iFluor™ 594 Conjugated Anti-BrdU Antibody [PSH0-18] HA720187F

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Species independent
Applications:	IF-Tissue, FC
Clone number:	PSH0-18

Description: Bromodeoxyuridine (5-bromo-2'-deoxyuridine, BrdU, BUdR, BrdUrd, broxuridine) is a synthetic nucleoside analogue with a chemical structure similar to thymidine. BrdU is commonly used to study cell proliferation in living tissues and has been studied as a radiosensitizer and diagnostic tool in people with cancer. During S phase of the cell cycle (when DNA replication occurs), BrdU can be incorporated in place of thymidine in newly synthesized DNA molecules of dividing cells. Cells that have recently performed DNA replication or DNA repair can be detected with antibodies specific for BrdU using techniques such as immunohistochemistry or immunofluorescence. BrdU-labelled cells in humans can be detected up to two years after BrdU infusion. Because BrdU can replace thymidine during DNA replication, it can cause mutations, and its use is therefore potentially a health hazard. However, because it is neither radioactive nor myelotoxic at labeling concentrations, it is widely preferred for in vivo studies of cancer cell proliferation. However, at radiosensitizing concentrations, BrdU becomes myelosuppressive, thus limiting its use for radiosensitizing. BrdU differs from thymidine in that BrdU substitutes a bromine atom for thymidine's CH3 group. The Br substitution can be used in X-ray diffraction experiments in crystals containing either DNA or RNA. The Br atom acts as an anomalous scatterer and its larger size will affect the crystal's X-ray diffraction enough to detect isomorphous differences as well. Bromodeoxyuridine releases gene silencing caused by DNA methylation. DNA with BrdU transcribes as usual DNA, with guanine included into RNA as a complement to BrdU.

Conjugate:	iFluor™ 594, Amax: 587nm; Emax: 603nm.
Immunogen:	BrdU-OVA
Positive control:	BrdU treated mouse embryo tissue.
Subcellular location:	Nucleus.
Recommended Dilutions:	
IF-Tissue	1:200
FC	1:1,000
Storage Buffer:	Preservative: 0.02% Sodium azide Constituents: 30% Glycerol, 1% BSA, 68.98% PBS.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Protein A affinity purified.

Images

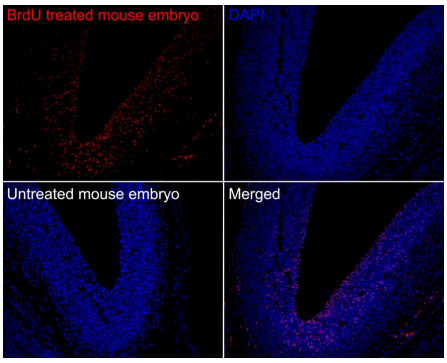

Fig1: Immunofluorescence analysis of paraffin-embedded BrdU treated/untreated mouse embryo tissue labeling BrdU with Rabbit anti-BrdU antibody (HA720187F) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA720187F, red) at 1/200 dilution overnight at 4 ℃, washed with PBS. Nuclei were counterstained with DAPI (blue).

Background References

1. Wang T et al. Unexpected BrdU inhibition on astrocyte-to-neuron conversion. Neural Regen Res. 2022 Jul
2. Yu J et al. BrdU Incorporation Assay to Analyze the Entry into S Phase. Methods Mol Biol. 2022