

5-BROMO-2'-DEOXYURIDINE

Prod. No. B5002 and B9285

Storage Temperature -20°C

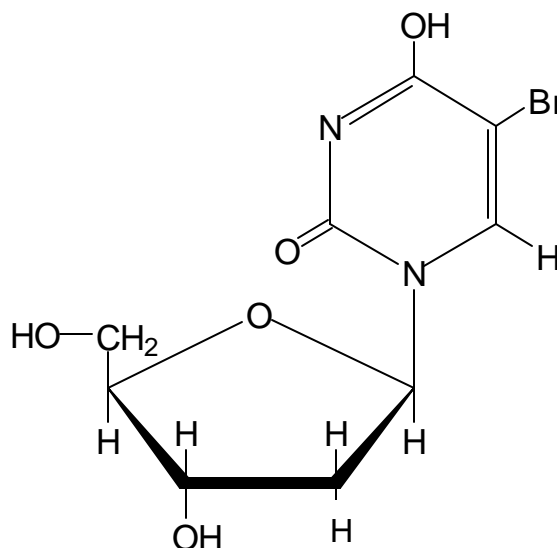
CAS NUMBER: 59-14-3

SYNONYMS: Br-dU, BUdR, 5-BrdU,
5-Bromodeoxyuridine**PHYSICAL PROPERTIES:**

Appearance: powder

Molecular Formula: $\text{C}_9\text{H}_{11}\text{BrN}_2\text{O}_5$

Molecular Weight: 307.1 (anhydrous)

 pK_a : 8.1¹Melting point: $187\text{-}189^{\circ}\text{C}^2$ $[\alpha_D]^{25} = +22.9^{\circ}$ (1% in water)³ E^{mM} (280 nm) = 9.9 (in 0.1 N HCl)⁴ E^{mM} (277 nm) = 7.2 (in 0.1 N NaOH)⁴ E^{mM} (280 nm) = 9.25 (in pH 2)¹**Description**

BrdU is a brominated analog of thymidine.

Stability / Storage as SuppliedBrdU should be stored at -20°C and desiccated.**Solubility / Solution Stability**

Sigma routinely tests the solubility at 50 mg/mL in 1 M ammonium hydroxide. It can be dissolved in water at a concentration of up to 10 mg/mL. It is also soluble in DMF, DMSO and water (with heat) at 50-100 mg/mL.

ApplicationsBrdU is selectively incorporated into cell DNA at the S phase of cell cycle. The use of BrdU as a thymidine analog has made possible the identification of DNA synthesis in suspensions of cells, cell smears and tissue sections. The incorporation of BrdU into DNA in place of thymidine is discussed by A.L. Givan.⁵BrdU at 0.16 to 500 $\mu\text{g}/\text{mL}$ of cell culture media produced inhibition of growth of KD cells (rabbit kidney cells). Effective inhibition at concentrations greater than 1.0 $\mu\text{g}/\text{mL}$ was observed.⁶ It is incorporated, in vivo, by injecting 10-100 mg/kg at 10 mg/mL in salineintraperitoneally.⁷ It is also incorporated into bone marrow cells in culture at a final concentration of 10 μM at 37°C for one hour. For incorporation to occur, the BrdU must be phosphorylated in the cell by thymidine kinase.⁸

FITC-conjugated second antibodies can be used with antibodies specific for BrdU (product B2531) which will make "new" DNA fluoresce green; denatured DNA can be stained with propidium iodide and will fluoresce red.

REFERENCES:

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4. Beltz, R.E. and Visser, V.W., *J. Amer. Chem. Soc.*, 77, 736-738 (1955).
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7. *Methods in Molecular Biology*, vol. 10, Chapter 43, 387-398 (1992).
8. Boccadoro, M. et al., *Tumori*, 72, 135-137 (1986).

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