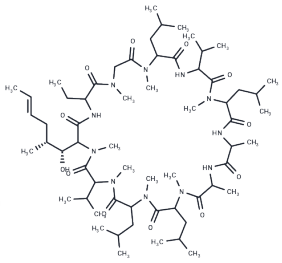
Data Sheet (Cat.No.T6459)

TargetMol

Cyclosporine

Chemical Properties



CAS No. : 79217-60-0

Formula: C62H111N11O12

Molecular Weight: 1202.61

Appearance: no data available

Storage: keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Cyclosporine is a calcineurin phosphatase pathway inhibitor, used as an immunosuppressant drug to prevent rejection in organ transplantation.
Targets(IC50)	Phosphatase
In vitro	Cyclosporine induces phenotypic changes, including invasiveness of non-transformed cells, by a cell-autonomous mechanism. Cyclosporine treatment of adenocarcinoma cells results in striking morphological alterations, including membrane ruffling and numerous pseudopodial protrusions, increased cell motility, and anchorage-independent (invasive) growth. [1] Cyclosporine (cyclosporin A, CsA) has potent immunosuppressive properties, reflecting its ability to block the transcription of cytokine genes in activated T cells. Cyclosporine through formation of a complex with cyclophilin inhibits the phosphatase activity of calcineurin, which regulates nuclear translocation and subsequent activation of NFAT transcription factors. Cyclosporine also blocks the activation of JNK and p38 signaling pathways triggered by antigen recognition, making CsA a highly specific inhibitor of T cell activation. [2] Cyclosporine-mediated inhibition of the biliary excretion of MPAG by the Mrp2 transporter is the mechanism responsible for the interaction between Cyclosporine and mycophenolate mofetil (MMF). [3] Cyclosporine inhibits biochemical and morphological differentiation of skeletal muscle cells while having a minimal effect on proliferation. [4]
In vivo	Cyclosporine enhances tumour growth in immunodeficient SCID-beige mice. [1] Cyclosporine inhibits muscle regeneration after induced trauma in mice. [4] Cyclosporine peaks at 1 hour in blood, spleen, and kidney, with higher concentrations in spleen and kidney than in blood. [5]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 93 mg/mL (77.33 mM),Sonication is recommended. DMSO: 93 mg/mL (77.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.8315 mL	4.1576 mL	8.3152 mL
5 mM	0.1663 mL	0.8315 mL	1.663 mL
10 mM	0.0832 mL	0.4158 mL	0.8315 mL
50 mM	0.0166 mL	0.0832 mL	0.1663 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.

Reference

Hojo M, et al. Nature, 1999, 397(6719), 530-534.
Wang F, Zou X, Zheng H, et al.Human epicardial organoids from pluripotent stem cells resemble fetal stage with potential cardiomyocyte-transdifferentiation.Cell & Bioscience.2025, 15(1): 1-15.
Matsuda S, et al. Immunopharmacology, 2000, 47(2-3), 119-125.
Hesselink DA, et al. Am J Transplant, 2005, 5(5), 1987-1994.
Abbott KL, et al. Mol Biol Cell, 1998, 9(10), 2905-2916.
Lang E, et al. Pain, 1996, 68(1), 151-155.