

EMIQ

Activated Quercetin

Potent Antioxidant

Product Summary

Quercetin, a dietary flavonol known to be one of the most potent plant-derived antioxidants, has multiple biological actions, with anti-inflammatory, anti-thrombotic and vasodilatory benefits in pre-clinical studies.¹ However, clinical trials have not consistently matched expected results based upon pre-clinical studies.

The limiting factor in quercetin's clinical efficacy appears to be its poor bioavailability. Enzymatically modified isoquercitrin (EMIQ) is a mixture of quercetin monoglucoside and its alpha-oligoglucosides that has been shown to have significantly greater bioavailability than other available forms. In animals, EMIQ was shown to produce a 40 fold increase in C_{max} (peak plasma concentration) and an 18-fold increase in the area under the curve compared to quercetin.² In humans, EMIQ supplementation increased plasma concentrations to a significantly greater degree than other forms,³ including aglycone and isoquercitrin, with randomized placebo-controlled trials documenting improvement in allergic symptoms.^{4,5} EMIQ has also shown significantly enhanced biological activity especially in animal models of allergy and neoplasia.⁶

EMIQ has shown significant effects in improving ocular symptoms of hay fever in double-blind clinical studies. In one study, 20 subjects with hay fever due to Japanese cedar pollinosis took two capsules daily of 100 mg EMIQ or a placebo for 8 weeks during the pollen season.⁷ During the entire study period, total ocular score and ocular itching score for the EMIQ group were significantly lower than the placebo group. In another study of hay fever due to Japanese cedar pollinosis, 24 subjects took 100 mg EMIQ or a placebo for 8 weeks, starting 4 weeks prior to the onset of pollen release.⁸ During the entire study period, ocular symptom and medication scores for the EMIQ group were significantly lower than the placebo group. When limited to the pollen release period, ocular symptom and ocular congestion scores for the EMIQ group were significantly lower than the placebo group. Other scores for the EMIQ group, such as ocular itching scores, lacrimation scores, and ocular congestion scores, all tended to be lower.

Unique Features

- 40 times greater absorption than quercetin
- Provides 167 mg enzymatically modified isoquercitrin (EMIQ) and 50 mg vitamin C per capsule
- Prepared using a natural enzyme process that attaches polysaccharides to convert quercetin into a soluble form
- Capsules suitable for vegetarians and vegans

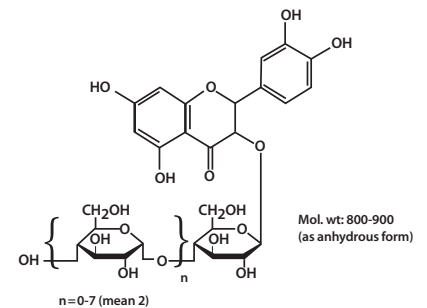
EMIQ

Activated Quercetin

60 Vegetarian Capsules

Code: 9411

NPN: 80049716



Actual size: 19.26 mm x 6.75 mm

Feature: Potent Antioxidant

Supplement Facts

Serving Size: 1 Vegetarian Capsule

Servings per Container: 60

Each Capsule Contains:

EMIQ (Enzymatically Modified Isoquercitrin).....	167 mg
(Providing 50 mg of Highly Absorbable Quercetin)	
Vitamin C (Calcium Ascorbate)	50 mg

Non-medicinal Ingredients: Microcrystalline cellulose, vegetarian capsule (carbohydrate gum [cellulose], purified water), vegetable grade magnesium stearate (lubricant).

Contains no artificial colours, preservatives, or sweeteners; no dairy, starch, sugar, wheat, gluten, yeast, soy, corn, egg, fish, shellfish, animal products, salt, tree nuts, or GMOs. Suitable for vegetarians/vegans. Sealed for your protection. Do not use if seal is broken. For freshness, store in a cool, dry place.

Recommended Adult Dose: 1 capsule, 1–2 times per day, or as directed by a health care practitioner. Consult a health care practitioner for use beyond 8 weeks.

Recommended Use: EMIQ, or enzymatically modified isoquercitrin, is prepared by using a natural enzyme process that attaches polysaccharides to convert quercetin—which has poor bioavailability—into a soluble form (Alpha-Glycosyl Isoquercitrin). According to pharmacokinetic data, the absorption of EMIQ is up to 40 times greater (Cmax) and 15 times greater (AUC) than that of quercetin and reaches peak levels in the bloodstream in just 15 minutes. A factor in the maintenance of good health. Helps the body to metabolize fats and proteins. Helps in connective tissue formation and in the development and maintenance of bones, cartilage, teeth and gums. Helps in wound healing, and is an antioxidant for the maintenance of good health.

Contraindications: No specific contraindications, although safety has not been established during pregnancy and lactation. Patients with impaired renal function should also use with caution.

Drug Interactions: No specific drug interactions, although theoretically, drugs metabolized by CYP3A4 and/or P-glycoprotein (Pgp) could have altered pharmacokinetics/bioavailability.⁹

References:

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3. Murota K, Matsuda N, Kashino Y, et al. alpha-Oligoglucosylation of a sugar moiety enhances the bioavailability of quercetin glycosides in humans. *Arch Biochem Biophys.* 2010 Sep 1;501(1):91-7
4. Hirano T, Kawai M, Arimitsu J, et al. Preventative effect of a flavonoid, enzymatically modified isoquercitrin on ocular symptoms of Japanese cedar pollinosis. *Allergol Int.* 2009 Sep;58(3):373-82.
5. Kawai M, Hirano T, Arimitsu J, et al. Effect of enzymatically modified isoquercitrin, a flavonoid, on symptoms of Japanese cedar pollinosis: a randomized double-blind placebo-controlled trial. *Int Arch Allergy Immunol.* 2009;149(4):359-68.
6. Makino T, Kanemaru M, Okuyama S, et al. Anti-allergic effects of enzymatically modified isoquercitrin (α -oligoglucosyl quercetin 3-O-glucoside), quercetin 3-O-glucoside, α -oligoglucosyl rutin, and quercetin, when administered orally to mice. *J Nat Med.* 2013 Mar 14.
7. Kawai M, Hirano T, Arimitsu J, et al. Effect of enzymatically modified isoquercitrin, a flavonoid, on symptoms of Japanese cedar pollinosis: a randomized double-blind placebo-controlled trial. *Int Arch Allergy Immunol.* 2009;149(4):359-68.
8. Hirano T, Kawai M, Arimitsu J, et al. Preventative effect of a flavonoid, enzymatically modified isoquercitrin on ocular symptoms of Japanese cedar pollinosis. *Allergol Int.* 2009 Sep;58(3):373-82.
9. Hsiu SL, Hou YC, Wang YH, et al. Quercetin significantly decreased cyclosporin oral bioavailability in pigs and rats. *Life Sci.* 2002 Dec 6;72(3):227-35.



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