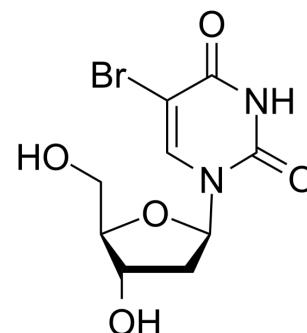


## 5-BrdU

Cat. No.:	HY-15910
CAS No.:	59-14-3
Molecular Formula:	C <sub>9</sub> H <sub>11</sub> BrN <sub>2</sub> O <sub>5</sub>
Molecular Weight:	307.10
Target:	Nucleoside Antimetabolite/Analog; DNA/RNA Synthesis
Pathway:	Cell Cycle/DNA Damage
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 250 mg/mL (814.07 mM; Need ultrasonic)  
H<sub>2</sub>O : 2 mg/mL (6.51 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		3.2563 mL	16.2813 mL	32.5627 mL
	5 mM		0.6513 mL	3.2563 mL	6.5125 mL
	10 mM		0.3256 mL	1.6281 mL	3.2563 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 14.29 mg/mL (46.53 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.08 mg/mL (6.77 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (6.77 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (6.77 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

5-BrdU (BrdU) is a nucleoside analog that competes with thymidine for incorporation into DNA. 5-BrdU is commonly used in the detection of proliferating cells.

#### In Vitro

Bromodeoxyuridine induces a progressive, dose-responsive suppression of cancer cell line and cancer stem cell population expansion RG2 rat glioma cells. In H9 cells and BJ fibroblasts, bromodeoxyuridine alters the cell cycle profile<sup>[1]</sup>. BrdU is stably integrated into the DNA, and thus can be used in assessment of cell proliferation and other cell procession<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Bromodeoxyuridine (300 mg/kg, i.p. or 0.8 mg/mL, p.o.) significantly slows tumor progression in rat glioma RG2 tumor model<sup>[1]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

#### Cell Assay <sup>[1]</sup>

Cultures are initially plated at 2000 cells/cm<sup>2</sup> and are quantified with a Z2 Coulter Counter. RG2 rat glioma cells are treated once with 0, 1, 10, or 50  $\mu$ M BrdU for 24 hours, and cumulative growth curves are obtained over 18 days. Control and treated cells are quantified and replated at equal densities on days 5, 12, and 18 after treatment.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell Res. 2020 Sep;30(9):732-744.
- Cell Res. 2019 Jan;29(1):23-41.
- J Clin Oncol. 2024 Oct 30;JCO2401266.
- Immunity. 2024 Mar 12;57(3):495-512.e11.
- Immunity. 2023 Mar 14;56(3):620-634.e11.

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## REFERENCES

[1]. Levkoff LH, et al. Bromodeoxyuridine inhibits cancer cell proliferation in vitro and in vivo. *Neoplasia*. 2008 Aug;10(8):804-16.

[2]. Rothausler K, et al. Assessment of cell proliferation by 5-bromodeoxyuridine (BrdU) labeling for multicolor flow cytometry. *Curr Protoc Cytom*. 2007 Apr;Chapter 7:Unit7.31

**Caution: Product has not been fully validated for medical applications. For research use only.**

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