

# weighing the benefits, risks, and side effects of statins



### Lipid-Control combines different molecules beneficial in reducing cholesterol & the risk of CVD events

In everyday life, you don't notice high cholesterol. That's its dangerous part. Due to accumulation of cholesterol, inflammatory cells and calcium in the wall of veins, the vessel wall slowly thickens and becomes less elastic, and arteriosclerosis develops.

Thousands of studies have shown that it is not high cholesterol, but rather the **oxidation of LDL cholesterol that is one of the main causes of arteriosclerosis.** This oxidized LDL cholesterol is recognised by macrogphages, which absorb this LDL, forming foam cells in the arterial wall.

The thickening, also called a **plaque**, causes certain organs or muscles to receive too little blood and oxygen. A plaque can also rupture, creating a blood clot. This can close off the blood vessel immediately or be carried along with the blood flow. The consequences are catastrophic.

This new synergistic formulation effects on several levels to reduce excess cholesterol and related molecules.





Citrus limon Osbeck is rich in flavonoids, especially:

- Neoeriocitrin
- Naringin
- Neohesperidin

#### Points of action

- HMG-CoA reductase inhibitor
- Upregulating expression of LDL-receptor
- Inhibition of the oxidation of cholesterol
- Upregulating HDL cholesterol



# Extract of cultivated vine (Vitis vinifera) and extract of olive tree (Olea europaea)

Is a natural standardized extract of polyphenols with antioxidant properties

- Total Polyphenols: ≥ 95%
- Procyanidins (OPC): ≥ 15%
- Hydroxytyrosol: ≥ 6%

Lowering total cholesterol, LDL-cholesterol and Triglyceriden

Point of action Inhibition of the oxidation of cholesterol

## Red yeast rice (Monacolin 1.6%)

HMG-CoA reductase has an essential role in the biosynthesis of cholesterol in the liver. Inhibition of this enzyme decreases the production of cholesterol. Next to this, we see more LDL receptors in the liver, what favors LDL absorption from the blood.

### Point of action HMG-CoA reductase inhibitor



## **Lipid Control**

**RS386** 

10000		
indication	Hypercholesterolemia, Hypertriglycemia	
dosage	2 caps per day	
packaging	90 vegecaps per container	
composition (amount per 1 vegecap)	Citrus limon Osbeck Red Yeast Rice (Monacolin 1.6%)	250 mg 184,40 mg
	(=2,95 mg monacolin) Vitamin C (as ascorbic acid)	40 mg
	Extract of cultivated vine (Vitis vinifera) L-Leucine	35 mg 25 mg
	Extract of olive tree (Olea europaea)	15 mg

# References Lipid Control



Adisakwattana, Sirsichai, et al. "Lipid-Lowering Mechanisms of Grape Seed Extract (Vitis Vinifera L) and Its Antihyperlidemic Activity." Journal of Medicinal Plants Research, vol. 4, no. 20, 2010, pp. 2113–20.

Babish, John G et al. "Synergistic in vitro antioxidant activity and observational clinical trial of F105, a phytochemical formulation including Citrus bergamia, in subjects with moderate cardiometabolic risk factors." Canadian journal of physiology and pharmacology vol. 94,12 (2016): 1257–1266.

C. Nauman, Mirielle, and Jeremy J. Johnson. "Clinical Application of Bergamot (Citrus Bergamia) for Reducing High Cholesterol and Cardiovascular Disease Markers." Integrative Food, Nutrition and Metabolism, vol. 6, no. 2, 2019, pp. 1–12.

Cao, Ai Hong, et al. "Beneficial Clinical Effects of Grape Seed Proanthocyanidin Extract on the Progression of Carotid Atherosclerotic Plaques." Journal of Geriatric Cardiology, vol. 12, no. 4, 2015, pp. 417–23.

Cicero, Arrigo F. G., et al. "Red Yeast Rice for Hypercholesterolemia." Methodist DeBakey Cardiovascular Journal, vol. 15, no. 3, 2019, pp. 192–99.

Gliozzi, Micaela, et al. "Bergamot Polyphenolic Fraction Enhances Rosuvastatin–Induced Effect on LDL– Cholesterol, LOX–1 Expression and Protein Kinase B Phosphorylation in Patients with Hyperlipidemia." International Journal of Cardiology, vol. 170, no. 2, Elsevier B.V., 2013, pp. 140–45.

Jemai, Hedya, et al. "Lipid-Lowering and Antioxidant Effects of Hydroxytyrosol and Its Triacetylated Derivative Recovered from Olive Tree Leaves in Cholesterol-Fed Rats." Journal of Agricultural and Food Chemistry, vol. 56, no. 8, 2008, pp. 2630–36.

McRae, Marc P. "Vitamin C Supplementation Lowers Serum Low-Density Lipoprotein Cholesterol and Triglycerides: A Meta-Analysis of 13 Randomized Controlled Trials." Journal of Chiropractic Medicine, vol. 7, no. 2, 2008, pp. 48–58.

Mollace, Vincenzo et al. "Hypoglycemic and Hypolipemic Effects of a New Lecithin Formulation of Bergamot Polyphenolic Fraction: A Double Blind, Randomized, Placebo- Controlled Study." Endocrine, metabolic & immune disorders drug targets vol. 19,2 (2019): 136-143. (Toth et al.)

Mollace, Vincenzo, et al. "Hypolipemic and Hypoglycaemic Activity of Bergamot Polyphenols: From Animal Models to Human Studies." Fitoterapia, vol. 82, no. 3, Elsevier B.V., 2011, pp. 309–16.

Sui, Guo Guang, et al. "Naringin Activates AMPK Resulting in Altered Expression of SREBPs, PCSK9, and LDLR to Reduce Body Weight in Obese C57BL/6J Mice." Journal of Agricultural and Food Chemistry, vol. 66, no. 34, 2018, pp. 8983–90.

Toth, Peter P., et al. "Bergamot Reduces Plasma Lipids, Atherogenic Small Dense LDL, and Subclinical Atherosclerosis in Subjects with Moderate Hypercholesterolemia: A 6 Months Prospective Study." Frontiers in Pharmacology, vol. 6, no. JAN, 2016, pp. 1–9.

