

BrdU (Bu20A): sc-20045

BACKGROUND

The halogenated pyrimidine thymidine analog bromodeoxyuridine (BrdU) is incorporated into newly synthesized DNA strands of S-phase cells and is useful for estimating the fraction of cells in S-phase. Additionally, the analysis of the uptake of BrdU is a reliable method to quantitate the degree of DNA-synthesis. BrdU is also useful for studying sister chromatid exchange and to isolate nascent DNA. UV-induced excision-repair synthesis is one method for incorporating BrdU into cellular DNA. Anti-BrdU antibodies bind to the exposed BrdU in single-stranded DNA after a hydrochloric acid denaturation step or nuclease digestion. Protease antigen recovery is necessary for most tissues or cells fixed with crosslinking agents such as formalin but may decrease the specificity of BrdU immunodetection.

REFERENCES

1. Morstyn, G., et al. 1983. Bromodeoxyuridine in tumors and chromosomes detected with a monoclonal antibody. *J. Clin. Invest.* 72: 1844-1850.
2. Cohn, S.M. and Lieberman, M.W. 1984. The use of antibodies to 5-bromo-2'-deoxyuridine for the isolation of DNA sequences containing excision-repair sites. *J. Biol. Chem.* 259: 12456-12462.
3. Magaud, J.P., et al. 1989. Double immunocytochemical labeling of cell and tissue samples with monoclonal anti-bromodeoxyuridine. *J. Histochem. Cytochem.* 37: 1517-1527.
4. Williamson, K., et al. 1994. Hydrochloric acid denaturation of colorectal tumour tissue infiltrated with bromodeoxyuridine. *Cytometry* 15: 162-168.
5. Bak, P.M. and Panos, R.J. 1997. Protease antigen recovery decreases the specificity of bromodeoxyuridine detection in formalin-fixed tissue. *J. Histochem. Cytochem.* 45: 1165-1170.
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SOURCE

BrdU (Bu20A) is a mouse monoclonal antibody raised against bromodeoxyuridine (BrdU) conjugated to a carrier protein.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BrdU (Bu20A) is available conjugated to either phycoerythrin (sc-20045 PE) or fluorescein (sc-20045 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

BrdU (Bu20A) is recommended for detection of BrdU, a proliferation marker incorporated into newly synthesized DNA during S-phase of a cell cycle, by flow cytometry (1 µg per 1 x 10⁶ cells); recognizes BrdU in denatured DNA of cells labeled with BrdU.

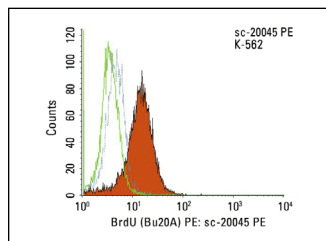
RESEARCH USE

For research use only, not for use in diagnostic procedures.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



BrdU (Bu20A) PE: sc-20045 PE. Intracellular FCM analysis of fixed and permeabilized untreated (dotted blue histogram) and BrdU treated (solid orange histogram) K-562 cells. Green line histogram represents the isotype control, normal mouse IgG₁-PE: sc-2866.

SELECT PRODUCT CITATIONS

1. Zindy, F., et al. 2006. N-Myc and the cyclin-dependent kinase inhibitors p18^{INK4C} and p27^{Kip1} coordinately regulate cerebellar development. *Proc. Natl. Acad. Sci. USA* 103: 11579-11583.
2. Poojan, S. and Kumar, S. 2011. Flow cytometry-based characterization of label-retaining stem cells following transplacental BrdU labelling. *Cell Biol. Int.* 35: 147-151.
3. Lin, P.K., et al. 2013. Involvement of SDF1a and Stat3 in granulocyte colony-stimulating factor rescues optic ischemia-induced retinal function loss by mobilizing hematopoietic stem cells. *Invest. Ophthalmol. Vis. Sci.* 54: 1920-1930.
4. Wang, J.W., et al. 2017. Transplantation with hypoxia-preconditioned mesenchymal stem cells suppresses brain injury caused by cardiac arrest-induced global cerebral ischemia in rats. *J. Neurosci. Res.* 95: 2059-2070.
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7. Yenmis, G., et al. 2021. Anti-cancer effect of metformin on the metastasis and invasion of primary breast cancer cells through mediating NFκB activity. *Acta Histochem.* 123: 151709.
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CONJUGATES

See **BrdU (IIB5): sc-32323** for BrdU antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.