

Anti-Human MAP2 (MAP-2) Antibody, Polyclonal

Rabbit polyclonal antibody against human MAP2, unconjugated

Catalog #100-1342

100 µL

Product Description

This rabbit polyclonal antibody reacts with human microtubule-associated protein 2 (MAP2), a protein involved in microtubule stabilization and developmental dendritic arborization. MAP2 is a member of the microtubule-associated protein family and the most abundant MAP protein in neurons. In rodents, alternative splicing of the gene results in the creation of three different isoforms: MAP2A, MAP2B, and MAP2C. MAP2C is primarily expressed in early-stage development of dendrites; over time, they are replaced by MAP2. Alternative splicing of MAP2 has been implicated in the development of various neurodegenerative disorders, such as Huntington's disease. In addition, patients experiencing transmissible spongiform encephalopathies (TSEs), such as fatal familial insomnia (FFI) and Creutzfeld-Jakob disease, had near undetectable levels of MAP2, indicating that the decline of MAP2 may be a hallmark sign of the development of TSEs.

Target Antigen:	MAP2
Alternative Names:	MAP-2, MAP2A, MAP2B, MAP2C
Gene ID:	4133
Species Reactivity:	Human
Host Species:	Rabbit
Clonality:	Polyclonal
Clone:	Not applicable
Isotype:	Not applicable
Immunogen:	Synthetic peptide of human MAP2 N-terminus
Conjugate:	Unconjugated

Applications

Verified Applications: ICC/IF

Special Applications: This antibody clone has been verified for labeling MAP2-positive human pluripotent stem cell (hPSC)-derived forebrain-type neurons generated with STEMdiff™ Forebrain Neuron Differentiation Kit (Catalog #08600) and STEMdiff™ Forebrain Neuron Maturation Kit (Catalog #08605).

Abbreviations: CellSep: Cell separation; ChIP: Chromatin immunoprecipitation; FA: Functional assay; FACS: Fluorescence-activated cell sorting; FC: Flow cytometry; FCXM: Flow cytometric crossmatch assay; FISH: Fluorescence in situ hybridization; ICC: Immunocytochemistry; IF: Immunofluorescence microscopy; IHC: Immunohistochemistry; IHC-F: Immunohistochemistry (frozen-tissue); IHC-P: Immunohistochemistry (paraffin-embedded); IP: Immunoprecipitation; NMR: Nuclear magnetic resonance spectroscopy; RIA: Radioimmunoassay; WB: Western blotting

Properties

Product Formulation: Phosphate-buffered solution

Purification: The antibody was purified by affinity chromatography.

Stability and Storage: Product stable at -20°C when stored undiluted. Avoid repeated freeze-thaw cycles. Stable until expiry date (EXP) on label.

Directions for Use: The suggested use of this antibody is: ICC/IF, 1 - 2 µg/mL. It is recommended that the antibody be titrated for optimal performance for each application. For antibody concentration, refer to the lot-specific Certificate of Analysis at www.stemcell.com/coa.

Data

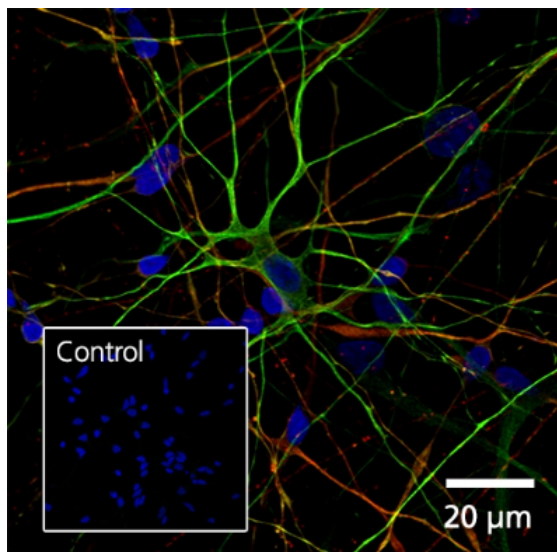


Figure 1. Mature Human Forebrain Neurons Stained with Anti-Human MAP2 Antibody, Polyclonal

Forebrain-type neurons were generated from hPSC-derived neural progenitor cells using STEMdiff™ Forebrain Neuron Differentiation Kit for 7 days and subsequently matured for the following 5 weeks using STEMdiff™ Forebrain Neuron Maturation Kit. Mature forebrain neurons were then fixed and labeled with Anti-Human MAP2 Antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (green) (Catalog #100-1082). Co-staining with Anti-Beta-Tubulin III Antibody, Clone TUJ1 (red) (Catalog #60052) shows the Anti-Human MAP2 Antibody is specific for mature neurons. Nuclei were counterstained with DAPI (blue). Inset shows forebrain-type neurons labeled with a rabbit IgG isotype control antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (with DAPI staining).

Related Products

For a complete list of antibodies, including other conjugates, sizes, and clones, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/antibodies, or contact us at techsupport@stemcell.com.

References

- Cabrera JR & José JL. (2017) MAP2 splicing is altered in Huntington's disease. *Brain Pathology* 27(2): 181–9.
- Guo Y et al. (2012) Remarkable reduction of MAP2 in the brains of scrapie-infected rodents and human prion disease possibly correlated with the increase of calpain. *PLOS One* 17(1): e30163.
- Kim Y et al. (2020) Microtubule-associated protein 2 mediates induction of long-term potentiation in hippocampal neurons. *The FASEB Journal* 34(5): 6965–83.

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