Discussion

Ingestion of supplemental Calcium D-glucarate increases net glucuronidation and the subsequent elimination of certain mutagenic compounds. Glucuronidation, the most important of the Phase 2 detoxification pathways both quantitatively and qualitatively, is the pathway used by estrogens and androgens, some steroid hormones and lipid-soluble toxins such as polycyclic aromatic hydrocarbons, some nitrosamines, heterocyclic amines and aromatic amines. This phase also represents a major means of converting most drugs to water-soluble substances that can be excreted. Glucuronide conjugates are eliminated via the urine or bile. More than two decades ago researchers found that serum estradiol levels in rats fed a calcium D-glucarate-fortified diet declined approximately 23%; while there was more than a 50% decrease in urinary 17-ketosteroid excretion.¹

Beta-glucuronidase, an enzyme produced by intestinal flora, cleaves glucuronic acid from the glucuronide conjugate allowing the toxins freed up in this process to get reabsorbed by the ileal mucosa, re-exposing the body for prolonged periods, thus increasing the potential for harm. Calcium D-glucarate indirectly inhibits beta-glucuronidase activity in the intestine, thereby preventing deconjugation and reabsorption of toxins and increasing their elimination.

In animals, a single dose of oral calcium D-glucarate results in a 50% inhibition of beta-glucuronidase for 5 hours.² Calcium D-glucarate does not inhibit beta-glucuronidase directly. Taken orally it dissolves in the stomach and forms D-glucaric acid, from which is derived the potent beta-glucuronidase inhibitor, D-glucaro-1,4-lactone. Unfortunately, the body rapidly clears D-glucaro-1,4-lactone. However, oral calcium D-glucarate can be considered a sustained release form of the D-glucaro-1,4-lactone.³

Although the mechanism of antioxidant action is as yet unknown, it is also worthy to note that the protective effects of D-glucaro-1,4-lactone against oxidative/nitrative modifications of plasma proteins have been demonstrated.⁴
**Supplement Facts**

**Serving Size:** 1 Capsule  
**Servings Per Container:** 90

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>% Daily Value</th>
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<tr>
<td>Calcium D-Glucarate</td>
<td>500 mg</td>
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**** Daily value not established.

**Other Ingredients:** Vegetable capsule (HPMC and water), Cellulose and Vegetable Stearines.

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**Dosing**

Take one or more capsules per day. There does not appear to be typical dosing with this supplement. Avoid taking with alcohol which theoretically may decrease the activity of the Calcium D-glucurate.  

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### References


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**Cautions:**

Drug interaction is theoretically possible with drugs that are cleared via glucuronidation.  

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The information contained in this paper has not been evaluated by the FDA. The associated product is not intended to diagnose, treat, cure or prevent any disease.