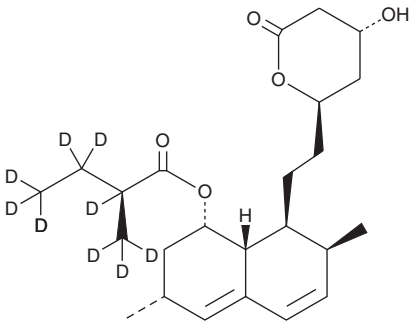
PRODUCT INFORMATION

Lovastatin-d_9

Item No. 26461

Formal Name:	2S-(methyl-d_3)-butanoic acid-2,3,3,4,4,4-d_6, 1S,2,3R,7S,8S,8aR-hexahydro-3,7-dimethyl-8-[2-[(2R,4R)-tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl]ethyl]-1-naphthalenyl ester
MF:	$C_{24}H_{27}D_9O_5$
FW:	413.6
Chemical Purity:	≥95% (Lovastatin; mixture of diastereomers)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_9); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

Lovastatin-d_9 is intended for use as an internal standard for the quantification of lovastatin (Item No. 10010338) 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).

Lovastatin-d_9 is supplied as a solid. A stock solution may be made by dissolving the lovastatin-d_9 in the solvent of choice, which should be purged with an inert gas. Lovastatin-d_9 is slightly soluble in chloroform and methanol.

Description

Lovastatin-d_9 is intended for use as an internal standard for the quantification of lovastatin (Item No. 10010338) by GC- or LC-MS. Lovastatin is a fungal metabolite that has been found in *A. terreus* and an inhibitor of HMG-CoA reductase (K_i = 1.4 nM).[1,2] It is also a prodrug form of the HMG-CoA reductase inhibitor lovastatin hydroxy acid (Item No. 10010339).[2] Lovastatin (8 mg/kg per day) reduces plasma cholesterol levels in dogs. It suppresses TNF-induced NF-κB activation (IC_{50} = ~15 µM) and potentiates apoptosis in human myeloid leukemia cells.[3] Lovastatin also increases cellular lipid peroxidation and decreases glutathione peroxidase 4 (GPX4) levels in cancer cells.[4] Formulations containing lovastatin have been used in the treatment of hypercholesterolemia.

References

1. Endo, A. The discovery and development of HMG-CoA reductase inhibitors. *J. Lipid Res.* **33(11)**, 1569-1582 (1992).
2. Alberts, A.W., Chen, J., Kuron, G., *et al.* Mevinolin: A highly potent competitive inhibitor of hydroxymethylglutaryl-coenzyme A reductase and a cholesterol-lowering agent. *Proc. Natl. Acad. Sci. USA* **77(7)**, 3957-3961 (1980).
3. Ahn, K.S., Sethi, G., and Aggarwal, B.B. Reversal of chemoresistance and enhancement of apoptosis by statins through down-regulation of the NF-κB pathway. *Biochem. Pharmacol.* **75(4)**, 907-913 (2008).
4. Viswanathan, V.S., Ryan, M.J., Dhruv, H.D., *et al.* Dependency of a therapy-resistant state of cancer cells on a lipid peroxidase pathway. *Nature* **547(7664)**, 453-457 (2017).

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