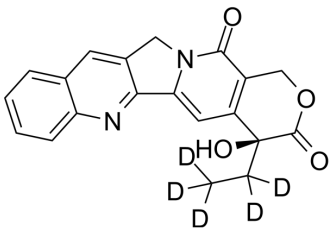
Camptothecin-d_5

Cat. No.:	HY-16560S
CAS No.:	1329616-37-6
Molecular Formula:	$C_{20}H_{11}D_5N_2O_4$
Molecular Weight:	353.38
Target:	MicroRNA; Fungal; Apoptosis; Topoisomerase; ADC Cytotoxin; Influenza Virus; Antibiotic
Pathway:	Epigenetics; Anti-infection; Apoptosis; Cell Cycle/DNA Damage; Antibody-drug Conjugate/ADC Related
Storage:	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



BIOLOGICAL ACTIVITY

Description	Camptothecin-d_5 is the deuterium labeled Camptothecin. Camptothecin (CPT), a kind of alkaloid, is a DNA topoisomerase I (Topo I) inhibitor with an IC50 of 679 nM[1]. Camptothecin (CPT) exhibits powerful antineoplastic activity against colorectal, breast, lung and ovarian cancers, modulates hypoxia-inducible factor-1α (HIF-1α) activity by changing microRNAs (miRNA) expression patterns in human cancer cells[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]. Luzzio MJ, et al. Synthesis and antitumor activity of novel water soluble derivatives of camptothecin as specific inhibitors of topoisomerase I. Synthesis and antitumor activity of novel water soluble derivatives of camptothecin as specific inhibitors of topoisomerase I.

[3]. Bertozzi D, et al. The natural inhibitor of DNA topoisomerase I, camptothecin, modulates HIF-1α activity by changing miR expression patterns in human cancer cells. Mol Cancer Ther. 2014;13(1):239-248.

[4]. Schön M, et al. KINK-1, a novel small-molecule inhibitor of IKKbeta, and the susceptibility of melanoma cells to antitumoral treatment. J Natl Cancer Inst. 2008;100(12):862-875..

[5]. Huang Q, et al. Evolution in medicinal chemistry of E-ring-modified Camptothecin analogs as anticancer agents. Eur J Med Chem. 2013;63:746-757.

[6]. Tesauro C, et al. Topoisomerase I activity and sensitivity to camptothecin in breast cancer-derived cells: a comparative study. BMC Cancer. 2019;19(1):1158. Published 2019 Nov 29.

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

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