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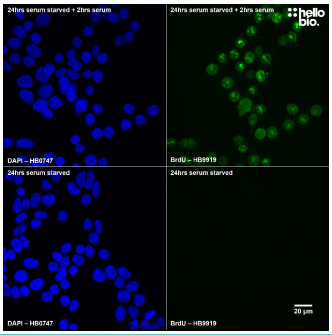
DATASHEET

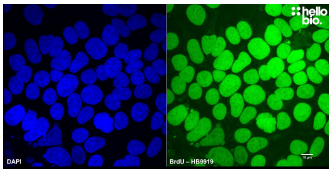
BrdU (5-Bromo-2′-deoxyuridine)

Product overview

Name	BrdU (5-Bromo-2′-deoxyuridine)
Cat No	HB0979
Alternative names	5-BrdU, 5-bromo-2'-deoxyuridine, Broxuridine
Biological action	Dyes & stains
Purity	>98%
Description	Thymidine analog. Widely used to identify proliferating cells, enhances Yamanaka factor reprogramming

Images





Biological Data

Biological description

Thymidine analog which is incorporated into DNA during DNA replication (during S-phase of cell cycle).

BrdU is used to identify proliferating cells. Labels cell lines and primary cell cultures in vitro and also cells in vivo. Suitable for in vivo use.

Widely used to study adult neurogenesis. Can be used in combination with neuron specific markers such as NeuN to identify newly formed neurons.

Frequently used to label and fate-map dividing cells in neural stem cell biology.

Application notes

#Protocol 1: Serum starved vs stimulated BrdU proliferation assay

- HEK293T cells were cultured until approximately 50% confluency in 10% FBS in DMEM before media was exchanged to pure DMEM for 24hrs.
- Cells were either left in DMEM (serum starved) or incubated in 20% FBS in DMEM (serum starved + stimulated) for 2hrs in the prescence of 10µM BrdU (HB0978).
- Cells were fixed in 4% PFA and then stained for BrdU using a monoclonal anti-BrdU antibody (HB9919) following our ICC protocol then imaged using a confocal microscope.

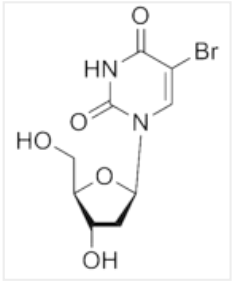
#Protocol 2: Proliferation of HEK293T cells visualised using BrdU

- BrdU cells were cultured in 10% FBS in DMEM in the prescence of 10µM BrdU (HB0978) for 5 days.
- Cells were fixed in 4% PFA and then stained for BrdU using a monoclonal anti-BrdU antibody (HB9919) following our ICC protocol then imaged using a confocal microscope.

Solubility & Handling

Storage instructions	-20°C
Solubility overview	Soluble in water (50mM) and in DMSO (100mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	5-Bromo-2-deoxyuridine
Molecular Weight	307.1
Chemical structure	
Molecular Formula	$C_9H_{11}BrN_2O_5$
CAS Number	59-14-3
PubChem identifier	6035
SMILES	C1[C@@H]([C@H](O[C@H]1N2C=C(C(=O)NC2=O)Br)CO)O
Source	Synthetic
InChi	InChI=1S/C9H11BrN2O5/c10-4-2-12(9(16)11-8(4)15)7-1-5(14)6(3-13)17-7/h2,5-7,13-14H,1,3H2,(H,11,15,16)/t5-,6+,7+/m0/s1
InChiKey	WOVKYSAHUYNSMH-RRKCRQDMSA-N
MDL number	MFCD00006529
Appearance	White solid

References

Pharmacological evaluation of intravenous delivery of 5-bromodeoxyuridine to patients with brain tumors.

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Neurogenesis in the adult human hippocampus.

Eriksson PS *et al* (1998) Nat Med 4(11)
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The dark side of BrdU in neural stem cell biology: detrimental effects on cell cycle, differentiation and survival.

Lehner B *et al* (2011) Cell Tissue Res 345(3)
PubMedID 21837406

BrdU assay for neurogenesis in rodents.

Wojtowicz JM et al (2006) Nature protocols 1
PubMedID 17406427

Running increases cell proliferation and neurogenesis in the adult mouse dentate gyrus.

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PubMedID 10195220