



# LKT Laboratories, Inc.

## 20S-Ginsenoside Rg3

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### Product Information

Product ID G3552

CAS No. 14197-60-5

Chemical Name

Synonym Ginsenoside Rg3

Formula  $C_{42}H_{72}O_{13}$

Formula Wt. 785.01

Melting Point

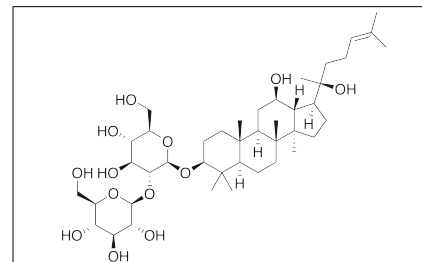
Purity  $\geq 98\%$

Solubility

Store Temp 4°C

Ship Temp Ambient

**Description** Ginsenoside Rg3 is a triterpene saponin found in *Panax* that exhibits neuromodulatory, cognition enhancing, anti-inflammatory, antioxidative, anti-angiogenic, and anticancer activities. Ginsenoside Rg3 activates KCNQ1/Kv7.1 K<sup>+</sup> channels and the  $\gamma 2$  subunit of GABA-A receptors and inhibits the  $\alpha 10$  subunit of nicotinic acetylcholine receptors (nAChRs). In animal models, ginsenoside Rg3 decreases expression of TNF- $\alpha$ , IL-1 $\beta$ , and COX-2 in the hippocampus, improving learning and memory deficits. In vitro, ginsenoside Rg3 prevents LPS-induced upregulation of TNF- $\alpha$ , IL-1 $\beta$ , and IL-6 levels and decreases activation of microglia. In other animal models, this compound decreases oxidative stress by increasing activity of catalase, superoxide dismutase (SOD), and lysozyme and decreasing levels of NO and malondialdehyde. Ginsenoside Rg3 also exhibits anti-angiogenic benefit, inhibiting VEGF/p38/ERK signaling to inhibit tubular formation and migration of endothelial progenitor cells. In osteosarcoma cells, this compound increased DNA damage by inducing strand breaks into double-stranded DNA.



### Pricing and Availability

**Bulk quantities available upon request**

| Product ID | Size  | List Price |
|------------|-------|------------|
| G3552      | 5 mg  | \$171.30   |
| G3552      | 10 mg | \$296.00   |
| G3552      | 25 mg | \$591.70   |

**References** Zhang YH, Li HD, Li B, et al. Ginsenoside Rg3 induces DNA damage in human osteosarcoma cells and reduces MNNG-induced DNA damage and apoptosis in normal human cells. *Oncol Rep.* 2014 Feb;31(2):919-25. PMID: 24337872.

Lee B, Sur B, Park J, et al. Ginsenoside rg3 alleviates lipopolysaccharide-induced learning and memory impairments by anti-inflammatory activity in rats. *Biomol Ther (Seoul).* 2013 Sep 30;21(5):381-90. PMID: 24244826.

Lee BH, Choi SH, Hwang SH, et al. Effects of ginsenoside Rg3 on  $\alpha 9\alpha 10$  nicotinic acetylcholine receptor-mediated ion currents. *Biol Pharm Bull.* 2013;36(5):812-8. PMID: 23649337.

Lee BH, Kim HJ, Chung L, et al. Ginsenoside Rg<sub>3</sub> regulates GABAA receptor channel activity: involvement of interaction with the  $\gamma_2$  subunit. *Eur J Pharmacol.* 2013 Apr 5;705(1-3):119-25. PMID: 23499684.

Park SM, Choi MS, Sohn NW, et al. Ginsenoside Rg3 attenuates microglia activation following systemic lipopolysaccharide treatment in mice. *Biol Pharm Bull.* 2012;35(9):1546-52. PMID: 22975507.

Wei X, Su F, Su X, et al. Stereospecific antioxidant effects of ginsenoside Rg3 on oxidative stress induced by cyclophosphamide in mice. *Fitoterapia.* 2012 Jun;83(4):636-42. PMID: 22310172.

Kim JW, Jung SY, Kwon YH, et al. Ginsenoside Rg3 attenuates tumor angiogenesis via inhibiting bioactivities of endothelial progenitor cells. *Cancer Biol Ther.* 2012 May;13(7):504-15. PMID: 22406998.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.