

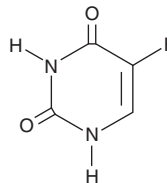
PRODUCT INFORMATION



5-Fluorouracil

Item No. 14416

CAS Registry No.: 51-21-8
Formal Name: 5-fluoro-2,4(1H,3H)-pyrimidinedione
Synonyms: 5-FU, NSC 19893, Ro 2-9757, U-8953
MF: C₄H₃FN₂O₂
FW: 130.1
Purity: ≥95%
UV/Vis.: λ_{max}: 266 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

5-Fluorouracil (5-FU) is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-FU in the solvent of choice, which should be purged with an inert gas. 5-FU is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 5-FU in these solvents is approximately 0.8, 53, and 60 mg/ml, respectively.

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 5-FU can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5-FU in PBS (pH 7.2) is approximately 8 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

5-FU is a prodrug form of the thymidylate synthase inhibitor fluorodeoxyuridylate (FdUMP).¹ It is also converted to the active metabolites FUTP and FdUTP, which induce RNA and DNA damage, respectively. *In vivo*, 5-FU (15 mg/kg) when administered in combination with docetaxel (Item No. 11637) reduces tumor growth in B88 and CAL 27 oral squamous cell carcinoma (OSCC) mouse xenograft models.² Formulations containing 5-FU have been used in the treatment of colorectal, breast, gastric, and pancreatic cancers.

References

1. Longley, D.B., Harkin, D.P., and Johnston, P.G. 5-fluorouracil: Mechanisms of action and clinical strategies. *Nat. Rev. Cancer* **3**(5), 330-338 (2003).
2. Tamatani, T., Ferdous, T., Takamaru, N., *et al.* Antitumor efficacy of sequential treatment with docetaxel and 5-fluorouracil against human oral cancer cells. *Int. J. Oncol.* **41**(3), 1148-1156 (2012).

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.

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