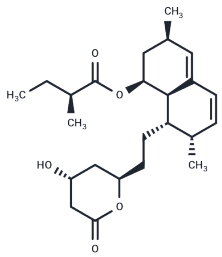
Data Sheet (Cat.No.T1207)

TargetMol

Lovastatin

Chemical Properties



CAS No. : 75330-75-5

Formula: C24H36O5

Molecular Weight: 404.54

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Lovastatin (MK-803) is an HMG-CoA reductase inhibitor (IC50=3.4 nM). Lovastatin lowers cholesterol and is commonly used as a lipid-lowering agent in the treatment of hypercholesterolemia.
Targets(IC50)	Ferroptosis,HMG-CoA Reductase,Autophagy
In vitro	**METHODS**: PEL cell lines BC3 and BCBL1 were treated with Lovastatin (3-30 μM) for 24-48 h. Cell viability was measured using Trypan blue exclusion. **RESULTS**: A dose- and time-dependent decrease in cell viability after Lovastatin treatment was observed in both PEL cell lines. [1] **METHODS**: The human breast cancer cell lines MDAMB231 and MDAMB468 were treated with Lovastatin (8 μg/mL) for 48 h. The expression levels of target proteins were detected using Western Blot. **RESULTS**: Several proteins involved in the regulation of cell proliferation and cell cycle activity present in breast cancer cells were significantly altered when exposed to Lovastatin. Changes in the expression of two cell cycle regulatory proteins, prohibitin and MCM7, which are associated with E2F activity, were also detected. [2]
In vivo	**METHODS**: To assay antitumor activity in vivo, Lovastatin (25-50 mg/kg) was administered intraperitoneally to C3(1)/TAg transgenic mice in a breast cancer model three times per week for 4-12 weeks. **RESULTS**: Four weeks of treatment with Lovastatin did inhibit precancerous mammary intraepithelial neoplasia (MIN) formation in vivo, but did not inhibit invasive carcinoma formation in a C3(1)/SV40-TAg transgenic model of mammary carcinomas. [3]
Cell Research	Hela cells are treated with lovastatin (0, 5, 10, 20, 40, 80, 160, 320 μg/mL) for 24 h. Cells treated with culture medium serves as a negative control. cell viability is measured using the MTT based colorimetric assay [2].

Solubility Information

Solubility	DMSO: 45 mg/mL (111.24 mM),Sonication is recommended. Ethanol: 20.2 mg/mL (49.93 mM),Heating is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.05 mg/mL (10.01 mM),Suspension. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4719 mL	12.3597 mL	24.7194 mL
5 mM	0.4944 mL	2.4719 mL	4.9439 mL
10 mM	0.2472 mL	1.236 mL	2.4719 mL
50 mM	0.0494 mL	0.2472 mL	0.4944 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Santarelli R, et al. Lovastatin reduces PEL cell survival by phosphorylating ERK1/2 that blocks the autophagic flux and engages a cross-talk with p53 to activate p2IUBMB Life. 2021 Jul;73(7):968-977.
Zeng X, Zhu S, Lu W, et al. Target identification among known drugs by deep learning from heterogeneous networks. Chemical Science. 2020, 11(7): 1775-1797.
Yang C, Fan S, Wang X, et al. Optimize the combination regimen of Trastuzumab and Nab-paclitaxel in HER2-positive tumors via modulating Caveolin-1 expression by lovastatin. Asian Journal of Pharmaceutical Sciences. 2022
Klawitter J, et al. Effects of lovastatin on breast cancer cells: a proteo-metabonomic study. Breast Cancer Res. 2010;12(2):R16.
Klawitter J, et al. Effects of lovastatin on breast cancer cells: a proteo-metabonomic study. Breast Cancer Res. 2010;12(2):R16.
Liu Q, Guo L, Qi H, et al. A MYBL2 complex for RRM2 transactivation and the synthetic effect of MYBL2 knockdown with WEE1 inhibition against colorectal cancer. Cell Death & Disease. 2021, 12(7): 1-11.
Wang D, Wang Y, Di X, et al.Cortical tension drug screen links mitotic spindle integrity to Rho pathway.Current Biology.2023
Rao S, et al. Proc Natl Acad Sci U S A, 1999, 96(14), 7797-7802.
Jakóbisiak M, et al. Proc Natl Acad Sci U S A. 1991 May 1;88(9):3628-32.
Li C, Yao Z, Ma L, et al.Lovastatin promotes the self-renewal of murine and primate spermatogonial stem cells. Stem Cell Reports.2023, 18(4): 969-984.
Tan X D, Luo C F, Liang S Y.Antihyperlipidemic drug rosuvastatin suppressed tumor progression and potentiated chemosensitivity by downregulating CCNA2 in lung adenocarcinoma.Journal of Chemotherapy.2024: 1-13.
Zeng X, Zhu S, Lu W, et al. Target identification among known drugs by deep learning from heterogeneous networks[J]. Chemical Science. 2020, 11(7): 1775-1797.
Wan M, Zhou J, Xue N, et al.Lovastatin-mediated pharmacological inhibition of Formin protein DIAPH1 suppresses tumor immune escape and boosts immunotherapy response.International Immunopharmacology.2025, 144: 113637.
In vivo vulnerabilities to GPX4 and HDAC inhibitors in drug-persistent versus drug-resistant BRAFV600E lung adenocarcinoma

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481