(S)-10-Hydroxycamptothecin

Cat. No.: HY-N0095

CAS No.: 19685-09-7

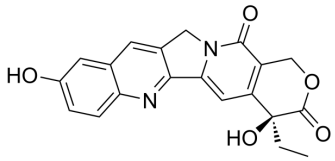
Molecular Formula: $C_{20}H_{16}N_2O_5$

Molecular Weight: 364.35

Target: Apoptosis; Topoisomerase

Pathway: Apoptosis; Cell Cycle/DNA Damage

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (137.23 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7446 mL	13.7231 mL	27.4461 mL
	5 mM	0.5489 mL	2.7446 mL	5.4892 mL
	10 mM	0.2745 mL	1.3723 mL	2.7446 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (6.86 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.86 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

(S)-10-Hydroxycamptothecin (10-HCPT;10-Hydroxycamptothecin) is a DNA topoisomerase I inhibitor of isolated from the Chinese plant Camptotheca accuminata. (S)-10-Hydroxycamptothecin exhibits a remarkable apoptosis-inducing effect. (S)-10-Hydroxycamptothecin has the potential for hepatoma, gastric carcinoma, colon cancer and leukaemia treatment[1][2][3][4].

IC_{50} & Target

Topoisomerase I

In Vitro

(S)-10-Hydroxycamptothecin (5-20 μg/L; 6 days; Hep G2 cells) treatment results in the cell cycle arrest at G2/M phase[2].
?(S)-10-Hydroxycamptothecin induces differentiation, down-regulates nuclear antigen (PCNA) and up-regulates wild-type protein p53 in Hep G2 cells[2].
?(S)-10-Hydroxycamptothecin inhibits L1210 leukemia cells with an IC_{50} of 1.15 μM[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cycle Analysis[2]

Cell Line:	Hep G2 cells
Concentration:	5 μg/L, 10 μg/L, 20 μg/L
Incubation Time:	6 days
Result:	Hep G2 cells were mainly arrested at G2/M phase.

In Vivo

(S)-10-Hydroxycamptothecin (10-Hydroxycamptothecin) against L1210 leukemia in mice is tested. At the optimal dose (15 mg/kg), (S)-10-Hydroxycamptothecin has a 71% increase in life span (ILS)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Min Liu, et al. Intracellular delivery of 10-hydroxycamptothecinwith targeted nanostructured lipid carriers againstmultidrug resistance. Journal of Drug Targeting.

[2]. Min Liu, et al. Intracellular delivery of 10-hydroxycamptothecin with targetednanostructured lipid carriers against multidrug resistance. J Drug Target, Early Online: 1–8

[3]. Yu P, et al. Synthesis and preliminary anticancer evaluation of 10-hydroxycamptothecin analogs. Biol Pharm Bull. 2012;35(8):1295-9.

[4]. Zhang XW, et al. Differentiation-inducing action of 10-hydroxycamptothecin on human hepatoma Hep G2 cells. Acta Pharmacol Sin. 2000 Apr;21(4):364-8.

[5]. Zhang XW, et al. Differential regulation of P53, c-Myc, Bcl-2, Bax and AFP protein expression, and caspase activity during 10-hydroxycamptothecin-induced apoptosis in Hep G2 cells. Anticancer Drugs. 2000 Oct;11(9):747-56.

[6]. Liu M, et al. Intracellular delivery of 10-hydroxycamptothecin with targeted nanostructured lipid carriers against multidrug resistance. J Drug Target. 2016;24(5):433-40.

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

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