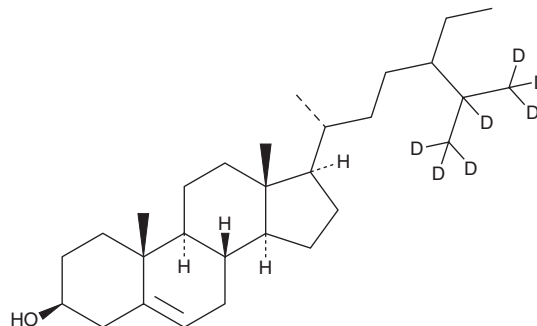


PRODUCT INFORMATION



Sitosterol-d₇ Item No. 45691

CAS Registry No.: 2260669-28-9
Formal Name: (3β,24ξ)-stigmast-5-en-25,26,26,26,27,27,27-d₇-3-ol
MF: C₂₉H₄₃D₇O
FW: 421.8
Chemical Purity: ≥98% (Sitosterol)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₇); ≤1% d₀
Supplied as: A 1 mg/ml solution in ethyl acetate
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Sitosterol-d₇ is intended for use as an internal standard for the quantification of β-sitosterol and γ-sitosterol by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Sitosterol-d₇ is a mixture of the diastereomers β- and γ-sitosterol that contain seven deuterium atoms. β- and γ-sitosterol are phytosterols found in a variety of plants.^{1,2} β-sitosterol has diverse activities, including antimicrobial, antioxidant, anticancer, and anti-inflammatory effects, while γ-sitosterol has anticancer activity. β-sitosterol has been used in place of, or in addition to, cholesterol in lipid nanoparticles (LNPs), resulting in improved transfection efficiency and cargo delivery to immune cells.^{3,4}

References

1. Khan, Z., Nath, N., Rauf, A., *et al.* Multifunctional roles and pharmacological potential of β-sitosterol: Emerging evidence toward clinical applications. *Chem. Biol. Interact.* **365**, 110117 (2022).
2. Teodhora., Hendriani, R., Sumiwi, S.A., *et al.* *Peperomia pellucida* (L.) Kunth: A decade of ethnopharmacological, phytochemical, and pharmacological insights (2014-2025). *J. Exp. Pharmacol.* **17**, 417-454 (2025).
3. Han, Y., Wang, Y., Gao, X., *et al.* Engineering lipid nanoparticles for precision RNA delivery: Design principles, targeting strategies, and clinical prospects. *Cancer Nexus* **2(2)**, e70021 (2026).
4. Chilumula, S., Hanchate, P., Patri, S.V., *et al.* Influence of structural modifications in synthetic vectors of lipid adjuvants on mRNA vaccine delivery. *Biomater. Sci.* **13(18)**, 4952-4969 (2025).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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