 1976.
- Valenzuela A, et al. Selectivity of silymarin on the increase of the glutathione content in different tissues of the rat. *Planta Med*. 55:42-42. 1989.
- Wagner H, et al. The chemistry of silymarin (silybinin), the active principle of the fruits and *Silybum marianum* (L.) Gaertn. *Arzneim-Forsch Drug Res*. 18:688-696. 1968.