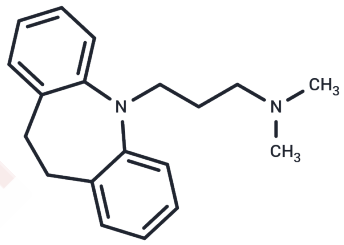
Data Sheet (Cat.No.T20025)

TargetMol

Imipramine

Chemical Properties



CAS No. :	50-49-7
Formula:	C19H24N2
Molecular Weight:	280.41
Storage:	Store under nitrogen Pure form: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	Imipramine (Dimipressin) is an orally active Fascin1 inhibitor with antidepressant and antitumor activity.Imipramine inhibits the 5-hydroxytryptamine transporter (IC50: 32 nM), induces apoptosis, and induces autophagy in U-87MG glioma cells.Imipramine has neuroprotective and immunomodulatory activities, inhibits TNT, and is used to label brain blood vessels.Imipramine is a neuroprotective and immunomodulatory compound. Imipramine has neuroprotective and immunomodulatory activities, inhibits invasion and migration of TNBC cells, and can be used to study breast cancer and epilepsy.
Targets(IC50)	Apoptosis,Autophagy,Serotonin Transporter
In vitro	In DLD-1, HCT-116, and SW-480 cell lines, Imipramine (0.5-300 μM; 3 days) inhibited cell viability, with HCT-116 being more sensitive to it compared to DLD-1 and SW-480[1].
In vivo	In male C57BL/6 mice (6-8 weeks old) exposed to repeated social defeat (RSD) and home cage control (HCC), Imipramine (20 mg/kg or 15 mg/kg; administered intraperitoneally or orally, daily for 24 days) reversed RSD-induced social avoidance behavior, significantly increasing interaction time, and significantly decreased stress-induced mRNA levels for IL-6 in brain microglia[4].

Solubility Information

Solubility	DMSO: 100 mg/mL (356.62 mM),Sonication 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: 5 mg/mL (17.83 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. 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	3.5662 mL	17.831 mL	35.6621 mL
5 mM	0.7132 mL	3.5662 mL	7.1324 mL
10 mM	0.3566 mL	1.7831 mL	3.5662 mL
50 mM	0.0713 mL	0.3566 mL	0.7132 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

Alburquerque-González B, et al. New role of the antidepressant imipramine as a Fascin1 inhibitor in colorectal cancer cells. Exp Mol Med. 2020 Feb;52(2):281-292.
Wang Y, Wang X, Wang X, et al. Imipramine impedes glioma progression by inhibiting YAP as a Hippo pathway independent manner and synergizes with temozolomide. Journal of Cellular and Molecular Medicine. 2021
Wang Y J, Liu L, Wang Y, et al. Imipramine exerts antidepressant-like effects in chronic stress models of depression by promoting CRTC1 expression in the mPFC. Brain Research Bulletin. 2020, 164: 257-268.
Jeon SH, et al. The tricyclic antidepressant imipramine induces autophagic cell death in U-87MG glioma cells. Biochem Biophys Res Commun. 2011 Sep 23;413(2):311-7.
Xia Z, et al. The antidepressants imipramine, clomipramine, and citalopram induce apoptosis in human acute myeloid leukemia HL-60 cells via caspase-3 activation. J Biochem Mol Toxicol. 1999;13(6):338-47.
Ramirez K, et al. Imipramine attenuates neuroinflammatory signaling and reverses stress-induced social avoidance. Brain Behav Immun. 2015 May;46:212-20.
Wang Y J, Liu L, Wang Y, et al. Imipramine exerts antidepressant-like effects in chronic stress models of depression by promoting CRTC1 expression in the mPFC[J]. Brain Research Bulletin. 2020, 164: 257-268.