# Datasheet: MCA2483GA

## BATCH NUMBER 164276

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| **Description:** | MOUSE ANTI BrdU |
| **Specificity:** | BrdU |
| **Other names:** | 5-BROMODEOXYURIDINE |
| **Format:** | Purified |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | Bu20a |
| **Isotype:** | IgG1 |
| **Quantity:** | 0.1 mg |

## Product Details

**Applications**

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

| | Yes | No | Not Determined | Suggested Dilution |
|---|---|---|---|---|
| Flow Cytometry (1) | ▪ | | | 1/25 - 1/100 |
| Immunohistology - Frozen | ▪ | | | |
| Immunohistology - Paraffin | ▪ | | | |
| Immunofluorescence | ▪ | | | |
| Immunocytochemistry (2) | ▪ | | | 1/25 - 1/100 |

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

(1) Flow Cytometry protocols can be found at:
www.bio-rad-antibodies.com/brdu-clone-bu20a-flow-cytometry-protocol
www.bio-rad-antibodies.com/brdu-staining-cell-cycle-protocol

(2) BrdU labeling and immunostaining protocol can be found at:
www.bio-rad-antibodies.com/brdu-labeling-and-immunostaining-protocol

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| **Target Species** | Chemical |
| **Product Form** | Purified IgG - liquid |
| **Preparation** | Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant |

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| **Buffer Solution** | Phosphate buffered saline |
| **Preservative Stabilisers** | 0.09% Sodium Azide ($NaN_3$) |
| **Carrier Free** | Yes |
| **Approx. Protein Concentrations** | IgG concentration 1.0 mg/ml |
| **Immunogen** | Bromodeoxyuridine conjugated to BSA |
| **Fusion Partners** | Spleen cells from immunized Balb/c mice were fused with cells of the NS1 myeloma cell line |
| **Specificity** | **Mouse anti BrdU antibody, clone Bu20a** recognizes bromodeoxyuridine (known as BrdU or BrdUrd). BrdU is a synthetic thymidine analog, which is incorporated to new DNA during replication instead of thymidine. BrdU can therefore be used to identify newly synthesized DNA. Mouse anti BrdU antibody, clone Bu20a, recognizes BrdU and other thymidine analogs; 5′-chloro-2′-deoxyuridine (CldU), 5′-iodo-2′-deoxyuridine (IdU) and 2′-deoxy-5-ethynyluridine (EdU), but only shows minimal reactivity with thymidine itself (Aten *et al*. 1992, Liboska *et al*. 2012, Magaud *et al*. 1989).<br><br>Antibody detection of incorporated BrdU in cellular DNA is extensively referenced as an accurate method to monitor cell proliferation *in vivo* and *in vitro*. In cell proliferation assays BrdU staining is coupled with the use of a dye that binds total DNA such as propidium iodide (PI). BrdU can be administered diluted in the culture medium or, *in vivo* via intraperitoneal injection, subcutaneous osmotic pump implants (Tesfaigzi *et al*. 2004) or in drinking water (Moser *et al*. 2004).<br><br>BrdU can be used as a thymidine analog in a wide range of organisms ranging from mammalian cells, through reptiles and amphibians to invertebrate species and plants. Mouse anti BrdU antibody, clone Bu20a, is suitable for detecting incorporated BrdU in a wide variety of cell types and is suitable for use on tissue sections in double-labeling techniques (Makarev and Gorivodsky 2014). |
| **Flow Cytometry** | Use 10µl of the suggested working dilution to label $1x10^6$ cells in 100µl |
| **References** | 1. Xie, L.L. *et al.* (2009) Aquaporin 4 knockout resists negative regulation of neural cell proliferation by cocaine in mouse hippocampus. Int J Neuropsychopharmacol. 12 (6): 843-50.<br>2. Wohl, S.G. *et al.* (2009) Optic nerve lesion increases cell proliferation and nestin expression in the adult mouse eye *in vivo*. Exp Neurol. 219 (1): 175-86.<br>3. Innis, S.M. *et al.* (2010) Perinatal lipid nutrition alters early intestinal development and programs the response to experimental colitis in young adult rats. Am J Physiol Gastrointest Liver Physiol. 299 (6): G1376-85.<br>4. Caronia, G. *et al.* (2010) Bone morphogenetic protein signaling in the developing telencephalon controls formation of the hippocampal dentate gyrus and modifies |

fear-related behavior. J Neurosci. 30: 6291-301.
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6. Sato, Y. *et al.* (2013) Grafting of neural stem and progenitor cells to the hippocampus of young, irradiated mice causes gliosis and disrupts the granule cell layer. Cell Death Dis. 4: e591.
7. Pappalardo, L.W. *et al.* (2014) Voltage-gated sodium channel Nav 1.5 contributes to astrogliosis in an in vitro model of glial injury via reverse Na+ /Ca2+ exchange. Glia. 62 (7): 1162-75.
8. Kent BA *et al.* (2015) The orexigenic hormone acyl-ghrelin increases adult hippocampal neurogenesis and enhances pattern separation. Psychoneuroendocrinology. 51: 431-9.
9. Laitman, B.M. *et al.* (2016) The Transcriptional Activator Krüppel-like Factor-6 Is Required for CNS Myelination. PLoS Biol. 14 (5): e1002467.
10. Li, Q. *et al.* (2017) Induced Neural Activity Promotes an Oligodendroglia Regenerative Response in the Injured Spinal Cord and Improves Motor Function after Spinal Cord Injury. J Neurotrauma. 34 (24): 3351-61.
11. Kim, H.N. *et al.* (2017) Comparative analysis of the beneficial effects of treadmill training and electroacupuncture in a rat model of neonatal hypoxia-ischemia. Int J Mol Med. 39 (6): 1393-402.
12. Furukawa, S. *et al.* (2017) Databases for technical aspects of immunohistochemistry. J Toxicol Pathol. 30 (1): 79-107.
13. Zhang, J. *et al.* (2018) The mechanisms underlying olfactory deficits in apolipoprotein E-deficient mice: focus on olfactory epithelium and olfactory bulb. Neurobiol Aging. 62: 20-33.
14. Berger, S. *et al.* (2020) Severe hydroxymethylbilane synthase deficiency causes depression-like behavior and mitochondrial dysfunction in a mouse model of homozygous dominant acute intermittent porphyria. Acta Neuropathol Commun. 8 (1): 38.
15. Wei, Z.Z. *et al.* (2021) DL-3-n-butylphthalide Increases Collateriogenesis and Functional Recovery after Focal Ischemic Stroke in Mice. Aging Dis. 12 (7): 1835-49.
16. Lee, H.J. *et al.* (2022) Effects of electroacupuncture on the functionality of NG2-expressing cells in perilesional brain tissue of mice following ischemic stroke Neural Regeneration Research. 17 (7): 1556.
17. Sideromenos, S. *et al.* (2022) The metabolic regulator USF-1 is involved in the control of affective behaviour in mice. Transl Psychiatry. 12 (1): 497.
18. Gundacker, A. *et al.* (2023) Early-life iron deficiency persistently disrupts affective behaviour in mice. Ann Med. 55 (1): 1265-77.

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| **Storage** | This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.<br><br>Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended. |
| **Guarantee** | 12 months from date of despatch |
| **Health And Safety Information** | Material Safety Datasheet documentation #10040 available at: https://www.bio-rad-antibodies.com/SDS/MCA2483GA |

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| | 10040 |
| **Regulatory** | For research purposes only |

## Related Products

### Recommended Secondary Antibodies

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| Rabbit Anti Mouse IgG (STAR12...) | RPE |
| Rabbit Anti Mouse IgG (STAR13...) | HRP |
| Goat Anti Mouse IgG (H/L) (STAR117...) | FITC |
| Rabbit Anti Mouse IgG (STAR9...) | FITC |

### Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)


**North & South America** Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com

**Worldwide** Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com

**Europe** Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com


To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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