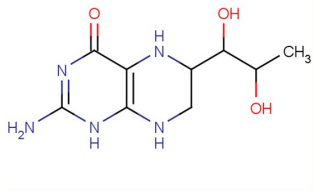
Data Sheet (Cat.No.T17056)

TargetMol
A DRUG SCREENING EXPERT

Tetrahydrobiopterin

Chemical Properties



CAS No.:	17528-72-2
Formula:	C9H15N5O3
Molecular Weight:	241.25
Appearance:	N/A
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	Tetrahydrobiopterin is a cofactor of the aromatic amino acid hydroxylases enzymes. It also acts as an essential cofactor for all nitric oxide synthase isoforms.
Targets(IC_{50})	Human Endogenous Metabolite: None
In vitro	Tetrahydrobiopterin supplementation obviously prevents hyperoxia-induced microglial activation by diminishing Iba-1 and TSP-1 expression and prevents microvascular injury in choroidal explants. MicMicroglial cell cultures under hyperoxia are supplemented or not with an effective dose of Tetrahydrobiopterin (100 μM). Exposure of microglial cells to hyperoxia-induced oxidative stress for 24 h reveals a robust increase in TSP-1 mRNA expression and protein compared to normoxia (21% O2) [1].
In vivo	LC-MS/MS analysis confirm a significant reduce by approximately 90% in the concentration levels of Tetrahydrobiopterin in retinal tissue from hph-1 mice (0.0009±0.0006; p<0.0001, 0.01±0.001; p<0.0001 and 2.45±0.40; p<0.005) compare to the WT group (0.014±0.001, 0.092±0.01, and 23.13±6.44) at P7, P14, and P22, respectively. To assess the levels of Tetrahydrobiopterin in the retina, three to five pools of retinas are collected from WT and hph-1mice at postnatal age 7, 14, and 22 and evaluated by LC-MS/MS [1].

Solubility Information

Solubility	DMSO: 50 mg/mL (207.25 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.145 mL	20.725 mL	41.451 mL
5 mM	0.829 mL	4.145 mL	8.29 mL
10 mM	0.415 mL	2.073 mL	4.145 mL
50 mM	0.083 mL	0.415 mL	0.829 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. Rivera JC, et al. Tetrahydrobiopterin (BH4) deficiency is associated with augmented inflammation and microvascular degeneration in the retina. J Neuroinflammation. 2017 Sep 6;14(1):181.

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