

PRODUCT INFORMATION

5-Methyltetrahydrofolic Acid (hydrate)

Item No. 16159

Formal Name: N-[4-[[[(2-amino-3,4,5,6,7,8-hexahydro-5-methyl-4-oxo-6-pteridiny)methyl]amino]benzoyl]-L-glutamic acid, hydrate

Synonyms: 5-methyl THF, Prefolic A

MF: $C_{20}H_{25}N_7O_6 \cdot XH_2O$

FW: 459.5

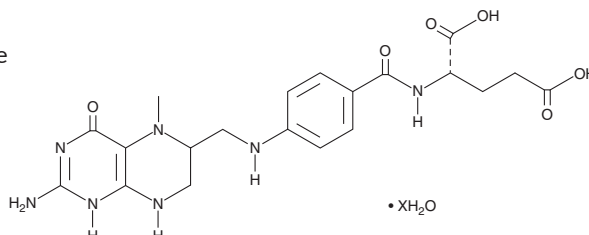
Purity: $\geq 98\%$

UV/Vis.: λ_{max} : 217, 294 nm

Supplied as: A crystalline solid

Storage: $-20^\circ C$

Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

5-Methyltetrahydrofolic acid (5-methyl THF) (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-methyl THF (hydrate) in the solvent of choice, which should be purged with an inert gas. 5-methyl THF (hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 5-methyl THF (hydrate) in these solvents is approximately 20 and 10 mg/ml, respectively.

5-methyl THF (hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 5-methyl THF (hydrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 5-methyl THF (hydrate) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

5-methyl THF is a biologically active form of folic acid that functions, in conjunction with vitamin B12, as a methyl-group donor involved in the conversion of homocysteine to methionine.^{1,2} The availability of methyl groups is essential for a variety of methylation reactions including the synthesis of DNA and proper neural tube closure.¹ It has been used to restore nitric oxide-generating activity in cases of familial hypercholesterolemia or hyperhomocysteinemia, reducing homocysteine levels and improving vascular endothelial function.^{3,4}

References

1. Blom, H.J. and Smulders, Y. Overview of homocysteine and folate metabolism. With special references to cardiovascular disease and neural tube defects. *J. Inherit. Metab. Dis.* **34**(1), 75-81 (2011).
2. [No authors listed]. 5-Methyltetrahydrofolate. *Monograph. Altern. Med. Rev.* **11**(4), 330-337 (2006).
3. Verhaar, M.C., Wever, R.M.F., Kastelein, J.J.P., et al. 5-Methyltetrahydrofolate, the active form of folic acid, restores endothelial function in familial hypercholesterolemia. *Circulation* **97**, 237-241 (1998).
4. Zhang, X., Li, H., Jin, H., et al. Effects of homocysteine on endothelial nitric oxide production. *Am. J. Physiol. Renal Physiol.* **279**(4), 671-678 (2000).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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