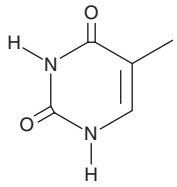
PRODUCT INFORMATION

Thymine

Item No. 38749

CAS Registry No.:	65-71-4
Formal Name:	5-methyl-2,4(1H,3H)-pyrimidinedione
Synonyms:	5-Methyluracil, NSC 14705, NSC 168663
MF:	$C_5H_6N_2O_2$
FW:	126.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 210, 264 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Thymine is supplied as a solid. A stock solution may be made by dissolving the thymine in the solvent of choice, which should be purged with an inert gas. Thymine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of thymine in ethanol is approximately 2 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of thymine can be prepared by directly dissolving the solid in aqueous buffers. Thymine is slightly soluble in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Thymine is a pyrimidine base.[1] It forms complementary base pairs with the purine adenine (Item No. 18148) in DNA.[1] Thymine is produced by the catabolism of thymidine (Item No. 20519) *via* thymidine phosphorylase.[2] It is replaced with uracil (Item No. 26088) in RNA.[3]

References

1. Ghannam, J.Y., Wang, J., and Jan, A. *Biochemistry, DNA Structure.* StatPearls Publishing, 1-5 (2021).
2. Brown, N.S. and Bicknell, R. Thymidine phosphorylase, 2-deoxy-D-ribose and angiogenesis. *Biochem. J.* **334(Pt 1)**, 1-8 (1998).
3. Banoub, J.H., Newton, R.P., Esmans, E., *et al.* Recent developments in mass spectrometry for the characterization of nucleosides, nucleotides, oligonucleotides, and nucleic acids. *Chem. Rev.* **105(5)**, 1869-1915 (2005).

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