Product data sheet



MedKoo Cat#: 100120				
Name: Capecitabine				
CAS#: 154361-50-9				
Chemical Formula: C ₁₅ H ₂₂ FN ₃ O ₆				
Exact Mass: 359.1493				
Molecular Weight: 359.35				
Product supplied as:	Powder			
Purity (by HPLC):	$\geq 98\%$			
Shipping conditions	Ambient temperature			
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.			
-	In solvent: -80°C 3 months; -20°C 2 weeks.			



1. Product description:

Capecitabine 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.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM		
DMSO	55.11	153.36		
Ethanol	37.65	104.77		
Water	19.83	55.18		
DMF	14.0	38.96		
PBS (pH 7.2)	0.15	0.42		

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.78 mL	13.91 mL	27.83 mL
5 mM	0.56 mL	2.78 mL	5.57 mL
10 mM	0.28 mL	1.39 mL	2.78 mL
50 mM	0.06 mL	0.28 mL	0.56 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Loo WT, Sasano H, Chow LW. Evaluation of therapeutic efficacy of capecitabine on human breast carcinoma tissues and cell lines in vitro. Biomed Pharmacother. 2007 Oct;61(9):553-7. doi: 10.1016/j.biopha.2007.08.014. Epub 2007 Sep 14. PMID: 17905566.

In vivo study

1. Courtin A, Richards FM, Bapiro TE, Bramhall JL, Neesse A, Cook N, Krippendorff BF, Tuveson DA, Jodrell DI. Anti-tumour efficacy of capecitabine in a genetically engineered mouse model of pancreatic cancer. PLoS One. 2013 Jun 28;8(6):e67330. doi: 10.1371/journal.pone.0067330. PMID: 23840665; PMCID: PMC3696095.

7. Bioactivity

Biological target: Capecitabine (RO 09-1978) is a tumor-selective fluoropyrimidine carbamate.

Product data sheet



In vitro activity

Tumour tissues obtained from 42 patients and breast carcinoma cell lines were treated with capecitabine in vitro in order to evaluate its therapeutic antineoplastic effects. Both solid tumour and cell lines treated by capecitabine demonstrated a significant decrement in metabolic and proliferation rates. However, capecitabine treatment resulted in significant increment of the number of the tumour cells undergoing apoptosis.

Reference: Biomed Pharmacother. 2007 Oct;61(9):553-7. https://www.sciencedirect.com/science/article/abs/pii/S0753332207001849?via%3Dihub

In vivo activity

The effect of CAP (capecitabine) on the growth of K8484 allograft tumours was studied. Mice were dosed with vehicle or CAP at 755 mg/kg for 5 days per week. After 3 weeks, vehicle-treated mice exhibited an average tumour volume of 1840 ± 201 mm3 compared to 629 ± 86 mm3 in CAP-treated mice (Figure 2A), with a significant increase in tumour doubling time from 3.5 ± 0.5 days in vehicle to 7.5 ± 3.0 days in CAP-treated mice (P=0.0002; Figure 2B).

Reference: PLoS One. 2013 Jun 28;8(6):e67330. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3696095/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.