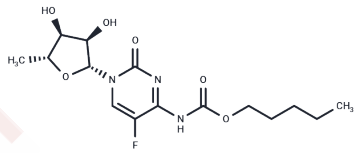
Data Sheet (Cat.No.T1408)

TargetMol

Capecitabine

Chemical Properties



CAS No. : 154361-50-9

Formula: C15H22FN3O6

Molecular Weight: 359.35

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	Capecitabine (Capecitibine) is a fluoropyrimidine carbamate belonging to the class of antineoplastic agents called antimetabolites. As a prodrug, capecitabine is selectively activated by tumor cells to its cytotoxic moiety, 5-fluorouracil (5-FU); subsequently, 5-FU is metabolized to two active metabolites, 5-fluoro-2-deoxyuridine monophosphate (FdUMP) and 5-fluorouridine triphosphate (FUTP) by both tumor cells and normal cells. FdUMP inhibits DNA synthesis and cell division by reducing normal thymidine production, while FUTP inhibits RNA and protein synthesis by competing with uridine triphosphate for incorporation into the RNA strand.
Targets(IC50)	Apoptosis,Nucleoside Antimetabolite/Analog,DNA/RNA Synthesis
In vitro	When administered to mice with a high propensity for liver metastasis, Capecitabine exhibits inhibitory effects on both the growth and metastatic recurrence of human hepatocellular carcinoma. This phenomenon is attributed to the high expression of platelet-driven endothelial growth factor within the tumors. Compared to 5-FU, UFT, and the intermediate metabolite 5'-DFUR, Capecitabine demonstrates a broader spectrum of anticancer activity against human transplant tumors, which is associated with the tumor levels of dThdPase.
In vivo	Capecitabine induces apoptosis in a Fas-dependent manner and exhibits toxicity sevenfold higher towards LS174T-c2 cells, which are transfected with thymidine phosphorylase, leading to more pronounced apoptosis. When cultured in the same plate as HepG2 cells, both LS174TWT and LS174T-c2 cells show increased sensitivity to Capecitabine, with IC50 values decreasing from 890 μM when LS174TWT cells are cultured alone to 630 μM when co-cultured with HepG2 cells. Additionally, for the LS174T-C2 subtype co-cultured with HepG2 cells, the IC50 significantly drops from 330±4 μM to 89±6 μM.
Cell Research	HepG2 and either LS174T WT or LS174T-c2 cells are seeded, respectively, in the top and bottom chambers of 8-well strip membranes in 96-well plates. The exponentially growing cells are exposed to increasing concentrations of capecitabine. The medium is supplemented with 750 ng/mL ZB4 MoAB or 100 ng/mL BR17 MoAB when the latter are used in the experiments. After 72 hours of continuous exposure, LS174T viability is assessed using the classic colorimetric MTT test.(Only for Reference)

Solubility Information

Solubility	Ethanol: 35.9 mg/mL (99.9 mM),Sonication is recommended. DMSO: 242 mg/mL (673.44 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	5% DMSO+95% Saline: 1.8 mg/mL (5.01 mM),Solution. PBS: 50 mg/mL (139.14 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	2.7828 mL	13.914 mL	27.828 mL
5 mM	0.5566 mL	2.7828 mL	5.5656 mL
10 mM	0.2783 mL	1.3914 mL	2.7828 mL
50 mM	0.0557 mL	0.2783 mL	0.5566 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

Ciccolini J, et al. Mol Cancer Ther. 2002, 1(11), 923-927.
Ishikawa T, et al. Biochem Pharmacol. 1998, 55(7), 1091-1097.
Zhou J, et al. Clin Cancer Res. 2003, 9(16), 6030-6037.