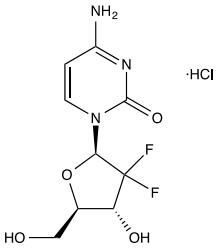
Catalog # 10-2140
Gemcitabine

CAS# 122111-03-9

2'-Deoxy-2',2'-difluorocytidine hydrochloride; dFdC

Lot # X105164



Gemcitabine is a clinically useful anticancer agent.[1] It exerts its cytotoxic effects *via* the metabolites gemcitabine diphosphate (dFdCDP) and gemcitabine triphosphate (dFdCTP). dFdCTP is an inhibitor of DNA polymerase and is also incorporated in DNA strands resulting in termination of chain elongation and apoptosis. dFdCDP is an inhibitor of ribonucleotide reductase which results in depletion of deoxyribonucleotides needed for DNA synthesis. Gemcitabine metabolites have also been reported to inhibit cytidine triphosphate synthetase (CTP synthetase)[2] and deoxycytidylate deaminase (dCMP deaminase)[3]. Topoisomerase 1 has also been shown to be a target for gemcitabine.[4]

1) Mini *et al.* (2006), *Cellular Pharmacology of Gemcitabine;* Ann.Oncol. **17** v7
2) Heinemann *et al.* (1995), *Gemcitabine: a modulator of intracellular nucleotide and deoxynucleotide metabolism*; Semin.Oncol. **22** 11
3) Heinemann *et al*. (1992), *Cellular elimination of 2',2'-difluorodeoxycytidine 5'triphosphate: a mechanism of self-potentiation*; Cancer Res. **52** 533
4) Pourquier *et al*. (2002), *Gemcitabine (2',2'-difluoro-2'-deoxycytidine), an antimetabolite that poisons topoisomerase I*; Clin.Cancer Res. **8** 2499

PHYSICAL DATA

Molecular Weight:	299.66
Molecular Formula:	$C_9H_{11}F_2N_3O_4 \cdot HCl$
Purity:	>98%
	NMR: (Conforms)
Solubility:	Soluble in DMSO (20 mg/ml) and water (>25 mg/mL)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20ºC for up to 1 year from the date of purchase. Store solutions at -20ºC for up to 1 month.

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