

Lipotrienols RYR™



— *Natural Lipid Management & Optimization of Cardiac and Vascular Health* —

THIS INFORMATION IS PROVIDED FOR THE USE OF PHYSICIANS AND OTHER LICENSED HEALTH CARE PRACTITIONERS ONLY. THIS INFORMATION IS INTENDED FOR PHYSICIANS AND OTHER LICENSED HEALTH CARE PROVIDERS TO USE AS A BASIS FOR DETERMINING WHETHER OR NOT TO RECOMMEND THESE PRODUCTS TO THEIR PATIENTS. THIS MEDICAL AND SCIENTIFIC INFORMATION IS NOT FOR USE BY CONSUMERS. THE DIETARY SUPPLEMENT PRODUCTS OFFERED BY DESIGNS FOR HEALTH ARE NOT INTENDED FOR USE BY CONSUMERS AS A MEANS TO CURE, TREAT, PREVENT, DIAGNOSE, OR MITIGATE ANY DISEASE OR OTHER MEDICAL CONDITION.

Lipotrienols RYR™ is a powerful combination of natural substances intended to favorably modulate the blood lipid profile and optimize cardiac and vascular health, including high delta-fraction tocotrienols, organic red yeast rice extract (*Monascus purpurea*), and lycopene with added lecithin for bioavailability.

Organic Red Yeast Rice (*Monascus purpureus*)

Red yeast rice is the product of yeast (*Monascus purpureus*) grown on rice, containing several compounds collectively known as monacolins, substances known to modulate blood lipids.¹ Overall, studies suggest that RYR may reduce cardiovascular risk²⁻³ by virtue of its lipid modulating¹, anti-inflammatory⁴, antioxidant⁵, and antimicrobial properties, as well as its ability to lower blood pressure and reduce proliferation of the arterial layer known as the intima, the area of the vessel where atherosclerotic lesions occur.⁶⁻⁸

The red yeast rice in **Lipotrienols RYR™** is USDA certified organic and grown in the USA. Designs for Health takes great care to assay our red yeast rice to assure that there are undetectable levels of citrinin (< 1 ppm), as well as substantial levels of naturally-occurring monocolin compounds (4 mg per 2 capsule serving).

Tocotrienols

Research by Bristol Myers Squibb, and others, has demonstrated that delta and gamma tocotrienols are the most effective tocotrienol fractions at modulating blood lipids, especially in the absence of tocopherols.⁹ Tocotrienols are often supplied from rice bran oil or palm oil. These contain between 30-50% tocopherols. Tocopherols greater than 20% decrease the effect of tocotrienols on modulating blood lipids. Annatto tocotrienols, used in **Lipotrienols RYR™**, are a unique makeup of 90% delta-tocotrienol and 10% gamma-tocotrienol with zero tocopherols. Research has clearly proven the ability of tocotrienols to modulate blood lipids.¹⁰ Tocotrienols decrease the conversion of farnesyl, a mevalonate derived intermediate, to farnesol, which usually goes on to make squalene and ultimately cholesterol. The increasing farnesol pool then signals the proteolytic degradation and downregulation of the HMG-CoA reductase enzyme. Tocotrienols also upregulate LDL receptors and LDL clearance and also inhibit the progression of carotid artery stenosis that may lead to stroke.⁹⁻¹⁰

Profound synergism has been demonstrated in the peer-reviewed literature regarding the concomitant use of both lovastatin and tocotrienols in favorably altering serum lipid profiles and reducing biomarkers of cardiovascular risk.¹¹⁻¹² For example, a 14% reduction in total cholesterol was seen when used alone vs. a 20% reduction when taken together.¹³ Since red yeast rice is also a HMG-CoA reductase inhibitor it is likely that similar synergistic effects between red yeast rice and tocotrienols would also be observed.

Lycopene

Lycopene is a carotenoid present in human serum, liver, adrenal glands, lungs, prostate, colon, and skin at higher levels than other carotenoids. Lycopene has been found to possess antioxidant and antiproliferative properties in animal and in vitro studies. Numerous epidemiological investigations have correlated high intake of lycopene-containing foods or high lycopene serum

Supplement Facts

Serving Size 2 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value
Organic Red Yeast Rice (<i>Monascus purpureus</i>)	1200 mg *
Lecithin (40% Phosphatidylcholine)	100 mg *
Tocotrienols (from Annatto Bean)	100 mg *
Lycopene	20 mg *

*Daily Value not established.

Other Ingredients: Microcrystalline cellulose, magnesium stearate.

levels with reduced incidence of cancer, cardiovascular disease, and macular degeneration.¹⁴⁻¹⁶ A group of researchers gave postmenopausal women either HRT (hormone replacement therapy) or 2 mg lycopene. Both gave similar significant reductions in total cholesterol and LDL and an increase in HDL.¹⁷ Women who do not wish to use HRT during menopause can receive the same protection from coronary artery disease by consuming lycopene.

Lecithin

Lecithin (40% phosphatidylcholine) has been shown in research to enhance absorption of lycopene and likely aids absorption of the other fat-soluble compounds such as the tocotrienols.¹⁸

How to Take Lipotrienols RYR™

Dosage: As a dietary supplement, take two capsules with food, at night, since cholesterol synthesis is greatest while sleeping. Take a few hours away from an alpha-tocopherol, vitamin E, containing product such as a multivitamin.

Should Anything Else Be Taken with Lipotrienols RYR™?

Since **Lipotrienols RYR™** affects the HMG-CoA-reductase enzyme, although more subtly than statin medications, it may mildly reduce endogenous production of coenzyme Q10. Therefore, it is advised that those taking **Lipotrienols RYR™** also take supplemental CoQ10, such as Q•Avail or Q•Avail Nano by Designs for Health. For even more aggressive lipid control consider DFH Cholesterol Support Packets.

Who Should Not Take Lipotrienols RYR™

This product is not recommended for pregnant and lactating women. Cholesterol levels naturally increase during pregnancy to support the necessary increase in hormone production.

References

1. Patrick, L. and Uzick, M. Cardiovascular disease: C-reactive protein and the inflammatory disease paradigm: HMG-CoA reductase inhibitors, alpha-tocopherol, red yeast rice, and olive oil polyphenols. A review of the literature. *Altern. Med Rev.* 2001;6(3):248-271.
2. Zhao, S. P., Lu, Z. L., Du, B. M., Chen, Z., Wu, Y. F., Yu, X. H., Zhao, Y. C., Liu, L., Ye, H. J., and Wu, Z. H. Xuezhikang, an extract of cholestin, reduces cardiovascular events in type 2 diabetes patients with coronary heart disease: subgroup analysis of patients with type 2 diabetes from China coronary secondary prevention study (CCSPS). *J Cardiovasc. Pharmacol* 2007;49(2):81-84.
3. Journoud, M. and Jones, P. J. Red yeast rice: a new hypolipidemic drug. *Life Sci.* 4-16-2004;74(22):2675-2683.
4. Liu, L., Zhao, S. P., Cheng, Y. C., and Li, Y. L. Xuezhikang (red yeast rice) decreases serum lipoprotein(a) and C-reactive protein concentrations in patients with coronary heart disease. *Clin Chem.* 2003;49(8):1347-1352.
5. Martinkova, L., Patakova-Juzlova, P., Krent, et al. Biological activities of oligopeptide pigments of *Monascus purpureus*. *Food Addit. Contam.* 1999;16(1):15-24.
6. Hsieh, P. S. and Tai, Y. H. Aqueous extract of *Monascus purpureus* M9011 prevents and reverses fructose-induced hypertension in rats. *J Agric. Food Chem.* 7-2-2003;51(14):3945-3950.
7. Kohama, Y., Matsumoto, S., Mimura, T., Tanabe, N., Inada, A., and Nakanishi, T. Isolation and identification of hypotensive principles in red-mold rice. *Chem Pharm Bull.(Tokyo)* 1987;35(6):2484-2489.
8. Qi, G., Dingy, Z., Li, L., and Anle, Z. Effects of xuezhikang on neointimal proliferation and C-myc gene expression after angioplasty in rabbits. *Chinese Journal of Internal Medicine* 1999;38(8):514-516.
9. Tomeo AC, Geller M, Watkins TR, Gapor A, and Bierenbaum ML. Antioxidant effects of tocotrienols in patients with hyperlipidemia and carotid stenosis. *Lipids* 1995 Dec;30(12):1179-83.
10. Qureshi, Qureshi, Wright et al. 1991. Lowering of serum cholesterol in hypercholesterolemic humans by tocotrienols. *J. Am. Clin. Nut* 53:1021S-1026S.
11. Qureshi AA, Peterson DM. The combined effects of novel tocotrienols and lovastatin on lipid metabolism in chickens. *Atherosclerosis* 2001;156(39-47)
12. McAnally JA, Gupta J, Sodhani S, et al. Tocotrienols potentiate lovastatin-mediated growth suppression in vitro and in vivo. *Exp Biol Med* 2007;232:523-531.
13. Qureshi AA, et al. Synergistic effect of tocotrienol-rich fraction (TRF(25)) of rice bran and lovastatin on lipid parameters in hypercholesterolemic humans. *J. Nutr Biochem.* 2001 Jun;12(6):318-329.
14. Knekt P, Reunanen A, Jarvinen R, et al. Antioxidant vitamin intake and coronary mortality in a longitudinal population study. *Am J Epidemiol* 1994;139(12):1180-1189.
15. Morris DL, Kritchevsky SB, Davis CE. Serum carotenoids and coronary heart disease. The Lipid Research Clinics Coronary Primary Prevention Trial and Follow-up Study. *JAMA* 1994;272(18):1439-1441.
16. Fuhrman B, Elis A, Aviram M. Hypocholesterolemic effect of lycopene and beta-carotene is related to suppression of cholesterol synthesis and augmentation of LDL receptor activity in macrophages. *Biochem Biophys Res Commun* 1997;233(3):658-662.
17. Misra R. et al. LycoRed as an alternative to hormone replacement therapy in lowering serum lipids and oxidative stress markers: a randomized controlled clinical trial. *J. Obstet Gynaecol Res.* 2006 Jun;32(3):299-304.
18. Megumi Nishimukai and Hiroshi Hara. Enteral Administration of Soybean Phosphatidylcholine Enhances the Lymphatic Absorption of Lycopene. *J. Nutr.* 134:1862-1866, August 2004.