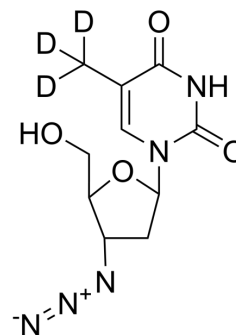


Zidovudine-d₃

Cat. No.:	HY-17413S
Molecular Formula:	C ₁₀ H ₁₀ D ₃ N ₅ O ₄
Molecular Weight:	270.26
Target:	HIV; CRISPR/Cas9; Isotope-Labeled Compounds
Pathway:	Anti-infection; Cell Cycle/DNA Damage; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Zidovudine-d ₃ is the deuterium labeled Zidovudine. Zidovudine is a nucleoside reverse transcriptase inhibitor (NRTI), widely used to treat HIV infection. Zidovudine increases CRISPR/Cas9-mediated editing frequency. Zidovudine-d ₃ is a click chemistry reagent, it contains an Azide group and can undergo copper-catalyzed azide-alkyne cycloaddition reaction (CuAAC) with molecules containing Alkyne groups. Strain-promoted alkyne-azide cycloaddition (SPAAC) can also occur with molecules containing DBCO or BCN groups.
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]. Gray LR, et al. The NRTIs lamivudine, stavudine and zidovudine have reduced HIV-1 inhibitory activity in astrocytes. *PLoS One.* 2013 Apr 16;8(4):e62196.
- [3]. Hou P, et al. Genome editing of CXCR4 by CRISPR/cas9 confers cells resistant to HIV-1 infection. *Sci Rep.* 2015 Oct 20;5:15577.
- [4]. Mizutani T, et al. Nucleoside Reverse Transcriptase Inhibitors Suppress Laser-Induced Choroidal Neovascularization in Mice. *Invest Ophthalmol Vis Sci.* 2015 Nov;56(12):7122-9.

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

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