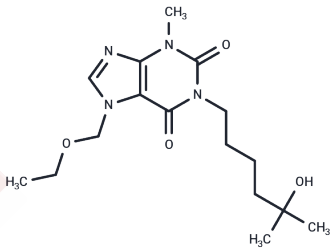
Data Sheet (Cat.No.T67965)

TargetMol

Torbafylline

Chemical Properties



CAS No. : 105102-21-4

Formula: C16H26N4O4

Molecular Weight: 338.4

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	Torbafylline, a xanthine derivative, is a phosphodiesterase (PDE) inhibitor that attenuates burn-induced protein hydrolysis in rat skeletal muscle through activation of the PDE4/cAMP/EPAC/PI3K/Akt pathway, and inhibits the enhanced ubiquitin-proteasome-dependent protein hydrolysis in skeletal muscle of cancer- and sepsis-prone rats.
Targets(IC50)	cAMP,PDE,PI3K
In vivo	Torbafylline (25 mg/kg per day; oral; three weeks) decreased fatigue to 68%. The blood flow in ligated muscles increased to a much smaller extent than in control muscles, and this smaller increase was attenuated by Torbafylline. A chronic decrease in the blood supply resulted in a significant shortening of the running time.[1] Torbafylline (25 mg/kg p.o.; 2 times a day; 2 weeks) decrease in running time was reversed by chronic treatment of Torbafylline. This improved performance may be explained by a decreased accumulation of lactate in muscles with a limited blood supply due to the effect of Torbafylline to increase the release of lactate from ischaemic muscles.[1]

Solubility Information

Solubility	DMSO: 25 mg/mL (73.88 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9551 mL	14.7754 mL	29.5508 mL
5 mM	0.591 mL	2.9551 mL	5.9102 mL
10 mM	0.2955 mL	1.4775 mL	2.9551 mL
50 mM	0.0591 mL	0.2955 mL	0.591 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

Okyayuz-Baklouti I. The effects of torbafylline on blood flow, pO2 and function of rat ischaemic skeletal muscle. Eur J Pharmacol. 1989;166(1):75-86.
Hudlicka O, et al. Effect of torbafylline on muscle blood flow, performance, and capillary supply in ischemic muscles subjected to varying levels of activity. Can J Physiol Pharmacol. 1994;72(7):811-817.
Joshi R, et al. Phosphodiesterase (PDE) inhibitor torbafylline (HWA 448) attenuates burn-induced rat skeletal muscle proteolysis through the PDE4/cAMP/EPAC/PI3K/Akt pathway. Mol Cell Endocrinol. 2014;393(1-2):152-16
Egginton S, et al. The effect of torbafylline on enzyme activities in fast and slow muscles with limited blood supply. Comp Biochem Physiol C Comp Pharmacol Toxicol. 1991;99(1-2):163-168.
Lucas-Héron B, et al. Effect of torbafylline on mitochondrial calmitine in mouse skeletal muscle regeneration after injection of a myotoxic drug. J Neurol Sci. 1993;118(1):97-100.
Koch H, et al. Correlation of function and energy metabolism in rat ischemic skeletal muscle by 31P-NMR spectroscopy: effects of torbafylline. J Med. 1993;24(1):47-66.