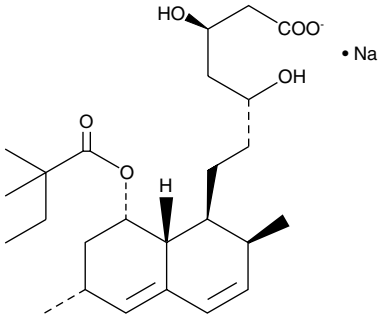
Product Information

Simvastatin (sodium salt)

Item No. 10010345

CAS Registry No.: 101314-97-0
Formal Name: (βR,δR,1S,2S,6R,8S,8aR)-8-(2,2-dimethyl-1-oxobutoxy)-1,2,6,7,8,8a-hexahydro-β,δ-dihydroxy-2,6-dimethyl-1-naphthaleneheptanoic acid, monosodium salt
Synonym: Zocor™
MF: $C_{25}H_{39}O_6 \bullet Na$
FW: 458.6
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 231, 238, 246 nm



Laboratory Procedures

For long term storage, we suggest that simvastatin (sodium salt) be stored as supplied at -20°C. It should be stable for at least two years.

Simvastatin (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the simvastatin (sodium salt) in the solvent of choice. Simvastatin (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of simvastatin (sodium salt) in these solvents is approximately 10 mg/ml.

Simvastatin (sodium salt) is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

HMG-CoA reductase is the rate-limiting enzyme in the cholesterol biosynthetic pathway and the target of the "statin" class of cholesterol-lowering drugs.[1] Simvastatin is a competitive inhibitor of HMG-CoA reductase with a K_i of 0.12 nM for the hydrolyzed, open ring form of the molecule.[2] Simvastatin is marketed under the trade name Zocor™ and is often prescribed in combination with ezetimibe (Zetia) to treat dyslipidemia. This drug combination is known commercially as Vytorin or Inegy. In dogs, after 18 days of treatment with simvastatin at a dose of 8 mg/kg per day, plasma cholesterol levels were reduced by 33%.[3] Simvastatin also suppresses TNF-induced NF-κB activation (IC_{50} ~ 13 µM), which potentiates apoptosis in human myeloid leukemia cells and thus, may be useful in treating cancer.[4]

References

1. Tobert, J.A. Lovastatin and beyond: The history of the HMG-CoA reductase inhibitors. *Nat. Rev. Drug Discov.* **2**, 517-526 (2003).
2. Corsini, A., Maggi, F.M., and Catapano, A.L. Pharmacology of competitive inhibitors of HMG-CoA reductase. *Pharmacol. Res.* **31(1)**, 9-27 (1995).
3. Chao, Y., Chen, J.S., Hunt, V.M., *et al.* Lowering of plasma cholesterol levels in animals by lovastatin and simvastatin. *Eur. J. Clin. Pharmacol.* **40**, S11-S14 (1991).
4. 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**, 907-913 (2008).

Related Products

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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