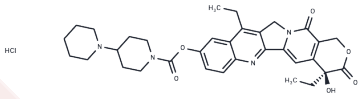
Data Sheet (Cat.No.T0486L)

TargetMol

Irinotecan Hydrochloride

Chemical Properties



CAS No. : 100286-90-6

Formula: C33H39ClN4O6

Molecular Weight: 623.14

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Irinotecan Hydrochloride (CPT-11 hydrochloride) is the hydrochloride salt of a semisynthetic derivative of camptothecin. Irinotecan, a prodrug, is converted to a biologically active metabolite 7-ethyl-10-hydroxy-camptothecin (SN-38) by a carboxylesterase-converting enzyme. One thousand-fold more potent than its parent compound irinotecan, SN-38 inhibits topoisomerase I activity by stabilizing the cleavable complex between topoisomerase I and DNA, resulting in DNA breaks that inhibit DNA replication and trigger apoptotic cell death. Because ongoing DNA synthesis is necessary for irinotecan to exert its cytotoxic effects, it is classified as an S-phase-specific agent.
Targets(IC50)	Autophagy,Topoisomerase
In vitro	Increasing concentrations of Irinotecan (0.1, 1, 10, 100, and 1000 μg/mL) inhibits the growth of all cell lines in a dose-dependent manner. COLO-357 cells are most sensitive and HT29 most resistant to Irinotecan in the MTT assay on incubation for 90 min. The IC50 concentrations are 100, 50, 5.4, 23 and 46 μg/mL Irinotecan for HT29, NMG 64/84, COLO-357, MIA PaCa-2 and PANC-1, respectively[1].
In vivo	The time course of body weight change after Irinotecan (100 mg/kg i.p.) injection shows a significant dosing time-dependent difference (P<0.01). Mean maximum body weight loss is observed between days 3 and 4 after Irinotecan (CPT-11) injection. The minimum mean body weight loss is observed after Irinotecan (CPT-11) injection at 1700 hr. Moreover, the maximum mean body weight loss is observed after Irinotecan injection at 0500 or 0900 hr[2].
Cell Research	Irinotecan hydrochloride is dissolved in DMSO and stored, and then diluted with appropriate medium before use[1]. To determine the effects of Irinotecan in combination with 5-FU, the MTT assay is used. Depending on the cell lines, 10,000 to 20,000 cells per well are seeded in 96-well plates and incubated for 24 h in complete medium. On day 2, cells are incubated in the absence or presence of Irinotecan for 30 min followed by 5-FU for 24 h. After another 24 h in complete medium without any additives, MTT reagent is added on day 4 to initiate the assay and the cells are incubated for an additional 4 h at 37°C. After removal of the medium and dissolving the crystals with acidified isopropanol, the samples are analyzed using an ELISA plate reader at 570 nm. The value at 650 nm is subtracted as background[1].

Solubility Information

Solubility	DMSO: 65 mg/mL (104.31 mM),Sonication is recommended. H2O: 3.12 mg/mL (5.01 mM),Heating is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (8.02 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.6048 mL	8.0239 mL	16.0478 mL
5 mM	0.321 mL	1.6048 mL	3.2096 mL
10 mM	0.1605 mL	0.8024 mL	1.6048 mL
50 mM	0.0321 mL	0.1605 mL	0.321 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Hofmann C, et al. Pre-clinical evaluation of the activity of irinotecan as a basis for regional chemotherapy. Anticancer Res. 2005 Mar-Apr;25(2A):795-804.

Ohdo S, et al. Cell cycle-dependent chronotoxicity of irinotecan hydrochloride in mice. J Pharmacol Exp Ther. 1997 Dec;283(3):1383-8.