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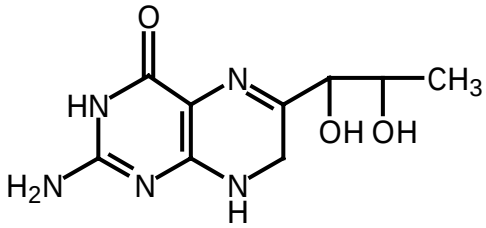
D A T A S H E E T

7,8-DIHYDRO-L-BIOPTERIN

Product No. 11.206

CAS No. [6779-87-9]



$C_9H_{13}N_5O_3$ MW 239.2

Description	Yellow powder		
Biochemical functions	7,8-dihydro-L-biopterin is an oxidation product of tetrahydrobiopterin. Tetrahydrobiopterin is a natural occurring cofactor of the aromatic amino acid hydroxylase and is involved in the synthesis of tyrosine and the neurotransmitters dopamine and serotonin. Tetrahydrobiopterin is also essential for nitric oxide synthase catalysed oxidation of L-arginine to L-citrullin and nitric oxide.		
Solubility	Dihydrobiopterin is slightly soluble in water. Its solubility is about 0.2 g per 100 g of water (22°C). Ultrasonication may be used to improve dissolution.		
Analytical methods	HPLC conditions:	column:	Whatman Partisil 10 SCX
		eluant:	30 mM Na_2HPO_4 pH 3
		flow rate:	1.5 ml/min
		wavelength:	254 nm
	TLC conditions:	stationary phase:	cellulose
		eluant:	water
Specifications	Purity: HPLC	> 98.0%	
	TLC	one blue fluorescent spot at 366 nm and a very weak spot caused by the oxidation of dihydrobiopterin to biopterin during the TLC analysis.	
Stability	Dihydrobiopterin is hygroscopic. On standing in normal conditions it takes up 2 moles of water. Dihydrobiopterin is more stable in the presence of oxygen than tetrahydrobiopterin. It reacts with oxygen especially in dilute solutions. Both 1 mM and 0.1 mM dihydrobiopterin solutions left open at room temperature for 1 hour degrade by approximately 3%. After 3 hours both solutions are degraded by about 10%. Oxidized dihydrobiopterin solutions become yellow but at -20°C solutions they are relatively stable. In acidic solutions deoxysepiapterin is formed. Dry, in tightly closed vials and at -20°C or colder it can be stored for several years.		
Storage	Solutions of dihydrobiopterin should be made in oxygen free water and frozen as soon as possible. Dihydrobiopterin can be transported without the use of dry ice. In tightly closed vials it is stable at ambient temperature for several weeks.		
Uses	Dihydrobiopterin is an important standard for analytical work. It is sold for laboratory use only.		
Safety information	Dihydrobiopterin is known to be safe and there are no special precautions required in handling this product.		

References

Biosynthesis and function of tetrahydrobiopterin. David S. Duch and Gary K. Smith, J. Nutr. Biochem., 2, (1991), 411-423.
Tetrahydrobiopterin deficiency: From phenotype to genotype. Nenad Blau, Beat Thöny, Claus W. Heizmann and Jean-Louis Dhondt, Pteridines, 4, (1993), 1-10.
New Tetrahydrobiopterin-Dependent Systems. Seymour Kaufman, Annu. Rev. Nutr., 13, (1993), 261-286.

Further data sheets can be found on our website www.schircks.ch