

THE **MEDITERRANEAN**
IS OUR INSPIRATION

NATURAL INGREDIENTS FOR
NUTRACEUTICAL AND COSMETIC APPLICATIONS



BIONAP srl
Bioactive Natural Products



Azienda certificata secondo le
norme ISO 9001 (n. IT255373)
e ISO 13485 (n. I1255838)



ALTILIXTM
DETOXIFY YOUR BODY NATURALLY



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The artichoke (*Cynara cardunculus*), which is native to the Mediterranean region, has been grown in Sicily since the classical period of ancient Greece. Traditionally, artichoke leaves are used for the symptomatic relief of digestive disorders, such as functional dyspepsia, and to reduce the symptoms of irritable bowel (sensation of fullness, bloating and nausea) (1-11).

ALFILIX™ is a powder extract obtained from the leaves of a particular cultivar named *Cynara cardunculus* var. *altilis* DC, by using aqueous extraction methods. BIONAP has selected this specific cultivar because of its high concentration of biophenols and its resistance to severe weather conditions. Artichoke leaves are used in folk medicine for the detoxification of the body and for the gastro-intestinal well-being (1).

 COMPOSITION	ALFILIX %(W/W)
Chlorogenic Acid and derivatives (HPLC)	10.0 – 12.0
Luteolin-7-glucoside and derivatives (HPLC)	2.0 – 4.0

Suggested dosage:

100-200 mg/die



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What it does

Bioactive compounds contained in artichoke leaves have been shown to have a diuretic and detoxifying activity. These effects are attributed to the caffeoylquinic acids and flavonoids (2). The caffeoylquinic acids, such as 3-caffeoylquinic acid (chlorogenic acid), 1,3-di-O-caffeoylquinic acid (cynarin) and caffeic acid, show cholagogue and choloretic functions in several *clinical trials* (3,4,9). These functions improve bile formation and ameliorate digestion, bowel function and hepatoprotective activity (5,11,12). The flavonoids contained in artichoke leaves (such as luteolin-7- β -rutinoside (scolymoside), luteolin-7- β -D-glucoside and luteolin-4- β -D-glucoside) have shown to inhibit cholesterol biosynthesis and LDL oxidation (6-10).

How to use

ALUTILIX™ can be used in dietary supplements (capsules, tablets, granules or sachets) and functional foods and beverages designed to improve gastro-intestinal well-being (improvement of dyspeptic and IBS symptoms) and regulate bowel function.



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Scientific investigation of the cleaning body and gastro-intestinal well-being of ALTILIX™ components.

The artichoke is one of the world's oldest medicinal plants with multiple health benefits (1):

- Hepatoprotective and antioxidant activity

The hepatoprotective activity of the artichoke has been known for a long time. Nowadays, *in vivo* studies have proven that Cynara extract protects against liver damage induced by carbon tetrachloride (a highly hepatotoxic substance), counteracting the lipid peroxidation (5-4). In addition, artichoke extract has been proven to produce dose-dependent inhibition of induced oxidative stress in human model. Cynarine, chlorogenic acid and luteolin seem to be the most active substances involved in the protective antioxidant activity (13).

- Choleric-cholagogue activity

The artichoke exerts a strong choleric action, favoring hepatocellular functionality and bile secretion (9). *Clinical studies* have shown that administration of cynara extracts enables to increase bile secretion by more than 50% in the hours following the administration (3). Cynarine and chlorogenic acid exert a major effect both on choleresis and bile acid production. Numerous *clinical trials* have been carried out to demonstrate how artichoke extract helps improve symptoms of gastro-intestinal disorders such as IBS and functional dyspepsia (7, 11, 12).



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REFERENCES

1. Assessment report on *Cynara Scolymus* L., folium .EMA/HMPC/150209/2009
2. Falleh H, et al., Phenolic composition of *Cynara Cardunculus* L. organs , and their biological activities , *C.R Biologies* ,331:372-379 (2008).
3. Kirchoff R, et al., Increase in choleresis by means of artichoke extract. Results of a randomized placebocontrolled double-blind study. *Phytomedicine* 1:107–115 (1994).
4. Kraft K, et al., Artichoke leaf extract. Recent findings reflecting effects on lipid metabolism, liver, and gastrointestinal tracts. *Phytomedicine* 4:369–378 (1997).
5. Adzet T, et al., Hepatoprotective activity of polyphenolic compounds from *Cynara Scolymus* against CCl₄ toxicity in isolated rat hepatocytes. *J Nat Prod* 50:612–617 (1987).
6. Brown JE, et al., Luteolin-rich artichoke extract protects low density lipoprotein from oxidation *in vitro*. *Free Rad Res* 29:247-255 (1998).
7. Bundy R, et al., Artichoke leaf extract reduce symptoms of irritable bowel syndrome and improves quality of life in otherwise healthy volunteers suffering from concomitant dyspepsia : a subset analysis. *J Alternative Compl Med* 10(4):667-669 (2004).
8. Gebhardt R, et al., Antioxidative and protective proprieties of extract from leaves of the Artichoke against hydroperoxide-induced oxidative stress in cultures rat hepatocytes. *Toxicol Appl Pharmacol* 144:279-286(1997).
9. Gebhardt R, et al., Choleric and Anticholestatic activities of flavonoids of artichoke (*Cynara Cardunculus* L.subsp. *scolymus* (L.) Hayek *Acta Hort* 681:429-435 (2005).
10. Gebhardt R, et al., Inhibition of cholesterol biosynthesis in primary cultured rat hepatocytes by artichoke (*Cynara Scolymus* L.) extract. *Journal of Pharmacology and Experimental Therapeutics* 287:1122- 1128 (1998).
11. Holtman G, et al., Efficacy of artichoke leaf extract in the treatment of patients whit functional dyspepsia: a six-week placebo–controlled, double-blind , multicenter trial *Aliment Pharmacol Ther* 18:1099-1105 (2003).
12. Holtman G, et al., Functional dyspepsia and irritable-bowel syndrome – treatment effects of artichoke leaf extract: a placebo-controlled, randomised, multicenter trial *Gastroenterol* 124(4):182 (2003).
13. Skarpanska-Stejnborn, et al., The influence of supplementation whit artichoke extract on selected redox parameters in rowers *Int J Sport Nutr Exerc Metabol* 18:313-327 (2008).

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