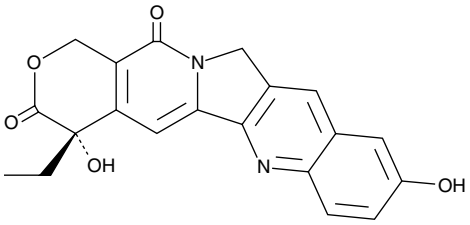
Product Information

(S)-10-hydroxy-Camptothecin

Item No. 14635

CAS Registry No.: 19685-09-7
Formal Name: (4S)-4-ethyl-4,9-dihydroxy-1H-pyrano[3',4':6,7]indolizino[1,2-b]quinoline-3,14(4H,12H)-dione
Synonyms: ChEMBL 273862, NSC 107124
MF: $C_{20}H_{16}N_2O_5$
FW: 364.4
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 222, 267, 330, 383 nm



Laboratory Procedures

For long term storage, we suggest that (S)-10-hydroxy-camptothecin be stored as supplied at -20°C. It should be stable for at least two years.

(S)-10-hydroxy-Camptothecin is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-10-hydroxy-camptothecin in the solvent of choice. (S)-10-hydroxy-Camptothecin is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of (S)-10-hydroxy-camptothecin in these solvents is approximately 3 and 2 mg/ml, respectively.

(S)-10-hydroxy-Camptothecin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (S)-10-hydroxy-camptothecin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. (S)-10-hydroxy-Camptothecin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

DNA topoisomerases relax supercoiled DNA during replication, transcription, recombination, repair, and chromosome condensation. The relaxation of DNA supercoiling by topoisomerase I at single-strand breaks represents a target for anticancer agents to intercalate between DNA base pairs, leading to the activation of apoptotic and cell cycle arrest pathways.[1] (S)-10-hydroxy-Camptothecin is an inhibitor of topoisomerase I originally isolated from the Chinese tree *C. acuminata*. It is a member of the camptothecin family that demonstrates less toxicity than its parent compound.[2] (S)-10-hydroxy-Camptothecin has strong anti-tumor activity against a wide range of experimental tumors including L1210 leukemia cells (IC_{50} = 1.15 µM).[2] *In vitro* treatment of human HepG2 cells with 5-20 µM (S)-10-hydroxy-camptothecin results in cell cycle arrest at the G_2/M phase.[3]

References

1. Drwal, M.N., Agama, K., Wakelin, L.P.G., *et al.* Exploring DNA topoisomerase I ligand space in search of novel anticancer agents. *PLoS One* **6(9)**, 1-12 (2011).
2. Yu, P., Xia, L., Zhao, J., *et al.* Synthesis and preliminary anticancer evaluation of 10-hydroxycamptothecin analogs. *Biol. Pharm. Bull.* **35(8)**, 1295-1299 (2012).
3. Zhang, X.-W., Jiang, J.-F., and Xu, B. Differentiation-inducing action of 10-hydroxycamptothecin on human hepatoma Hep G_2 cells. *Acta. Pharmacol. Sin.* **21(4)**, 364-368 (2000).

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