

## Certificate of Analysis

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**Product Name:** 5-Fluorouracil

**Catalog No.:** 3257

**Batch No.:** 4

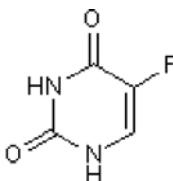
CAS Number: 51-21-8

EC Number: 200-085-6

IUPAC Name: 5-Fluoro-2,4-(1*H*,3*H*)-pyrimidinedione

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>4</sub>H<sub>3</sub>FN<sub>2</sub>O<sub>2</sub>  
**Batch Molecular Weight:** 130.08  
**Physical Appearance:** White solid  
**Solubility:** DMSO to 100 mM  
ethanol to 10 mM  
**Storage:** Store at +4°C  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 100% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	36.93	2.32	21.54
Found	37.06	2.24	21.39

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: 5-Fluoro-2,4-(1*H*,3*H*)-pyrimidinedione

**Description:**

Anticancer agent. Metabolized to form fluorodeoxyuridine monophosphate (FdUMP), fluorodeoxyuridine triphosphate (FdUTP) and fluorouridine (FUTP). FdUMP inhibits thymidylate synthase, causing a reduction in dTMP synthesis. FUTP and FdUTP are misincorporated into RNA and DNA respectively.

**Physical and Chemical Properties:**

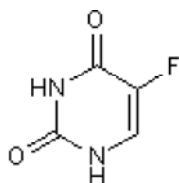
Batch Molecular Formula: C<sub>4</sub>H<sub>3</sub>FN<sub>2</sub>O<sub>2</sub>

Batch Molecular Weight: 130.08

Physical Appearance: White solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**Storage:** Store at +4°C

**CAUTION** - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

**Solubility & Usage Info:**

DMSO to 100 mM

ethanol to 10 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Longley *et al*** (2003) 5-Fluorouracil: mechanisms of action and clinical strategies. *Nat.Rev.Cancer* **3** 330. PMID: 12724731.

**Peters *et al*** (2002) Induction of thymidylate synthase as a 5-fluorouracil resistance mechanism. *Biochim.Biophys.Acta.* **1587** 194. PMID: 12084461.

**Ghoshal and Jacob** (1997) An alternative molecular mechanism of action of 5-fluorouracil, a potent anticancer drug. *Biochem.Pharmacol.* **53** 1569. PMID: 9264308.

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