

## Product Information

### 5-Bromo-2'-Deoxyuridine

Catalog Number **B5002**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

CAS RN 59-14-3

Synonyms: Br-dU, BUdR, 5-BrdU,  
5-Bromodeoxyuridine

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

Molecular Weight: 307.10 (anhydrous)

$\text{pK}_a$ : 8.1<sup>1</sup>

Melting point:  $187\text{--}189\text{ }^{\circ}\text{C}$ <sup>2</sup>

$[\alpha_D]^{25} = +22.9^{\circ}$  (1% in water)<sup>3</sup>

$E^{mM}$  (280 nm) = 9.9 (in 0.1 N HCl)<sup>4</sup>

$E^{mM}$  (277 nm) = 7.2 (in 0.1 N NaOH)<sup>4</sup>

$E^{mM}$  (280 nm) = 9.25 (in pH 2)<sup>1</sup>

#### Product Description

5-Bromodeoxyuridine (BrdU) is a brominated analog of thymidine. BrdU is selectively incorporated into cell DNA at the S phase of the cell cycle. The use of BrdU as a thymidine analog has facilitated the identification of DNA synthesis in suspensions of cells, cell smears, and tissue sections. A review on the incorporation of BrdU into DNA in place of thymidine has been published.<sup>5</sup>

BrdU at 0.16–500  $\mu\text{g}/\text{mL}$  of cell culture medium produced inhibition of growth of KD cells (rabbit kidney cells). Effective inhibition at concentrations  $>1.0\text{ }\mu\text{g}/\text{mL}$  was observed.<sup>6</sup> It is incorporated, *in vivo*, by injecting 10–100 mg/kg at 10 mg/mL in saline intraperitoneally.<sup>7</sup> BrdU is also incorporated into bone marrow cells in culture at a final concentration of 10  $\mu\text{M}$  at 37  $^{\circ}\text{C}$  for one hour. For incorporation to occur, the BrdU must be phosphorylated in the cell by thymidine kinase.<sup>8</sup>

FITC-conjugated secondary antibodies can be used with BrdU-specific antibodies, which will make "new" DNA fluoresce green. Denatured DNA can be stained with propidium iodide and will fluoresce red.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

The solubility of this product is routinely tested at 50 mg/mL in DMSO. One publication reports preparation of stock solutions of BrdU in water at 5 mg/mL.<sup>9</sup> Another publication reports preparation of stock solutions of BrdU in 40% ethanol at 20 mg/mL.<sup>10</sup>

#### Storage/Stability

BrdU should be stored at  $-20\text{ }^{\circ}\text{C}$  and desiccated.

#### References

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6. Littlefield, J.W., and Gould, E.A., *J. Biol. Chem.*, **235**, 1129-1133 (1960).
7. Wilson, G.D., *Methods in Molecular Biology – 10, Immunochemical Protocols* (M.M. Manson, ed.), Humana Press (Totowa, NJ), pp. 387-398 (1992).
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