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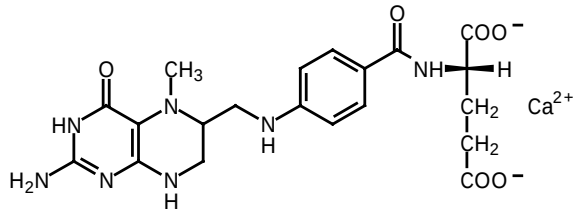
D A T A S H E E T

5-Methyl-5,6,7,8-tetrahydrofolic acid, calcium salt

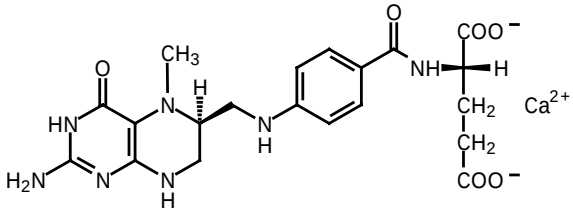
Abbreviations used: MethylFH_4, 5MeTHFA, 5MFH4

Product no.'s 16.235 and 16.236

CAS No. 139418-88-5



CAS No.151533-22-1



(6R,S)-5-Methyl-5,6,7,8-tetrahydrofolic acid, calcium salt
Product number 16.235 $C_{20}H_{23}N_7O_6 \cdot 4H_2O(Ca)$ MW: 497.5

(6S)-5-Methyl-5,6,7,8-tetrahydrofolic acid, calcium salt
Product number 16.236 $C_{20}H_{23}N_7O_6 \cdot 4H_2O(Ca)$ MW: 497.5

Description Light beige powder

Biochemical Functions Precursor of the methyl group of methionine in bacterial, avian and mammalian systems. The biosynthesis is accomplished by pyridine nucleotide dependant reduction of 5,10-methylene tetrahydrofolic acid. $5MFH_4$ appears in particular to be involved in serotonin metabolism. Of all forms of folate, $5MFH_4$ is the only one which can pass through the blood-brain barrier.

Solubility in H_2O MethylFH_4 calcium salt is slightly soluble in water (50 mg/100g H_20 (22°C)). A 1 mM solution in water has a pH of 5.9. Ultrasonication may be used to improve dissolution.

HPLC Conditions				
column	Waters Spherisorb 5, ODS 1, 4.6 x 150 mm	or	Whatman Partisil 10 SCX
eluant	10 mM $Na_2H\ PO_4$ pH 7 / Methanol (17:3)		10 mM $NH_4H_2PO_4$ pH 2.0
flow rate	1 ml/min		2 ml/min
wavelength	254 nm		275 nm
solution	1 mg / 2 ml water (~1 mM)		1 mg/ml buffer
retention time	1.9 min		6 min

Purity: HPLC > 95%

Stability Solutions are less stable than the solid form and should be made immediately before use. A 1 mM solution in water at room temperature for 2.5 hours degrades by approximately 4% and within 4 hours 10% has degraded. Keep the powder dry in amber vials at -20°C or colder. The powder is hygroscopic, taking up 10% of its weight in water within 4 hours.

Storage The compound 16.235 is sold in amber vials and the compound 16.236 in ampoules. They are stable at room temperature for a few weeks but at -25°C or colder they can be stored for several years.

Safety Information The product is not provided for human use. It is sold for laboratory use only.

Literature

Quantitative Bestimmung, Charakterisierung und Stabilität von Magnesium 5-Methyltetrahydrofolat. Josef Conti et al., Helvetia Chimica Acta, 57 (1), (1974), 160, (UV and IR spectra).
A Convenient Method for the Preparation of dl-5-Methyltetrahydrofolic Acid (dl-5-methyl-5,6,7,8-tetrahyropteroyl-L-monoglutamic acid). J.A. Blair and K.J. Saunders, Analytical Biochemistry, 34, (1970), 376-381.
Resolution of the Stereoisomers of Leucovorin and 5-Methyltetrahydrofolate by Chiral High-Performance Liquid Chromatography. Kyung E. Choi and Richard L. Schilsky, Analytical Biochemistry, 168, (1988), 398-404, (Separation of Isomers).
Preparation and properties of crystalline 5-Methyl tetrahydrofolate and Related Compounds. V.S. Gupta and F.M. Huennekens, Archives of Biochemistry and Biophysics, 120, (1967), 712-718.

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