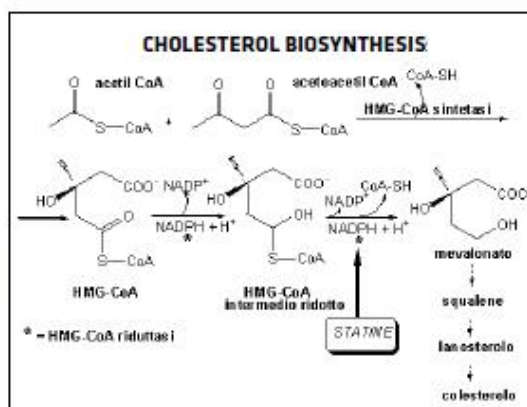


Colestout™

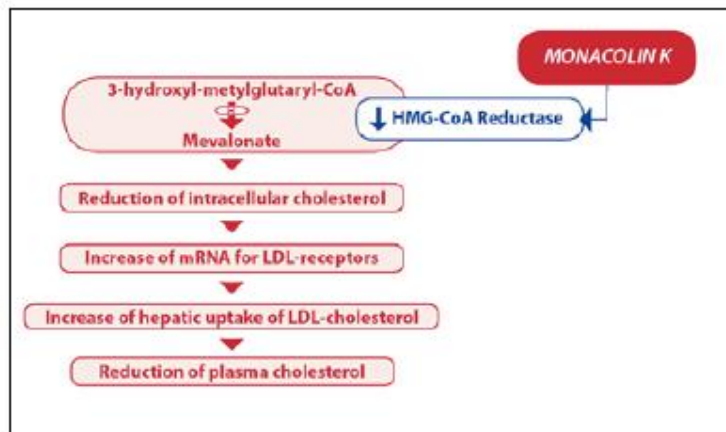
MONACOLIN



Red yeast Rice
Extract 3/5% monacolin-K



Nutratrade s.r.l.



**100%
NATURAL**

**ANTIOXIDANT
ACTION**

**LOWER LEVELS
CHOLESTEROL**

BIBLIOGRAPHY

World J Microbiol Biotechnol. 2016 May;32(5):87. doi: 10.1007/s11274-016-2035-2. Epub 2016 Apr 2.

Functional food red yeast rice (RYR) for metabolic syndrome amelioration: a review on pros and cons.
Patel S¹.

Middle-Term Dietary Supplementation with Red Yeast Rice Plus Coenzyme Q10 Improves Lipid Pattern, Endothelial Reactivity and Arterial Stiffness in Moderately Hypercholesterolemic Subjects.

Cicero AF1, Morbini M, Rosticci M, D'Addato S, Grandi E, Borghi C.

Altern Ther Health Med. 2015;21 Suppl 2:40-5.

Red Yeast Rice Plus Berberine: Practical Strategy for Promoting Vascular and Metabolic Health.

McCarty ME, O'Keefe JH, DiNicolantonio JJ.

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MONACOLIN

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Functional food red yeast rice (RYR) for metabolic syndrome amelioration: a review on pros and cons.

Patel S¹.

Abstract

Red yeast rice (RYR), the fermentation product of mold *Monascus purpureus* has been an integral part of Oriental food and traditional Chinese medicine, long before the discovery of their medicinal roles. With the identification of bioactive components as polyketide pigments (statins), and unsaturated fatty acids, RYR has gained a nutraceutical status. Hypercholesterolemic effect of this fermented compound has been validated and monacolin K has been recognized as the pivotal component in cholesterol alleviation. Functional similarity with commercial drug lovastatin sans the side effects has catapulted its popularity in other parts of the world as well. Apart from the hypotensive role, ameliorative benefits of RYR as anti-inflammatory, antidiabetic, anticancer and osteogenic agent have emerged, fueling intense research on it. Mechanistic studies have revealed their interaction with functional agents like coenzyme Q10, astaxanthin, vitamin D, folic acid, policosanol, and berberine. On the other hand, concurrence of mycotoxin citrinin and variable content of statin has marred its integration in mainstream medication. In this disputable scenario, evaluation of the scopes and lacunae to overcome seems to contribute to an eminent area of healthcare. Red yeast rice (RYR), the rice-based fermentation product of mold *Monascus purpureus* is a functional food. Its bioactive component monacolin K acts like synthetic drug lovastatin, without the severe side effects of the latter. RYR has been validated to lower cholesterol, control high blood pressure; confer anti-inflammation, hypoglycaemic, anticancer and osteogenic properties. However, dose inconsistency and co-occurrence of toxin citrinin hampers its dietary supplementation prospect. Further research might facilitate development of RYR as a nutraceutical.

Middle-Term Dietary Supplementation with Red Yeast Rice Plus Coenzyme Q10 Improves Lipid Pattern, Endothelial Reactivity and Arterial Stiffness in Moderately Hypercholesterolemic Subjects.

Cicero AF1, Morbini M, Rosticci M, D'Addato S, Grandi E, Borghi C.

Abstract

AIM: The aim of our study was to investigate whether treatment with red yeast rice added with Coenzyme Q10 is associated with changes in endothelial function and arterial stiffness.

METHODS: This double blind, placebo-controlled, randomized clinical trial was carried out on 40 non-smoker moderately hypercholesterolemic subjects (ClinicalTrial.gov ID [NCT02492464](#)). After 4 weeks of diet and physical activity, patients were allocated to treatment with placebo or with an active product containing 10 mg monacolins and 30 mg Coenzyme Q10, to be assumed for 8 months. Endothelial reactivity and arterial stiffness have been measured through the validated Vicorder® device.

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RESULTS: During monacolin treatment, patients experienced a more favorable percentage change in low density lipoprotein (LDL)-cholesterol (after monacolin treatment: -26.3%; after placebo treatment: +3.4%, $p < 0.05$). Endothelial reactivity (pulse volume displacement after monacolin treatment: +6.0%; after placebo treatment: -0.3%, $p < 0.05$), and arterial stiffness (pulse wave velocity (PWV) after monacolin treatment: -4.7%; after placebo: +1.1%, $p < 0.05$) also significantly improved only after monacolin treatment.

CONCLUSION: The long-term assumption of the tested dietary supplement is associated with an improvement in LDL-cholesterolemia, endothelial reactivity and PWV in moderately hypercholesterolemic subjects.

[Altern Ther Health Med, 2015;21 Suppl 2:40-5.](#)

Red Yeast Rice Plus Berberine: Practical Strategy for Promoting Vascular and Metabolic Health.

[McCarty MF, O'Keefe JH, DiNicolantonio JJ.](#)

Abstract

Lovastatin, the progenitor of the statin family, is in fact a naturally occurring compound produced by the yeast *Monascus purpureus*. Red yeast rice (RYR), a traditional Chinese food made by fermenting rice with *M purpureus*, is an herbal medicine that has been used for 1200 y as a therapy for problems related to circulation and digestion. RYR contains a range of compounds known as monacolins, of which monacolin K-renamed lovastatin by pharmaceutical researchers-was found to be the most potent inhibitor of cholesterol synthesis. Standardized extracts of RYR, providing 10 mg of monacolins daily, have been shown to lower elevated low-density lipoprotein (LDL) cholesterol by approximately 20%. In a large secondary prevention trial in China, RYR was found to be markedly protective with respect to cardiovascular events and total mortality. Yet RYR very rarely induces the myopathy and hepatic damage commonly seen with prescription statin therapy. The Chinese herbal compound berberine, used to treat diabetes and congestive heart failure in China, has been shown to increase hepatic expression of LDL receptors and, hence, to lower LDL cholesterol, by extending the half-life of LDL receptor messenger ribonucleic acid (mRNA). This effect is complementary to the increased transcription of this mRNA promoted by statin therapy. Because berberine is well tolerated aside from transient gastrointestinal (GI) upset in some people and, in particular, has not been reported to cause myopathy or hepatic damage, the combination of RYR and berberine may have the potential to achieve reductions in LDL cholesterol comparable with those achieved with prescription statin therapy, but without the associated risks such as muscle damage and diabetes. Moreover, berberine, via its ability to activate adenosine monophosphate-activated kinase (AMPK), which it shares with the drug metformin, can lower triglycerides, improve metabolic syndrome, aid glycemic control in diabetics, and act directly on the vasculature to promote vascular health. It may also have the potential to reduce risk for various cancers, osteoporosis, osteoarthritis, nonalcoholic fatty-liver disease, and neurodegenerative disorders, although such predictions are highly speculative. Whereas statin therapy modestly increases risk for type 2 diabetes, berberine likely has the opposite effect. These considerations suggest that combined administration of RYR and berberine may provide a broader range of health protection than is afforded by prescription statin therapy, with lower risks for serious adverse effects compared with statins. Randomized, controlled trials (RCTs) assessing the effect of optimal intakes of RYR and berberine on serum lipids and other vascular risk factors are needed.