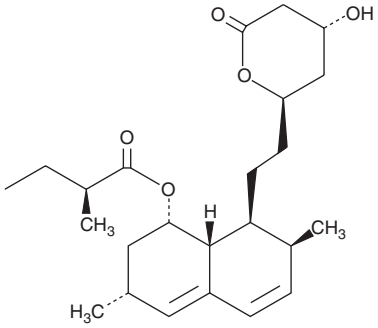
PRODUCT INFORMATION

Lovastatin

Item No. 10010338

CAS Registry No.:	75330-75-5
Formal Name:	2S-methyl-butanoic acid, 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
Synonyms:	(+)-Mevinolin, Monacolin K, NSC 633781
MF:	$C_{24}H_{36}O_5$
FW:	404.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 238 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Synthetic



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

Laboratory Procedures

Lovastatin is supplied as a crystalline solid. A stock solution may be made by dissolving the lovastatin in the solvent of choice, which should be purged with an inert gas. Lovastatin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of lovastatin in ethanol and DMSO is approximately 20 mg/ml and approximately 15 mg/ml in DMF.

Lovastatin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, lovastatin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Lovastatin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

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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