



Clinical Applications

- Optimize/Maintain Healthy Fat Digestion and Metabolism
- Promote/Maintain Healthy Blood Levels of Cholesterol and Triglycerides
- Support Synthesis of Bile in the Liver
- Support Healthy Bile Flow
- Maintain Healthy Balance Among Bile Components
- Promote Healthy Elimination of Bodily Waste

LipotropiX™ is a specialized liver formula that provides nutrients involved in fat metabolism and support of healthy blood lipids; as well as herbs that support bile flow and healthy liver function.

All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.

Discussion

Greater Celandine stimulates production of bile and pancreatic digestive enzymes.¹ Animal and in vitro studies have shown this herb can relieve gallbladder spasms and stimulate a sluggish gallbladder.^{2,3} Two clinical trials, (including one double-blind, placebo-controlled), demonstrated the effectiveness of greater celandine extract in reducing the symptoms of indigestion such as fullness, cramping, nausea, etc.^{4,5}

Dandelion, used medicinally as far back as the tenth and eleventh centuries, today among other uses is employed for dyspepsia, indigestion, bile stimulation and as a general stimulant, especially for kidney and liver disorders.⁶ Dandelion may be hepato-chemoprotective, may increase antioxidant liver enzymes, reduce lipid peroxidation and normalize blood lipid levels.⁷

Guggul Extract contains guggulsterone, a selective modulator of a particular bile acid receptor called “Farnesoid X receptor” (FXR). Guggul’s hypolipidemic effect possibly results from expression of the bile salt export pump through FXR-mediated antagonism and/or transactivation through the AP-1 element.⁸

Choline is involved in cholesterol transport, mobilizing and removing excess fat from the liver. It is produced in the liver through methylation of phosphatidylethanolamine. Choline is sometimes used as a hepato-protectant.⁹

Taurine, synthesized in the body from methionine and cysteine is considered “conditionally essential”. It is required for efficient fat absorption and conjugation of bile acids to solubilize cholesterol thereby increasing its excretion. Taurine is used to protect the liver and to maintain healthy lipid levels.¹⁰

Inositol Hexanicotinate is believed to decrease the mobilization of free fatty acids (especially nocturnal¹¹) and inhibit cholesterol synthesis in the liver specifically decreasing VLDL synthesis while decreasing the breakdown of HDL cholesterol. Once metabolized, the inositol in this compound is freed up and may work synergistically with other nutrients in LipotropiX™ such as choline and methionine to support healthy blood lipid levels and to minimize the build up of fats in the liver.

Methionine, a sulfur-containing essential amino acid is one of the body’s most important methyl donors, is used for liver support, especially to prevent accumulation of fat in the liver.¹²



Supplement Facts

Serving Size: 4 Capsules
Servings Per Container: 30

	Amount	%Daily Value
Inositol Hexanicotinate	1000 mg	**
Choline (citrate)	400 mg	**
Methionine	400 mg	**
Taurine	200 mg	**
Dandelion 4:1 extract	150 mg	**
Greater Celandine 4:1 extract	100 mg	**
Guggul Extract (10% guggulsterones)	750 mg	**

Other ingredients: Cellulose and Magnesium Stearate.

Dosing

Take two capsules between meals or as directed by your healthcare practitioner.

References

1. Baumann JC. Effect of Chelidonium, Curcuma, absinth and Carduus marianus on the bile and pancreatic secretion in liver diseases. *Med Monatsschr* 1975;29:173–80 [in German]. [Website: URL:www.vitacost.com. (Accessed 24 June 04)]
2. Hiller KO, Ghorbani M, Schilcher H. Antispasmodic and relaxant activity of chelidonine, protopine, coptisine, and Chelidonium majus extracts on isolated guinea-pig ileum. *Planta Med* 1998;64:758–60 [letter]. Website: URL:www.vitacost.com (Accessed 24 June 04)
3. Hriscu A, Galesanu MR, Moisa L. Cholecystokinetic action of an alkaloid extract of Chelidonium majus. *Rev Med Chir Soc Med Nat Lasi* 1980;84:559–61 [in Romanian][http://www.vitacost.com. accessed 24 June 04]
4. Kniebel R, Urlacher W. *Z Allgemeinmed* 1993;69:680–4.
5. Ritter R, Schatton WFH. Clinical trial on standardized celandine extract in patients with functional epigastric complaints: Results of placebo-controlled double-blind trial. *Comp Ther Med* 1993;1:189–93. Grieve, M. “A Modern Herbal:Dandelion” Website:URL:www.botanical.com [Accessed 25 June 04]
6. Schutz K, Carle R, Schieber A. Taraxacum--a review on its phytochemical and pharmacological profile. *J Ethnopharmacol*. 2006 Oct 11;107(3):313–23. [PMID: 16950583]
7. Cho SY, Park JY, Park EM, Choi MS, Lee MK, Jeon SM, Jang MK, Kim MJ, Park YB. Alternation of hepatic antioxidant enzyme activities and lipid profile in streptozotocin-induced diabetic rats by supplementation of dandelion water extract. *Clin Chim Acta*. 2002 Mar;317(1-2):109-17 [PMID: 11814465]
8. Deng R, et al. The hypolipidemic agent guggulsterone regulates the expression of human bile salt export pump: dominance of transactivation over farsenoid X receptor-mediated antagonism. *J Pharmacol Exp Ther*. 2007 Mar;320(3):1153-62 [PMID: 17135343]
9. Choline. www.naturaldatabase.com {accessed 3.27.07}
10. Ito T Azuma J [Taurine is a possible anti-atherosclerotic agent] *Nippon Yakurigaku Zasshi*. 2004 May;123(5):311-7. [PMID: 15118255]
11. Kruse W, Kruse W, Raetzer H, Heuck CC, Oster P, Schellenberg B, Schlierf G. Nocturnal inhibition of lipolysis in man by nicotinic acid and derivatives. *Eur J Clin Pharmacol*. 1979 Aug;16(1):11-5. [PMID: 499296]
12. www.naturaldatabase.com {Accessed 3.27.07}

Additional references available upon request.

Cautions:

Avoid during pregnancy and lactation and in childhood. Avoid if allergic to any ingredients. Avoid in persons with bile duct or bowel obstruction. Drug interactions are possible

*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.

