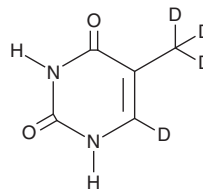


# PRODUCT INFORMATION



## Thymine-d<sub>4</sub> Item No. 36329

**CAS Registry No.:** 156054-85-2  
**Formal Name:** 5-(methyl-d<sub>3</sub>)pyrimidine-2,4(1H,3H)-dione-6-d  
**MF:** C<sub>5</sub>H<sub>2</sub>D<sub>4</sub>N<sub>2</sub>O<sub>2</sub>  
**FW:** 130.1  
**Chemical Purity:** ≥98% (Thymine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**UV/Vis.:** λ<sub>max</sub>: 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-d<sub>4</sub> is intended for use as an internal standard for the quantification of thymine by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Thymine-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the thymine-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Thymine-d<sub>4</sub> is soluble in the organic solvent DMSO at a concentration of approximately 3 mg/ml.

### Description

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

### References

1. Ghannam, J.Y., Wang, J., and Jan, A. *Biochemistry, DNA Structure*. StatPearls Publishing, Treasure Island, FL (2022).
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).

#### 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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