

NATURAL MEDICINES
COMPREHENSIVE DATABASE

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CALCIUM D-GLUCARATE

Also Known As:

Calcio D-Glucarato, Calcium Glucarate, Calcium-D Glucarate, Calcium-D-Glucarate, D-Glucarate (GA), Glucarate de Calcium.

CAUTION: See separate listing for Calcium.

Scientific Name:

D-glucaro-1,4-lactone (1,4 GL).

People Use This For:

Orally, calcium D-glucarate is used for preventing breast, prostate, and colon cancer; and for removing carcinogens, toxins, and steroid hormones from the body.

Safety:

There is insufficient reliable information available about the safety of calcium D-glucarate. Pregnancy and Lactation: Insufficient reliable information available; avoid using.

Effectiveness:

There is insufficient reliable information available about the effectiveness of calcium D-glucarate.

Mechanism of Action:

Glucaric acid is combined with calcium to form calcium D-glucarate. Glucaric acid is found in tissues and body fluids. Glucaric acid is also found in foods such as fruits and vegetables including oranges, apples, Brussels sprouts, broccoli, and cabbage (772, 3952). Dietary sources provide from 1.12-1.73 mg/100 grams (broccoli and potatoes) to a high of 4.53 mg/100 grams (oranges) (772).

There is a lot of interest in using calcium D-glucarate for preventing estrogen-related cancer such as breast cancer and other hormone-related cancers. Calcium D-glucarate is thought to decrease estrogen levels by affecting estrogen's elimination. Estrogen is normally metabolized hepatically in phase II metabolism by combining with glucuronic acid. It's then excreted in the bile, but a bacterial enzyme in the intestine called beta-glucuronidase normally breaks the estrogen-glucuronide bond, allowing estrogen to be reabsorbed. Calcium D-glucarate works at this step by inhibiting beta-glucuronidase. Blocking this enzyme is thought to decrease the amount of estrogen that is reabsorbed and lower circulating estrogen levels. There is some evidence that beta-glucuronidase activity might be increased in patients with hormone-dependent cancers like breast and prostate cancer

(773, 774). Dietary glucarate can inhibit beta-glucuronidase activity and inhibits animal models of mammary tumor development (775). In vitro, D-glucarate decreases tumor cell proliferation (776). Urinary excretion of D-glucaric acid may be an indicator of drug metabolizing enzyme activity in people with impaired renal function (778).

Adverse Reactions:

None reported.

Interactions with Herbs & Supplements:

None known.

Interactions with Drugs:

ALCOHOL (Ethanol)

Interaction Rating = **Moderate** Be cautious with this combination.

Severity = Moderate • Occurrence = Possible • Level of Evidence = B

Theoretically, concomitant use with alcohol might decrease calcium D-glucarate activity. There is some evidence that urinary excretion of D-glucarate is increased in people consuming alcohol (779).

GLUCURONIDATED DRUGS

Interaction Rating = **Moderate** Be cautious with this combination.

Severity = Moderate • Occurrence = Possible • Level of Evidence = B

Theoretically, calcium D-glucarate might increase the clearance of drugs that undergo glucuronidation. Some of these drugs include acetaminophen, atorvastatin (Lipitor), diazepam (Valium), digoxin, entacapone (Comtan), estrogen, irinotecan (Camptosar), lamotrigine (Lamictal), lorazepam (Ativan), lovastatin (Mevacor), meprobamate, morphine, oxazepam (Serax), and others (772, 3952).

KANAMYCIN

Interaction Rating = **Minor** Be watchful with this combination.

Severity = Insignificant • Occurrence = Possible • Level of Evidence = D

Theoretically, D-glucarate may increase the rate of kanamycin elimination and possibly reduce the risk of drug-induced renal impairment (777).

Interactions with Foods:

ALCOHOL (Ethanol): Theoretically, concomitant use with alcohol might decrease calcium D-glucarate activity. There is some evidence that urinary excretion of D-glucarate is increased in people consuming alcohol (779).

Interactions with Lab Tests:

None known.

Interactions with Diseases or Conditions:

None known.

Dosage/Administration:

No typical dosage.

Editor's Comments:

None.

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