



LKT Laboratories, Inc.

Castanospermine

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Product Information

Product ID C0275

CAS No. 79831-76-8

Chemical Name

Synonym

Formula $C_8H_{15}NO_4$

Formula Wt. 189.21

Melting Point 215

Purity $\geq 98\%$

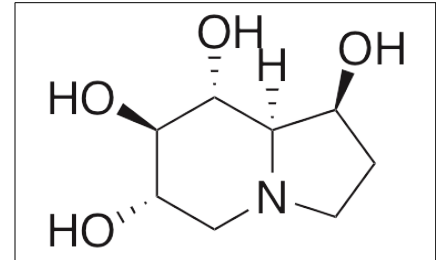
Solubility 20 mg/ml HCl

Store Temp 4°C

Ship Temp Ambient

Description

Castanospermine acts as an inhibitor of N-glycosylation, inhibiting O-GlcNAcase, resulting in immunosuppressive, anti-inflammatory, and antiviral activities. In leukocytes and endothelial cells, castanospermine decreases expression of cellular adhesion molecules ICAM-1, ICAM-2, L-selectin, LFA-1 α , VLA-4, Mac-1, and CR4. Castanospermine inhibits metastasis of melanoma cells through a mechanism that involved initial tumor cell arrest. In other cellular models, castanospermine increases secretion of misfolded secretory protein $\alpha 1$ antitrypsin Z. In animal models of arthritis, castanospermine decreases release of inflammatory markers into the synovium, preventing the development of arthritis when given as a pre-treatment and inhibiting disease progression when given after onset. Alteration of glycoprotein processing also inhibits viral replication of the Moloney murine leukemia virus.



Bulk quantities available upon request

Product ID Size

C0275 5 mg

C0275 10 mg

C0275 50 mg

C0275 100 mg

References

Hibberd AD, Trevillian PR, Clark DA, et al. The effects of Castanospermine, an oligosaccharide processing inhibitor, on mononuclear/endothelial cell binding and the expression of cell adhesion molecules. *Transpl Immunol.* 2012 Aug;27(1):39-47. PMID: 22647882.

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Marcus NY, Perlmutter DH. Glucosidase and mannosidase inhibitors mediate increased secretion of mutant alpha1 antitrypsin Z. *J Biol Chem.* 2000 Jan 21;275(3):1987-92. PMID: 10636901.

Willenborg DO, Parish CR, Cowden WB. Inhibition of adjuvant arthritis in the rat by phosphosugars and the alpha-glucosidase inhibitor castanospermine. *Immunol Cell Biol.* 1992 Dec;70 (Pt 6):369-77. PMID: 1289239.

Sunkara PS, Bowlin TL, Liu PS, et al. Antiretroviral activity of castanospermine and deoxyjirimycin, specific inhibitors of glycoprotein processing. *Biochem Biophys Res Commun.* 1987 Oct 14;148(1):206-10. PMID: 2960321.

Humphries MJ, Matsumoto K, White SL, et al. Inhibition of experimental metastasis by castanospermine in mice: blockage of two distinct stages of tumor colonization by oligosaccharide processing inhibitors. *Cancer Res.* 1986 Oct;46(10):5215-22. PMID: 3093061.

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