

PRODUCT INFORMATION



Thymidine

Item No. 20519

CAS Registry No.: 50-89-5

Formal Name: (8S,9R,10S,13S,14S,17S)-
17-acetyl-10,13-dimethyl-
1,2,8,9,10,11,12,13,14,15,16,17-
dodecahydro-3H-cyclopenta[a]
phenanthren-3-one

Synonyms: 2'-deoxy Thymidine, 2'-deoxy-5-methyl-
Uridine, dT, 5-Methyldeoxyuridine,
NSC 21548, Thymine deoxyriboside

MF: $C_{10}H_{14}N_2O_5$

FW: 242.2

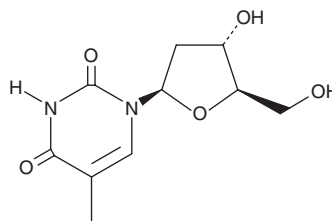
Purity: $\geq 98\%$

UV/Vis.: λ_{\max} : 266 nm

Supplied as: A crystalline solid

Storage: Room temperature

Stability: ≥ 4 years



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

Laboratory Procedures

Thymidine is supplied as a crystalline solid. A stock solution may be made by dissolving the thymidine in the solvent of choice, which should be purged with an inert gas. Thymidine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 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 thymidine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of thymidine in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Thymidine is a pyrimidine nucleoside composed of a deoxyribose sugar and thymine base.¹ It is phosphorylated by thymidine kinase 2 (TK2) in mitochondria to form deoxythymidine monophosphate (dTMP; Item No. 33549).² Oral administration of thymidine in combination with deoxycytidine increases lifespan in a *Tk2 H126N* knock-in mouse model of TK2 deficiency.

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. *Biochemistry*. 5th ed., W.H. Freeman, New York (2002).
2. Lopez-Gomez, C., Levy, R.J., Sanchez-Quintero, M.J., et al. Deoxycytidine and deoxythymidine treatment for thymidine kinase 2 deficiency. *Ann. Neurol.* **81**(5), 641-652 (2017).

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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