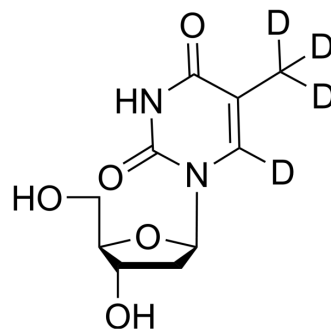


Thymidine-d₄

Cat. No.:	HY-N1150S1		
CAS No.:	347841-67-2		
Molecular Formula:	C ₁₀ H ₁₀ D ₄ N ₂ O ₅		
Molecular Weight:	246.25		
Target:	DNA/RNA Synthesis; Endogenous Metabolite		
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMF : ≥ 16 mg/mL (64.97 mM)
 DMF : ≥ 16 mg/mL (64.97 mM)
 DMSO : ≥ 10 mg/mL (40.61 mM)
 DMSO : ≥ 10 mg/mL (40.61 mM)
 PBS (pH 7.2) : ≥ 5 mg/mL (20.30 mM)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		4.0609 mL	20.3046 mL	40.6091 mL
	5 mM		0.8122 mL	4.0609 mL	8.1218 mL
	10 mM		0.4061 mL	2.0305 mL	4.0609 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Thymidine-d₄ is the deuterium labeled Thymidine. Thymidine, a specific precursor of deoxyribonucleic acid, is used as a cell synchronizing agent. Thymidine is a DNA synthesis inhibitor that can arrest cell at G1/S boundary, prior to DNA replication^{[1][2][3]}.

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019;53(2):211-216.
- [2]. FIRKET H, et al. Autoradiographic visualization of synthesis of deoxyribonucleic acid in tissue culture with tritium-labelled thymidine. *Nature*. 1958 Jan 24;181(4604):274-5. FIRKET H, et al. Autoradiographic visualization of synthesis of deoxyribonucleic acid in tissue culture with tritium-labelled thymidine. *Nature*. 1958 Jan 24;181(4604):274-5.
- [3]. Izeradjene K, et al. Inhibition of thymidine synthesis by folate analogues induces a Fas-Fas ligand-independent deletion of superantigen-reactive peripheral T cells. *Int Immunol*. 2001 Jan;13(1):85-93.
- [4]. Chen G, et al. Cell Synchronization by Double Thymidine Block. *Bio Protoc*. 2018 Sep 5;8(17).
-

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA