

OMEOLIPID[®]

FOR LIPID METABOLISM



Omeolipid[®] is a dry powdered extract obtained from a blend of artichoke, caihua and fenugreek with anti-cholesterolemic, hypolipidemic and cholagogue properties, standardized to contain $\geq 3\%$ chlorogenic acid.

THREE MAIN REASONS TO CHOOSE EPO EXTRACTS:

QUALITY

- Manufacturing process entirely made in Italy
- Full traceability from the field to the final packaging
- Production chain checked at every step
- Accurate quantification of bioactive compounds by sophisticated analytical methods
- Compliance with EU legislation on Food and Food Supplements

SAFETY

- Botanical species certified by DNA barcoding analysis
- No harmful solvent used in the manufacturing process

EFFICACY

- A pre-clinical study proving the anti-cholesterolemic and cholagogue activities



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OMEOLIPID[®] technical datasheet is available at www.eposrl.com

REFERENCES:

1. Capasso F, Grandolini G, Izzo AA. Fitoterapia. Impiego razionale delle droghe vegetali. Springer-Verlag editor. Third edition 2006
2. Liu J, Zhang J, Shi Y, Grimsgaard S, Alraek T, Fonnebo V. Chinese red yeast rice (*Monascus purpureus*) for primary hyperlipidemia: a meta-analysis of randomized controlled trials. Chinese Medicine 2006. 1:4
3. Frigerio J, Tedesco E, Benetti F, Insolia V, Nicotra G, Mezzasalma V, Pagliari S, Labra M, Campone L. Anticholesterolemic Activity of Three Vegetal Extracts (Artichoke, Caihua, and Fenugreek) and Their Unique Blend. Front Pharmacol. 2021 Nov 23;12:726199. doi: 10.3389/fphar.2021.726199. PMID: 34887750; PMCID: PMC8650624.
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ARTICHOKE
Cynara scolymus L.



CAIHUA
Cyclanthera pedata (L.) Schrad.



FENUGREEK
Trigonella foenum-graecum L.

Omeolipid® is a blend of artichoke, caihua and fenugreek with anti-cholesterolemic, hypolipidemic and cholagogue properties, standardized to contain ≥ 3 % chlorogenic acid.

The synergic combination of the 3 plants is what makes Omeolipid® unique compared to other natural and synthetic ingredients already present in the market.

Omeolipid® is more active than the single plants. Its properties are comparable to those of red yeast rice 5% monacolin K (RYR).

OMEOLIPID® COMBINES THE TRADITIONS OF THREE DIFFERENT COUNTRIES:



ARTICHOKE *Cynara scolymus L.*

Artichoke is a Mediterranean plant; its cultivation in Europe dates back to ancient Greece and Rome. Its active substances (caffeoylquinic acids, flavonoids, sesquiterpene lactones) are concentrated in the leaf, acting as digestive, colagogue, hepatoprotective and depurative.



CAIHUA *Cyclanthera pedata (L.) Schrad.*

Caihua is a traditional plant from South America; the fruit contains flavonoids and in Peru its use is documented since 3700 b.C. as hypotensive, antidiabetic, anti-inflammatory and hypocholesterolemic.

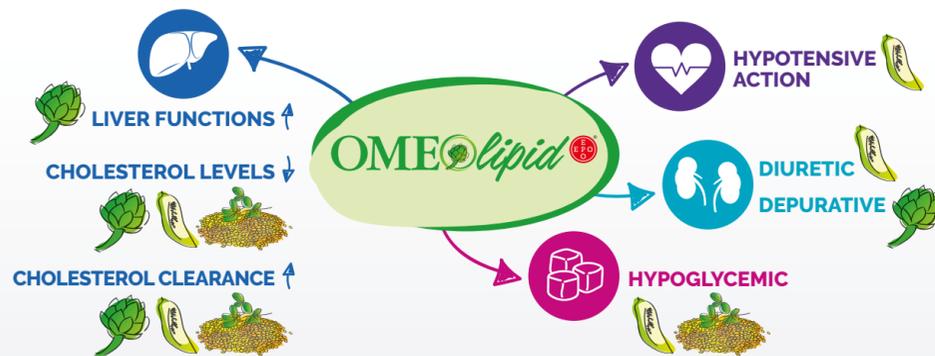


FENUGREEK *Trigonella foenum-graecum L.*

Fenugreek is a milestone of the Ayurvedic medicine, alleviating *kapha* and *vata*. The seeds contain saponines, coumarines, flavonoids and alkaloids. They are traditionally used to treat obesity and diabetes, having hypocholesterolemic, diuretic, diaphoretic, carminative, hypoglycemic and demulcent properties.



VS



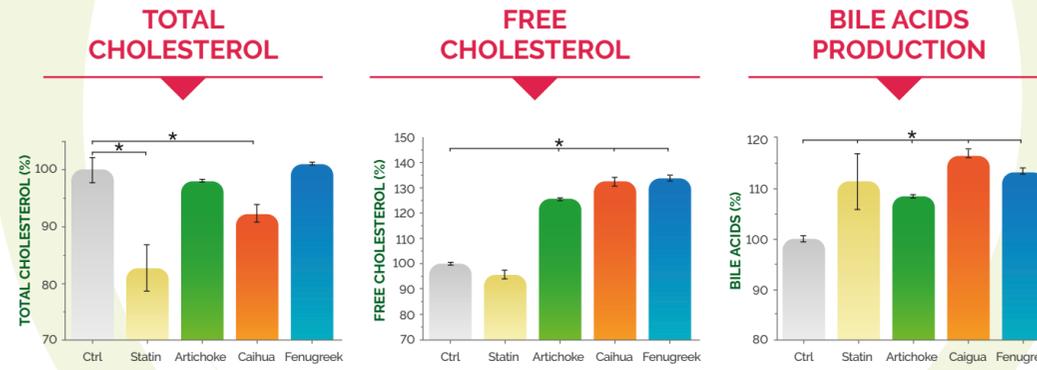
Since liver is the most important organ involved in lipid metabolism, it is essential to preserve and improve its functions. Omeolipid® has strong **hepatoprotective** and **antioxidant** effects thanks to artichoke, as well as **depurative** effect (artichoke and caihua). Moreover, Omeolipid® promotes bile production and flow, essential for **cholesterol clearance**; in addition, fenugreek **decreases gut absorption** of cholesterol, therefore its uptake.

Omeolipid® is also able to counteract the adverse effects commonly associated with obesity and high level of cholesterol:

- altered carbohydrates metabolism: caihua and fenugreek improve glycemic level control, as they are **hypoglycemic** agents.
- kidney dysfunction: caihua improves **diuresis**.
- hypertension: caihua helps regulating blood pressure.

OMEOLIPID IS THE RIGHT CHOICE FOR A MORE COMPLETE AND HOLISTIC APPROACH TO LIPID BALANCE AND WELL-BEING!

The anti-cholesterolemic and cholagogue activities of Omeolipid® were evaluated in a human *in vitro* liver model (HepG2 cell line)*. Total cholesterol is made of two fractions: esterified, the form transported by plasma (HDL, LDL etc.), and free or unesterified, the active form, later converted into bile acids.

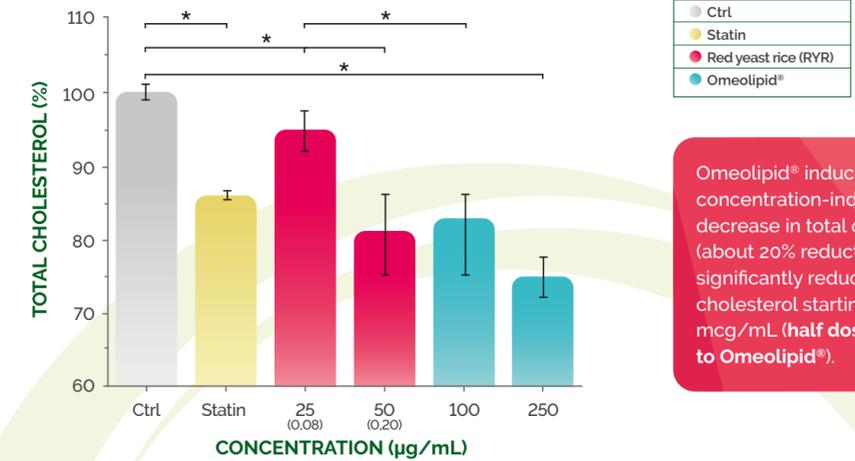


Among the tested extracts, only caihua significantly reduces total cholesterol (8% reduction)

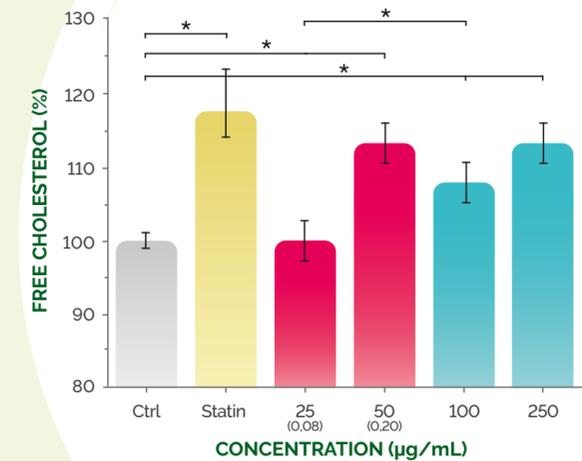
Artichoke, caihua and fenugreek increase free cholesterol (about 25%, 33% and 34% respectively) vs Ctrl, promoting an increase of cholesterol clearance. Statin does not increase free cholesterol fraction.

Artichoke, caihua and fenugreek increase the production of bile acids by about 10-20%, promoting cholesterol clearance and liver functionality.

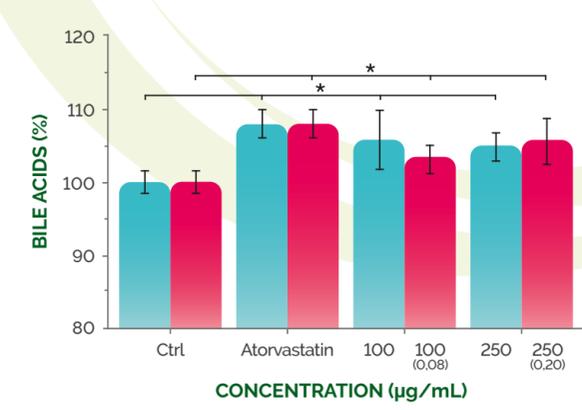
*Ctrl: non treated cells used as negative control; Atovarstatin was generally indicated as "statin". Extracts were tested at the highest, no-toxic concentration. Values are mean ± SD of three different experiments. *p < 0.05 treated cells vs control.



Omeolipid® induces a concentration-independent decrease in total cholesterol (about 20% reduction); RYR significantly reduces total cholesterol starting from 50 mcg/mL (half dose compared to Omeolipid®).



Omeolipid® likewise increases free cholesterol synthesis in HepG2 cells in a concentration-independent way.



Omeolipid®, RYR and synthetic statin increases the percentage of bile acids produced by hepatocytes compared to Ctrl cells. Noteworthy, the increase in bile acids production induced by Omeolipid® was achieved with lower concentrations compared to those of the single extracts, indicating an **additive effect**.

Two different concentrations were used for Omeolipid® and RYR respectively. These concentrations were selected through MTT analysis as non-toxic concentrations for epatocytes. Monacolin K concentration is indicated between brackets.