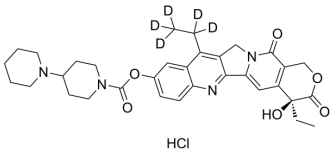
Irinotecan-d_5 hydrochloride

Cat. No.:	HY-16562AS
CAS No.:	718612-73-8
Molecular Formula:	$C_{33}H_{34}D_5ClN_4O_6$
Molecular Weight:	628.17
Target:	Autophagy; Topoisomerase; Isotope-Labeled Compounds
Pathway:	Autophagy; Cell Cycle/DNA Damage; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Irinotecan-d_5 hydrochloride is deuterated labeled Irinotecan hydrochloride (HY-16562A). Irinotecan hydrochloride ((+)-Irinotecan hydrochloride) is a topoisomerase I inhibitor mainly used to treat colon cancer and rectal cancer[1].
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]. Irinotecan hydrochloride is a topoisomerase I inhibitor. Irinotecan inhibits the growth of LoVo and HT-29 cells, with IC_{50}s of 15.8 ± 5.1 and 5.17 ± 1.4 μM, respectively, and induces similar amounts of cleavable complexes in both in LoVo and HT-29 cells[3]. Irinotecan suppresses the proliferation of human umbilical vein endothelial cells (HUVEC), with an IC_{50} of 1.3 μM[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Irinotecan hydrochloride (CPT-11 hydrochloride, 5 mg/kg) significantly inhibits the growth of tumors by intratumoral injection daily for 5 days, on two consecutive weeks in rats, and such effects also occur via continuous intraperitoneal infusion by osmotic minipump into mice. However, Irinotecan (10 mg/kg) shows no effect on the growth of tumor by i.p[2]. Irinotecan (CPT-11, 100-300 mg/kg, i.p.) apparently suppresses tumor growth of HT-29 xenografts in athymic female mice by day 21. The two groups of Irinotecan (125 mg/kg) plus TSP-1 (10 mg/kg per day) or Irinotecan (150 mg/kg) in combination TSP-1 (20 mg/kg per day) are nearly equally effective and inhibit tumor growth 84% and 89%, respectively, and both are more effective than Irinotecan alone at doses of 250 and 300 mg/kg[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Morales C, et al. Antitumoral effect of irinotecan (CPT-11) on an experimental model of malignant neuroectodermal tumor. J Neurooncol. 2002 Feb;56(3):219-26.

[2]. Pavillard V, et al. Determinants of the cytotoxicity of irinotecan in two human colorectal tumor cell lines. Cancer Chemother Pharmacol. 2002 Apr;49(4):329-35. Epub 2002 Jan 30.

[3]. Allegrini G, et al. Thrombospondin-1 plus irinotecan: a novel antiangiogenic-chemotherapeutic combination that inhibits the growth of advanced human colon tumor xenografts in mice. Cancer Chemother Pharmacol. 2004 Mar;53(3):261-6. Epub 2003 Dec 5.

[4]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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