

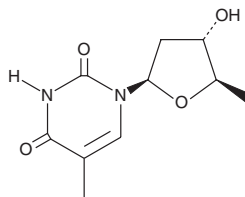
# PRODUCT INFORMATION



## 5'-deoxy Thymidine

Item No. 18154

**CAS Registry No.:** 3458-14-8  
**Formal Name:** 5'-deoxy-thymidine  
**MF:** C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>O<sub>4</sub>  
**FW:** 226.2  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



### Laboratory Procedures

5'-deoxy Thymidine is supplied as a crystalline solid. A stock solution may be made by dissolving the 5'-deoxy Thymidine in the solvent of choice. 5'-deoxy Thymidine is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of 5'-deoxy Thymidine in these solvents is approximately 10 and 16 mg/ml, respectively.

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 5'-deoxy Thymidine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5'-deoxy Thymidine in PBS, pH 7.2, is approximately 16 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

The pyrimidine thymidine consists of thymine combined with deoxyribose. Prior to polymerization into DNA, thymidine must be phosphorylated at the hydroxyl group on carbon 5 of the ribose moiety. 5'-deoxy Thymidine is a form of thymidine in which the hydroxyl group on carbon 5 of ribose has been replaced with hydrogen. As a result, this compound cannot be phosphorylated and used by DNA polymerase in the synthesis of DNA. 5'-deoxy Thymidine is readily imported by cellular nucleoside importers and competitively inhibits the influx of thymidine.<sup>1</sup> It demonstrates antibacterial activity against *B. subtilis* and *S. aureus*.<sup>2</sup>

### References

1. Domin, B.A., Mahony, W.B., Koszalka, G.W., *et al.* Membrane permeation characteristics of 5'-modified thymidine analogs. *Mol. Pharmacol.* 41(5), 950-956 (1992).
2. Hatano, A., Nishimura, M., and Souta, I. Impact of unnatural nucleosides on the control of microbial growth. *Biocontrol Science* 14(2), 55-60 (2009).

#### 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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