

PRODUCT INFORMATION



25-hydroxy Cholesterol-d₂

Item No. 44828

Formal Name: (3S,8S,9S,10R,13R,14S,17R)-17-((R)-6-hydroxy-6-methylheptan-2-yl)-10,13-dimethyl-2,3,4,7,8,9,10,11,12,13,14,15,16,17-tetradecahydro-1H-cyclopenta[a]phenanthren-7,7-d₂-3-ol

MF: C₂₇H₄₄D₂O₂

FW: 404.7

Chemical Purity: ≥95% (25-hydroxy cholesterol)

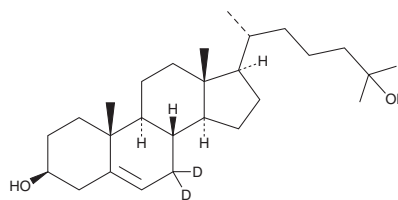
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₂); ≤1% d₀

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

25-hydroxy Cholesterol-d₂ is intended for use as an internal standard for the quantification of 25-hydroxy cholesterol (Item No. 11097) 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).

25-hydroxy Cholesterol-d₂ is supplied as a solid. A stock solution may be made by dissolving the 25-hydroxy cholesterol-d₂ in the solvent of choice, which should be purged with an inert gas. 25-hydroxy Cholesterol-d₂ is soluble in organic solvents such as chloroform and methanol. 25-hydroxy Cholesterol-d₂ is soluble (≥10 mg/ml) in chloroform and sparingly soluble (1-10 mg/ml) in methanol.

Description

25-hydroxy Cholesterol is an oxysterol.¹ It is formed from cholesterol by cholesterol-25-hydroxylase, and its production can be induced by inflammation or infection.² 25-hydroxy Cholesterol suppresses endogenous cholesterol synthesis by binding to insulin-induced gene (INSIG) proteins and preventing sterol regulatory element binding proteins (SREBPs) from being transported to the Golgi. It inhibits IgA class switching induced by LPS and various cytokines in B cells (IC₅₀ = ~50 nM).³ 25-hydroxy Cholesterol inhibits replication of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in Vero cells (EC₅₀ = 3.675 μM) and reduces increases in viral protein production in infected Vero cells when used prior to infection.⁴ It reduces viral RNA loads in the lung and trachea in a mouse model of SARS-CoV-2 infection when administered at a dose of 100 mg/kg per day. Serum levels of 25-hydroxy cholesterol are increased in patients with SARS-CoV-2.⁵

References

1. Adams, C.M., Reitz, J., De Brabander, J.K., *et al.* *J. Biol. Chem.* **279**(50), 52772-52780 (2004).
2. Cystger, J.G., Dang, E.V., Reboldi, A., *et al.* *Nat. Rev. Immunol.* **14**(11), 731-743 (2014).
3. Bauman, D.R., Bitmansour, A.D., McDonald, J.G., *et al.* *Proc. Natl. Acad. Sci. USA* **106**(39), 16764-16769 (2009).
4. Zu, S., Deng, Y.-Q., Zhou, C., *et al.* *Cell Res.* **30**(11), 1043-1045 (2020).
5. Asano, T., Wakabayashi, T., Kondo, Y., *et al.* *J. Clin. Lipidol.* **17**(1), 78-86 (2023).

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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