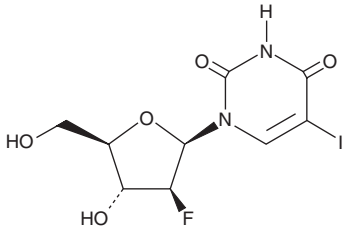
PRODUCT INFORMATION

Fialuridine

Item No. 15867

CAS Registry No.:	69123-98-4
Formal Name:	1-(2-deoxy-2-fluoro-β-D-arabinofuranosyl)-5-iodo-2,4(1H,3H)-pyrimidinedione
Synonyms:	FIAU, Fluoroiodoarauracil, 5-Iodo-2'-Fluoroarauracil, NSC 678514
MF:	$C_9H_{10}FIN_2O_5$
FW:	372.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 215, 282 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Fialuridine is supplied as a crystalline solid. A stock solution may be made by dissolving the fialuridine in the solvent of choice, which should be purged with an inert gas. Fialuridine is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of fialuridine in these solvents is approximately 15 and 20 mg/ml, respectively.

Fialuridine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, fialuridine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Fialuridine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Fialuridine (FIAU) is a nucleoside analog with antiviral activity. It inhibits thymidine kinases from herpes simplex virus types 1 and 2 with K_i values of 0.14 and 0.95 µM, respectively, while blocking green monkey Vero cell thymidine kinase less effectively (K_i = 53 µM).[1] FIAU blocks DNA synthesis in human cytomegalovirus and hepatitis B, as well as herpes simplex.[2-4] Notably, while FIAU has few adverse effects in several mammals, it causes mitochondrial toxicity leading to liver damage and death in humans.[5]

References

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2. Colacino, J.M. and Lopez, C. Efficacy and selectivity of some nucleoside analogs as anti-human cytomegalovirus agents. *Antimicrob. Agents Chemother.* **24(4)**, 505-508 (1983).
3. Staschke, K.A., Colacino, J.M., Mabry, T.E., *et al.* The in vitro anti-hepatitis B virus activity of FIAU [1-(2'-deoxy-2'-fluoro-1-β-D-arabinofuranosyl-5-iodo)uracil] is selective, reversible, and determined, at least in part, by the host cell. *Antiviral Res.* **23(1)**, 45-61 (1994).
4. Watanabe, K.A., Reichman, U., Hirota, K., *et al.* Nucleosides. 110. Synthesis and antiherpes virus activity of some 2'-fluoro-2'-deoxyarabinofuranosylpyrimidine nucleosides. *J. Med. Chem.* **22(1)**, 21-24 (1979).
5. Attarwala, H. TGN1412: From discovery to disaster. *J. Young Pharm.* **2(3)**, 332-336 (2010).

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