



Calcium-D-glucarate *Calcium glucarate, Saccharic acid, Glucaric acid*

Common Indications:

- Decrease the risk of developing hormonally dependent cancers, including breast, prostate and colon
- Regulate healthy estrogen metabolism
- Maintain healthy lipid levels

General Comments:

The human body produces very low levels of D-glucaric acid naturally and can also obtain it from eating fruits and vegetables. The calcium salt of D-glucaric acid is Calcium-D-Glucarate which is valuable in its ability to inhibit beta-glucuronidase, an enzyme in the gut that can release bound hormones thus increasing risk of hormone based cancers. Oral supplementation of Calcium-D-Glucarate may decrease cancer risk by helping to bind up hormones in the gut and assist in its removal.

Benefits & Mechanism of Action

Decrease the risk of developing hormonally dependent cancers, including breast, prostate and colon

Oral supplementation of calcium-D- glucarate has been reported to inhibit beta-glucuronidase, an enzyme produced by colonic microflora and involved in Phase II liver detoxification. Calcium-D-glucarate increases glucuronidation and excretion of potentially toxic compounds through phase II detoxification. Elevated beta- glucuronidase activity is associated with an increased risk for various cancers, particularly hormone-dependent cancers such as breast, prostate, and colon cancers.⁴ Inhibition of beta-glucuronidase ultimately results in potentially decreasing the risk of carcinogenesis.^{5,6,7}

Regulate healthy estrogen metabolism

Prolonged exposure of estrogen can increase the risk of developing a hormone sensitive cancer. Supplementation with calcium-D-glucarate increases glucuronidation. Glucuronidation of estrogen allows excess estrogen to be eliminated from the body, reducing risk.

Maintain healthy lipid levels

By reducing the beta-glucuronidase viability and activity of intestinal bacteria, salts of D-glucaric acid have been reported to enhance enterohepatic circulation and reduce steady state levels of cholesterol synthesis, resulting in decreased serum lipid levels and healthy estrogen metabolism.^{8,9}

Dose: 1,500 - 3,000 mg daily in divided doses.

Symptoms of Deficiency:

Calcium-D-glucarate is not an essential nutrient so no deficiency state exists. However, since glucaric acid is only produced in small amounts by humans, it is important that dietary intake be adequate.

Conditions that leave a patient with an increased need for calcium-D-glucarate include:

- Having a diet low in fruits and cruciferous vegetables

Cautions & Side Effects: There is no known toxicity when using calcium-D-glucarate as a dietary supplement.

Medication interactions

Medications with decreased effects while taking calcium-D-glucarate include:

- Drugs metabolized via glucuronidation - supplementation with calcium-D-glucarate will increase metabolism and excretion

Food Sources: D-glucaric acid is found in many vegetables and fruits, including apples, Brussels sprouts, broccoli, cabbage, and bean sprouts.

Nutrient Interactions:

Resveratrol

Calcium-D-glucarate appears to work synergistically with resveratrol, increasing the antioxidant effects of resveratrol in doses where it was shown to be ineffective as a lone supplement.¹⁰

References:

General Comments

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Decrease the risk of developing hormonally dependent cancers

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Maintain healthy lipid levels

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Nutrient Interactions

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