# **Ultra Liver Support**†

Liver Detoxification and Support†

#### DESCRIPTION

Ultra Liver Support† contains herbal and cruciferous ingredients to help support liver function and detoxification.† This formula contains broccoli sprout extract standardized to sulforaphanes and *Wasabia japonica* containing ITCs to support phase II activity in the liver and activation of Nrf2 for detoxification.†

#### **FUNCTIONS**

Ultra Liver Support† contains several dietary constituents that have been shown to support the function and structure of the liver. † The liver is the primary detoxification site in the body regulating conversion of harmful by products to neutral compounds. A variety of cruciferous vegetables including broccoli and wasabi may have potent liver protective activities which include induction of a detoxifying enzyme, glutathione Stransferase (GST). The conversion of oxidized glutathione disulfide (GSSG) to its reduced state (GSH) is the body's primary pathway for dealing with oxidative stress. This activity can be both liver protective and antiproliferative, likely via influencing levels of reactive oxygen species.

Broccoli sprout-derived sulforaphane is a phytochemical which has been shown through double-blind, placebo controlled human studies to be capable of activating GST.† Sulforaphane is considered to be an inducer of phase II enzyme activity in the liver and has also demonstrated a role in maintaining healthy colon cell function.† Another plant in the Brassicacea family containing phytochemicals with potential for cytoprotection is wasabi. The wasabi rhizome contains various isothiocyanates and in particular a key active compound called 6-methylsulfinylhexyl isothiocyanate (6-HITC) which has been shown to support various biological properties including the induction of nuclear factor erythroid 2-related factor 2 (Nrf2).† Nutrigenomic activation of transcription factor Nrf2, is required to turn on many genes that induce cytoprotection such as those playing key roles redox status and detoxification

Silybum marianum, milk thistle, is rich in flavonoids known collectively as silymarin. Silymarin has been shown to support and enhance normal, healthy liver function through three primary actions. By binding to the outer cell membrane, silymarin inhibits unwanted toxins from entering the cell. † Silymarin further protects the liver as an important component of the liver's antioxidant defense. The liver generates potentially damaging, toxic free radicals and reactive oxygen species (e.g. peroxides) as a result of its normal metabolic and detoxifying functions. Silymarin supports healthy levels of glutathione and superoxide dismutase, two primary substances with antioxidant activity in the liver that reduce free radicals known to interfere with normal cell function.† Cynara scolymus, artichoke, has been used medicinally for centuries. Similar to milk thistle, it is beneficial to the liver as it supports the liver's excretion of fats.† Extracts of artichoke can stimulate the flow of bile from the liver and support liver cells from oxidative damage.† Cynara's usefulness in liver health is thought to be due to its content of caffeoylquinic acids, e.g. cynarin, and flavonoids

Lipopolysaccharide (LPS) triggers excessive secretion of a variety of mediators including nitric oxide (NO) and prostaglandin E2 (PGE2). Luteolin and luteolin-7-O-glucoside, the active compounds with antioxidant activity from dandelion extract may support cellular protection and reduce lipopolysaccharides in animal models.† Barberry and bilberry extracts have high antioxidant activity to support the production of glutathione. Preclinical evidence on bilberry suggests protective effects on liver function by reduction in the levels of reactive oxygen species in stressed animals.†

#### INDICATIONS

Ultra Liver Support† may be a useful dietary supplement for individuals who wish to support the function of a healthy liver and detoxification process.

# **Ultra Liver Support**†

# Liver Detoxification and Support† FORMULA (#202315)

2 vegetarian capsules contain:

Barberry Extract (Berberis vulgaris, root and stem)

_ = = = = = = = = = = = = = = = = = = =	
	. 250 mg
Dandelion (Taraxacum officinale, root)	
Bilberry Extract (Vaccinium myrtillus, fruit)	Ü
(standardized to provide 25% anthocyanidins)	200 mg
Milk Thistle Extract (Silybum marianum)	Ü
(standardized to provide 80% silymarin)	175 mg
Artichoke Extract (Cynara scolymus, leaf)	
Schisandra Extract (Schisandra chinensis, fruit)	
(standardized to 2% schizandrins)	150 mg
Broccoli Extract (Brassica oleracea I., sprout)	
(standardized to 500 mcg of sulforaphane)	125 mg
Wasabia japonica (rhizome)	50 mg

(Providing 600 mcg of isothiocyanates)

Other Ingredients: Hydropropyl methylcellulose (capsule), ascorbyl palmitate, silica, and cellulose.

Gluten free, Non-GMO

#### SUGGESTED USE

Adults take 2 capsules, 1-2 times daily or as directed by a healthcare professional.

#### SIDE EFFECTS

No adverse side effects have been reported. If you are pregnant, nursing, have any health condition or taking any medication, consult your healthcare professional before using this product.

### **STORAGE**

Store in a cool, dry place, away from direct light. Keep out of reach of children.

#### REFERENCES

Tse G1, Eslick GD. Nutr Cancer. 2014;66(1):128-39. [broccoli]

Kikuchi M, Ushida Y, Shiozawa H, Umeda R, Tsuruya K, Aoki Y, Suganuma H, Nishizaki Y. World J Gastroenterol. 2015 Nov 21;21(43):12457-67. [broccoli]

Bricker GV1, Riedl KM, Ralston RA, Tober KL, Oberyszyn TM, Schwartz SJ. Mol Nutr Food Res. 2014 Oct;58(10):1991-2000. [sulforaphane]

Korry J. Hintze, Karl Wald, John W. Finley. J. Agric. Food Chem., 2005, 53 (14), pp 5535–5540. [broccoli] Antosiewicz J, Ziolkowski W, Kar S, Powolny A, Singh S. Planta Med 74 (13), 1570-1579. 2008 Jul 31 [wasabi]

Morimitsu Y. et al. 2002. 2077 (5):3456-3463. [wasabi]

Kropat C1, Mueller D, Boettler U, Zimmermann K, Heiss EH, Dirsch VM, Rogoll D, Melcher R, Richling E, Marko D. Mol Nutr Food Res. 2013 Mar;57(3):545-50. [bilberry]

Baoa L, Abeb K, Tsangb P, Xud J, Yaoc XS, Liua HW, Kuriharae H. Fitoterapia, Volume 81, Issue 8, December 2010, Pages 1094–1101. [bilberry]

Salem M, Affes H, Zeghal K, et al. Plant Foods For Human Nutrition (Dordrecht, Netherlands) [serial online]. December 2015;70(4):441-453. [artichoke]

Mehmetçik G, et al. Experimental and Toxicologic Pathology: Official Journal Of The Gesellschaft Für Toxikologische Pathologie [serial online]. September 2008;60(6):475-480. [artichoke].

Hfaiedh M, Brahmi D, Zourgui L. Environmental Toxicology [serial online]. October 1, 2014. [dandelion].

Chung Mu Park, Young-Sun Song. Nutr Res Pract. 2013 Dec; 7(6): 423-429. [dandelion].

# **Ultra Liver Support**†

## Liver Detoxification and Support<sup>†</sup>

Hu C, Kitts DD. Molecular and Cellular Biochemistry. Oct 2004, Volume 265, Issue 1, pp 107–113. [Dandelion].Berkson BM. Med Klin 1999;94 Suppl 3:84-9. [Milk thistle, selenium, Alpha Lipoic Acid]. Favari L, Perez-Alvarez V. Arch Med Res 1997;28:11-7. [Milk thistle].

H Huseini, A Mahmoudabady \*, H Naghdi Badi, S. Alavian, R Mohammadi Savadroodbari, M Mehdizadeh. J. of Medicinal Plants Volume 1, Number 41 (3-2012). [barberry]

Tomosaka H, Chin YW, Salim A, Keller W, Chai H, A. Douglas Kinghorn. Phytotherapy Research Vol 22, 7, July 2008; 979–981. [barberry]

Talavéra S, Felgines C, Texier O, Besson C, Mazur A, Lamaison JL, Rémésy C. J. Sci. Food Agric. Volume 86, 1, 15 January 2006. 90–97. [bilberry]

Baoa L, Abeb K, Tsangb P, Xud J, Yaoc XS, Liua HW, Kuriharae H. Fitoterapia, Volume 81, Issue 8, December 2010, Pages 1094–1101. [bilberry]

Flora K, Hahn M, Rosen H, et al. Am J Gastroenterol 1998;93:139-43. [Milk thistle].

Kropacova K, Misurova E, Hakova H. Radiats Biol Radioecol 1998;38:411-5. [Milk thistle].

Gopalakrishnan R, et al. Molecular And Cellular Biochemistry [serial online]. May 2013;377(1-2):163-176.[milk thistle].

Chtourou Y, Garoui E, Boudawara T, Zeghal N. Human & Experimental Toxicology [serial online]. January 2013;32(1):70-81. [milk thistle].

Luangchosiri C, et al. BMC Complementary Alternative Medicine [serial online]. September 23, 2015;15(1):334. [milk thistle].

He Q, Kim J, Sharma R. Toxicological Sciences: An Official Journal Of The Society Of Toxicology [serial online]. August 2004;80(2):335-342. [milk thistle].

## For more information on Ultra Liver Support† visit douglaslabs.com

† 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.

Manufactured by Douglas Laboratories 600 Boyce Road Pittsburgh, PA 15205 800-245-4440 douglaslabs.com



© 2015 Douglas Laboratories. All Rights Reserved DL202315-0617