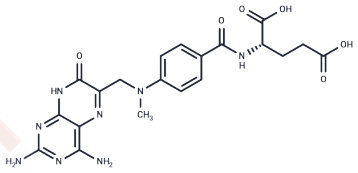
Data Sheet (Cat.No.T20339)

TargetMol

7-Hydroxymethotrexate

Chemical Properties



CAS No. : 5939-37-7

Formula: C20H22N8O6

Molecular Weight: 470.44

Storage: Store at low temperature
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	7-Hydroxymethotrexate is the major metabolite of Methotrexate.Methotrexate is an inhibitor of folic acid, inhibiting dihydrofolate reductase, which prevents the conversion of folic acid to tetrahydrofolate, and inhibiting DNA synthesis.Methotrexate is also an inhibitor of metabolism.
Targets(IC50)	Drug Metabolite
In vitro	With an affinity for DHFR markedly lower (>100-fold) than Methotrexate (MTX), 7-Hydroxymethotrexate (7-OHMTX)[1].
In vivo	Administered intravenously at a dose of 4 mg/kg, 7-Hydroxymethotrexate (7-OHMTX) exhibits a terminal half-life of 97.2 min and a total clearance value of 9.6 mL/min•mg[1].

Solubility Information

Solubility	DMSO: 0.66 mg/mL (1.4 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1257 mL	10.6283 mL	21.2567 mL
5 mM	0.4251 mL	2.1257 mL	4.2513 mL
10 mM	0.2126 mL	1.0628 mL	2.1257 mL
50 mM	0.0425 mL	0.2126 mL	0.4251 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

L Fahrig, et al. Pharmacokinetics of methotrexate (MTX) and 7-hydroxymethotrexate (7-OH-MTX) in rats and evidence for the metabolism of MTX to 7-OH-MTX. Cancer Chemother Pharmacol. 1989;23(3):156-60.
Ping Guo, et al. Determination of methotrexate and its major metabolite 7-hydroxymethotrexate in mouse plasma and brain tissue by liquid chromatography-tandem mass spectrometry. J Pharm Biomed Anal. 2007 Apr 11;43(5):1789-95.
Białk-Bielińska A, Mulkiewicz E, Stokowski M, Stolte S, Stepnowski P. Acute aquatic toxicity assessment of six anti-cancer drugs and one metabolite using biotest battery - Biological effects and stability under test conditions. Chemosphere. 2017 Dec;189:689-698. doi: 10.1016/j.chemosphere.2017.08.174. Epub 2017 Sep 21. PubMed PMID: 28968575.
Patel H, Giri P, Ghoghari A, Delvadia P, Syed M, Srinivas NR. Review of the bioanalytical methods for the determination of methotrexate and its metabolites in in vitro, preclinical and clinical studies: Case studies and perspectives. Biomed Chromatogr. 2017 Jan;31(1). doi: 10.1002/bmc.3849. Epub 2016 Oct 17. Review. PubMed PMID: 27623319.