



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Zuschläge

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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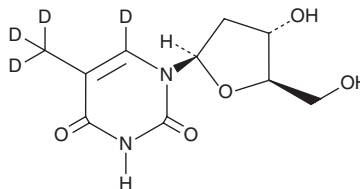
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# PRODUCT INFORMATION



## Thymidine-d<sub>4</sub> Item No. 36322

**CAS Registry No.:** 347841-67-2  
**Formal Name:** thymidine- $\alpha,\alpha,\alpha,6$ -d<sub>4</sub>  
**Synonyms:** dT-d<sub>4</sub>, 5-Methyldeoxyuridine-d<sub>4</sub>, Thymine deoxyriboside-d<sub>4</sub>, 2'-deoxy Thymidine-d<sub>4</sub>, 2'-deoxy-5-methyl-Uridine-d<sub>4</sub>  
**MF:** C<sub>10</sub>H<sub>10</sub>D<sub>4</sub>N<sub>2</sub>O<sub>5</sub>  
**FW:** 246.3  
**Chemical Purity:** ≥98% (Thymidine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Thymidine-d<sub>4</sub> is intended for use as an internal standard for the quantification of thymidine (Item No. 20519) 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).

Thymidine-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the thymidine-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Thymidine-d<sub>4</sub> is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of thymidine-d<sub>4</sub> in these solvents is approximately 10 and 16 mg/ml, respectively.

### Description

Thymidine is a pyrimidine nucleoside composed of a deoxyribose sugar and thymine base.<sup>1</sup> It is phosphorylated by thymidine kinase 2 (TK2) in mitochondria to form deoxythymidine monophosphate (dTMP; Item No. 33549).<sup>2</sup> 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*. 5<sup>th</sup> 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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