

Product Information

Castanospermine from *Castanospermum australe* seeds

Product Number **C 3784**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₈H₁₅NO₄
Molecular Weight: 189.2
CAS Number: 79831-76-8
Melting Point: 212-215 °C (with decomposition)¹
Specific Rotation: +79.7° (9.3 mg/ml, H₂O, 25 °C)¹
pK_a: 6.09¹
Synonyms: [1S-(1α,6β,7α,8β,8αβ)]-octahydro-1,6,7,8-indolizinetetrol; 1,6,7,8-tetrahydrooctahydroindolizine; (1S,6S,7R,8R,8aR)-1,6,7,8-tetrahydroxyindolizidine

Castanospermine is a polyhydroxy alkaloid that occurs naturally in the seeds of the Australian leguminous tree *Castanospermum australe*.¹ It is an inhibitor of various enzymes that mediate glycoside hydrolysis.²⁻⁴ It also blocks leukocyte passage through the subendothelial basement membrane.⁵ The activity of castanospermine against HIV in the glycosylation stage of replication has been studied.^{6,7} A review of various indolizidine and quinolizidine alkaloids, including castanospermine, that discusses isolation, structure determination, synthesis, chemical transformations and biological activity has been published.⁸

A study of cultured, influenza virus-infected CHO cells has used castanospermine (1 mM) to probe the degradative pathway of misfolded and incompletely assembled proteins.⁹ Modulation of dihydropyridine binding to cultured neonatal rat heart cells in the presence of castanospermine (0.1-0.5 mM) has been studied.¹⁰ Castanospermine (1 mM) has been included with cultured *Sf* 21 cells to study the interactions of lipoprotein lipase with calreticulin.¹¹

The analysis of castanospermine and other alkaloids from *Castanospermum australe* using an initial preparative LC fractionation, followed by thermospray LC-MS, has been described.¹²

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in 1 N HCl (20 mg/ml), yielding a clear, colorless to faint yellow solution.

References

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8. Michael, J. P., Indolizidine and quinolizidine alkaloids. *Nat. Prod. Rep.*, **20(5)**, 458-475 (2003).
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10. Henning, U., et al., Influence of glycosylation inhibitors on dihydropyridine binding to cardiac cells. *Mol. Cell. Biochem.*, **160-161**, 47-52 (1996).
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