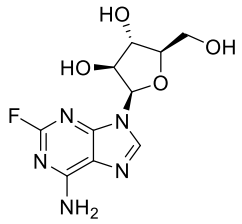
Product data sheet

MedKoo Cat#: 540138 Name: Fludarabine CAS#: 21679-14-1 Chemical Formula: $C_{10}H_{12}FN_5O_4$ Exact Mass: 285.0873 Molecular Weight: 285.23	
Product supplied as:	Powder
Purity (by HPLC):	≥ 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:
Fludarabine is an adenosine analong, DNA chain terminator, and inhibitor of ribonucleotide reductase, DNA ligase, DNA primase, and adenoside A1 receptors. It is use to treat leukemias and graft-versus host disease in transplant patients. It also induces cell cycle arrest and apoptosis in alloreactive bone marrow stromal cells.

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	30.38	106.51
DMSO:PBS (pH 7.2) (1:1)	0.50	1.75
DMF	3.3	11.57

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.51 mL	17.53 mL	35.06 mL
5 mM	0.70 mL	3.51 mL	7.01 mL
10 mM	0.35 mL	1.75 mL	3.51 mL
50 mM	0.07 mL	0.35 mL	0.70 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. Jiang H, Su Z, Datta S, Guarini L, Waxman S, Fisher P. Fludarabine phosphate selectively inhibits growth and modifies the antigenic phenotype of human glioblastoma-multiforme cells expressing a multidrug resistance phenotype. Int J Oncol. 1992 Jul;1(2):227-39. doi: 10.3892/ijo.1.2.227. PMID: 21584536.

In vivo study

1. Sorscher EJ, Hong JS, Allan PW, Waud WR, Parker WB. In vivo antitumor activity of intratumoral fludarabine phosphate in refractory tumors expressing E. coli purine nucleoside phosphorylase. Cancer Chemother Pharmacol. 2012 Aug;70(2):321-9. doi: 10.1007/s00280-012-1908-9. Epub 2012 Jul 4. PMID: 22760227; PMCID: PMC3423194.

7. Bioactivity
Biological target:
Fludarabine (NSC 118218) is a DNA synthesis inhibitor, which also inhibits phosphorylation of STAT1.

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In vitro activity

The effect of fludarabine phosphate (FLU) on in vitro growth, gene expression and the antigenic phenotype of human glioblastoma multiforme (GBM) cells displaying a multidrug sensitive and a multidrug resistant (MDR) phenotype. FLU exhibited a marked differential toxicity toward GBM-MDR cells versus the multidrug sensitive GBM parental cell line. Growth of GBM-MDR cells for seven days in 2.5 to 7.5 muM FLU resulted in a dose-dependent reduction or elimination of growth which persisted after removal of this agent. In contrast, recovery from FLU-induced growth suppression was observed in parental multidrug sensitive GBM cells. Acquisition of increased FLU sensitivity in GBM-MDR cells did not appear to result from selection for a subset of sensitive cells or an artifact associated with the DNA-transfection process. This conclusion is supported by the similar pattern of FLU resistance in GBM-18 clones isolated after transfection with a cloned hygromycin resistance gene and selection for resistance to hygromycin.

Reference: Int J Oncol. 1992 Jul;1(2):227-39. https://www.spandidos-publications.com/ijo/1/2/227

In vivo activity

Intratumoral administration of fludarabine phosphate (F-araAMP) in human tumor xenografts expressing E. coli PNP resulted in complete regressions and/or prolonged tumor inhibition. External beam radiation significantly augmented this effect. Injection of large human tumor xenografts (human glioma, nonsmall cell lung cancer, or malignant prostate tumors) with Ad/PNP followed by intratumoral F-araAMP resulted in excellent antitumor activity superior to that observed following systemic administration of prodrug.

Reference: Cancer Chemother Pharmacol. 2012 Aug;70(2):321-9. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/22760227/

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.