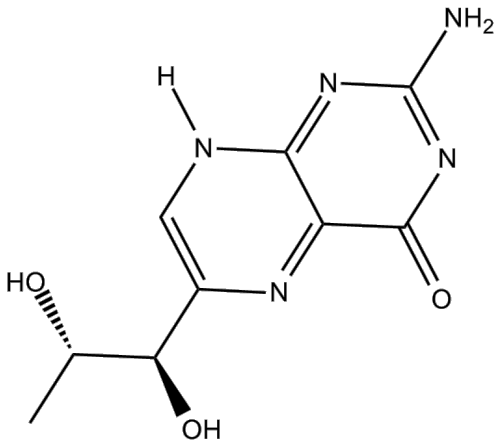
Product Data Sheet

Product Name: L-Biopterin
Cat. No.: GC16200

Chemical Properties

Cas. No.	22150-76-1		
Chemical Name	2-amino-6-[(1R,2S)-1,2-dihydroxypropyl]-4(1H)-pteridinone		
SMILES	NC(N=C1C2=NC([C@@H](O)[C@@H](O)C)=CN1[H])=NC2=O		
Formula	$C_9H_{11}N_5O_3$	M.Wt	237.2
Solubility	≤1mg/ml in DMSO;0.3mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

L-Biopterin is the oxidized form of tetrahydrobiopterin (BH4) [1].

Caution: Product has not been fully validated for medical applications. For research use only.

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Tetrahydrobiopterin (BH4) has been also known as sapropterin. BH4 is an essential cofactor of the three aromatic amino acid hydroxylase enzymes which has used in the degradation of amino acid phenylalanine and in the biosynthesis of the neurotransmitters serotonin (5-HT), melatonin, norepinephrine, dopamine, epinephrine (adrenaline). BH4 is a cofactor of nitric oxide synthases [2].

L-Biopterin was reduced to BH4 via thioredoxin reductase followed by dihydropteridine reductase or reduced glutathione. L-Biopterin was extremely toxic to human melanocytes in culture with the IC50 of 0.2 μM after 48 hrs. L-Biopterin was rarely existed under physiological conditions except in the epidermis of patients with the depigmentation disorder Vitiligo [3].

References:
[1] Schallreuter K U, Buttner G, Pittelkow M R, et al. Cytotoxicity of 6-biopterin to human melanocytes[J]. Biochemical and biophysical research communications, 1994, 204(1): 43-48.
[2] Calka J. The role of nitric oxide in the hypothalamic control of LHRH and oxytocin release, sexual behavior and aging of the LHRH and oxytocin neurons[J]. Folia Histochemica et Cytobiologica, 2006, 44(1): 3.
[3] Moore J, Wood J M, Schallreuter K U. Evidence for Specific Complex Formation between α-Melanocyte Stimulating Hormone and 6 (R)-l-Erythro-5, 6, 7, 8-tetrahydrobiopterin using Near Infrared Fourier Transform Raman Spectroscopy[J]. Biochemistry, 1999, 38(46): 15317-15324.

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