

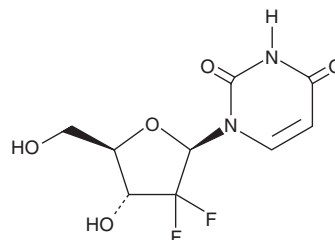
# PRODUCT INFORMATION



## 2',2'-Difluoro-2'-deoxyuridine

Item No. 11689

**CAS Registry No.:** 114248-23-6  
**Formal Name:** 2'-deoxy-2',2'-difluoro-uridine  
**Synonym:** dFdU  
**MF:** C<sub>9</sub>H<sub>10</sub>F<sub>2</sub>N<sub>2</sub>O<sub>5</sub>  
**FW:** 264.2  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 258 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

2',2'-Difluoro-2'-deoxyuridine is supplied as a crystalline solid. A stock solution may be made by dissolving the 2',2'-difluoro-2'-deoxyuridine in the solvent of choice, which should be purged with an inert gas. 2',2'-Difluoro-2'-deoxyuridine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 2',2'-difluoro-2'-deoxyuridine in ethanol is approximately 25 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 2',2'-difluoro-2'-deoxyuridine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 2',2'-difluoro-2'-deoxyuridine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

2',2'-Difluoro-2'-deoxyuridine is an active metabolite of the anticancer nucleoside analog gemcitabine (Item No. 11690).<sup>1</sup> It is formed by deamination of gemcitabine by cytidine deaminase in the liver. 2',2'-Difluoro-2'-deoxyuridine is cytotoxic to HepG2 and A549 cancer cells (IC<sub>50</sub>s = 3.13 and 3.92 μM, respectively). It enhances radiation-induced cell death of ECV304 and NCI H292 cells when used at concentrations ranging from 10 to 100 μM.<sup>2</sup>

### References

1. Veltkamp, S.A., Pluim, D., van Eijndhoven, M.A.J., *et al.* New insights into the pharmacology and cytotoxicity of gemcitabine and 2',2'-difluorodeoxyuridine. *Mol. Cancer Ther.* **7(8)**, 2415-2425 (2008).
2. Pauwels, B., Korst, A.E.C., Lambrechts, H.A.J., *et al.* The radiosensitising effect of difluorodeoxyuridine, a metabolite of gemcitabine, in vitro. *Cancer Chemother. Pharmacol.* **58(2)**, 219-228 (2006).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/19/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM