

DRUG-NUTRIENT INTERACTIONS REPORT

This report details drug-nutrient interactions for **Quercetin**.

Potential Negative Interaction

1. Estradiol (Quercetin)

Studies have shown that grapefruit juice significantly increases estradiol levels in the blood. One of the flavonoids found in grapefruit juice is quercetin. In a test tube study, quercetin was found to change estrogen metabolism in human liver cells in a way that increases estradiol levels and reduces other forms of estrogen. This effect is likely to increase estrogen activity in the body. However, the levels of quercetin used to alter estrogen metabolism in the test tube were much higher than levels found in the body after supplementing with quercetin.

There is evidence from test tube studies that another flavonoid in grapefruit juice, naringenin, also has estrogenic activity. It has yet to be shown that dietary or supplemental levels of quercetin (or naringenin) could create a significant problem.

References

1. Schubert W, Cullberg G, Edgar B, Hedner T. Inhibition of 17 beta-estradiol metabolism by grapefruit juice in ovariectomized women. *Maturitas* 1994;20:155-63.
2. Weber A, Jager R, Borner A, et al. Can grapefruit juice influence ethinylestradiol bioavailability? *Contraception* 1996;53:41-7.
3. Schubert W, Eriksson U, Edgar B, et al. Flavonoids in grapefruit juice inhibit the in vitro hepatic metabolism of 17 beta-estradiol. *Eur J Drug Metab Pharmacokinet* 1995;3:219-24.
4. Kuiper GG, Lemmen JG, Carlsson B, et al. Interaction of estrogenic chemicals and phytoestrogens with estrogen receptor beta. *Endocrinology* 1998;139:4252-63.

2. Felodipine (Quercetin)

Quercetin is a flavonoid found in grapefruit juice, tea, onions, and other foods; it is also available as a nutritional supplement. Quercetin has been shown in test tube studies to inhibit enzymes responsible for breaking down felodipine into an inactive form. This interaction may result in increased blood levels of felodipine that could lead to unwanted side effects. Until more is known about this interaction, patients taking felodipine should avoid supplementing with quercetin.

References

1. Miniscalco A, Lundahl J, Regardh CG. Inhibition of dihydropyridine metabolism in rat and human liver microsomes by flavonoids found in grapefruit juice. *J Pharmacol Exp Ther* 1992;261:1195-9.

Talk to Your Doctor or Pharmacist

1. Cyclosporine (Quercetin)

In an animal study, oral administration of quercetin (50 mg per 2.2 pounds of body weight) at the same time as cyclosporine decreased the absorption of cyclosporine by 43%. However, in a study of healthy human volunteers, supplementing with quercetin along with cyclosporine significantly increased blood levels of cyclosporine, when compared with administering cyclosporine alone. Because the effect of quercetin supplementation on cyclosporine absorption or utilization appears to be unpredictable, individuals taking cyclosporine should not take quercetin without the supervision of a doctor.

References

1. Hsiu SL, Hou YC, Wang YH, et al. Quercetin significantly decreased cyclosporin oral bioavailability in pigs and rats. *Life Sci* 2002;72:227-35.
2. Choi JS, Choi BC, Choi KE. Effect of quercetin on the pharmacokinetics of oral cyclosporine. *Am J Health Syst Pharm* 2004;61:2406-9.

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Although the drug information in this product is extensive, it does not include every drug-nutrient or drug-herb interaction. Therefore, if a drug is not mentioned, drug-food, drug-nutrient, or drug-herb interactions may still exist. Finally, new interactions discovered between published updates will appear in the next published update.

For these reasons, it is **not** sufficient to rely solely on the information presented here. It is always wise for people seeking information about interactions between a prescription drug and food, specific nutrients, or herbs to talk with their pharmacist, prescribing physician, or both.