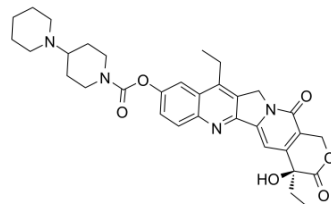


Irinotecan

Cat. No.:	HY-16562
CAS No.:	97682-44-5
Molecular Formula:	C ₃₃ H ₃₈ N ₄ O ₆
Molecular Weight:	586.68
Target:	Topoisomerase; Autophagy
Pathway:	Cell Cycle/DNA Damage; Autophagy
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 25 mg/mL (42.61 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent	Mass	1 mg	5 mg	10 mg
		Concentration				
		1 mM		1.7045 mL	8.5225 mL	17.0451 mL
		5 mM		0.3409 mL	1.7045 mL	3.4090 mL
10 mM		0.1705 mL	0.8523 mL	1.7045 mL		
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Irinotecan ((+)-Irinotecan) is a topoisomerase I inhibitor, preventing religation of the DNA strand by binding to topoisomerase I-DNA complex ^[1] .
IC₅₀ & Target	Topoisomerase I
In Vitro	Irinotecan 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 ^[2] . Irinotecan suppresses the proliferation of human umbilical vein endothelial cells (HUVEC), with an IC ₅₀ of 1.3 μM ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	<p>Irinotecan (CPT-11, 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.^[1]. 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^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
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PROTOCOL

Cell Assay ^[2]	<p>Exponentially growing cells are seeded in 20 cm² dishes with an optimal cell number for each cell line (20,000 for LoVo cells, 100,000 for HT-29 cells). They are treated 2 days later with increasing concentrations of irinotecan or SN-38 for one cell doubling time (24 h for LoVo cells, 40 h for HT-29 cells). After washing with 0.15 M NaCl, the cells are further grown for two doubling times in normal medium, detached from the support with trypsin-EDTA and counted in a hemocytometer. The IC₅₀ values are then estimated as the drug concentrations responsible for 50% growth inhibition as compared with cells incubated without drug^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
Animal Administration ^[1]	<p>Irinotecan has been administered by intratumoral injection at 0.1 cc volume of the appropriate solution, for a doses of 5 mg/kg daily for 5 days, on two consecutive weeks, followed by a 7-days rest period, referred to as one cycle of therapy. Rats receive three cycles over a period of 8 weeks. Control animals receive 0.1 cc of sterile 0.9% sodium chloride solution by intratumoral injection in the same rule of administration as that of animals of group II^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Genome Med. 2016 Oct 31;8(1):116.
- Theranostics. 2019 May 31;9(13):3732-3753.
- Cell Death Dis. 2019 Nov 25;10(12):887.
- PLoS Pathog. 2020 Mar 24;16(3):e1008429.
- Pharmacol Res. 2021 Jan;163:105232.

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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]. Dela Cruz FS, et al. A case study of an integrative genomic and experimental therapeutic approach for rare tumors: identification of vulnerabilities in a pediatric poorly differentiated carcinoma. *Genome Med.* 2016 Oct 31;8(1):116.

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

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444

Email: customerservice@lifetechindia.com Website: www.lifetechindia.com