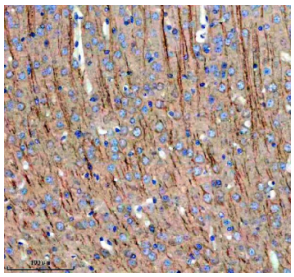
# MAP1B Antibody / Microtubule-associated protein 1B (FY13099)

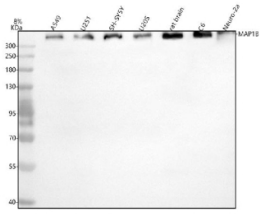
| Catalog No. | Formulation | Size |
|---|---|---|
| FY13099 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**Bulk quote request**

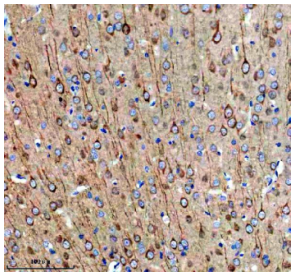
| | |
|---|---|
| **Availability** | 1-2 days |
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Lyophilized |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Immunogen affinity purified |
| **Buffer** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4. |
| **UniProt** | P46821 |
| **Applications** | Western Blot: 0.25-0.5ug/ml<br>Immunohistochemistry: 2-5ug/ml<br>Immunofluorescence: 5ug/ml<br>Flow cytometry: 1-3ug/million cells<br>ELISA: 0.1-0.5ug/ml |
| **Limitations** | This MAP1B antibody is available for research use only. |



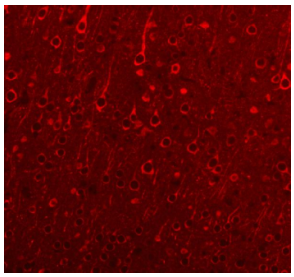
Immunohistochemical staining of MAP1B using anti-MAP1B antibody. MAP1B was detected in a paraffin-embedded section of mouse brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-MAP1B antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



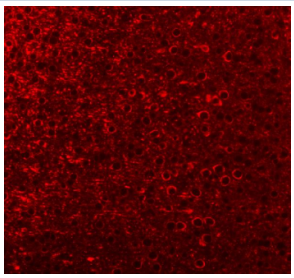
Western blot analysis of MAP1B using anti-MAP1B antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human whole cell lysates, Lane 2: human U251 whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: human U20S whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat C6 whole cell lysates, Lane 7: mouse Neuro-2a whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MAP1B antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The antibody detects a major band migrating above 300 kDa, consistent with the full-length MAP1B heavy chain. Although MAP1B has a predicted molecular weight of ~271 kDa, its migration is retarded on SDS-PAGE due to its highly unstructured and acidic nature as well as extensive phosphorylation in neuronal tissues. The observed >300 kDa signal therefore represents the mature, phosphorylated MAP1B form, in agreement with prior studies reporting similar mobility shifts.



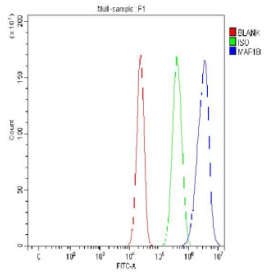
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Immunofluorescent staining of MAP1B using anti-MAP1B antibody (red). MAP1B was detected in a paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 4 ug/ml rabbit anti-MAP1B antibody overnight at 4oC. HRP conjugated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. Tyramide signal amplification was performed using TSA 620 reagent at 1:200 dilution at room temperature for 10 minutes. Visualize using a fluorescence microscope and filter sets appropriate for the label used. Fluorescence signals were visualized using a fluorescence microscope with filter sets appropriate for TSA 620 and DAPI.



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Flow Cytometry analysis of cells using anti-MAP1B antibody. Overlay histogram showing cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-MAP1B antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

## Description

MAP1B antibody detects Microtubule-associated protein 1B, a neuronal cytoskeletal protein that regulates microtubule stability, axon guidance, and neuronal differentiation. The UniProt recommended name is Microtubule-associated protein 1B (MAP1B). This large microtubule-binding protein plays an essential role during nervous system development by stabilizing and organizing microtubule networks within axons and dendrites.

Functionally, MAP1B antibody identifies a precursor protein of approximately 2,460 amino acids that is proteolytically cleaved into heavy and light chains. These subunits assemble with microtubules and actin filaments, promoting cytoskeletal crosslinking. MAP1B is enriched in developing neurons, where it modulates growth cone dynamics and neurite outgrowth, influencing axonal pathfinding and regeneration.

The MAP1B gene is located on chromosome 5q13.2 and is highly expressed in the central and peripheral nervous systems. MAP1B associates with other neuronal cytoskeletal proteins, such as tau and MAP2, to regulate polymerization and microtubule stability. Phosphorylation of MAP1B by kinases including GSK3 and CDK5 modulates its binding affinity and spatial localization, fine-tuning neuronal polarity and maturation.

Pathologically, aberrant MAP1B expression or phosphorylation is associated with neurodevelopmental and neurodegenerative diseases, including AlzheimerÃ¯Â¿Â½s and ParkinsonÃ¯Â¿Â½s disease. In tumor cells, MAP1B re-expression correlates with altered cytoskeletal organization and invasiveness. Research using MAP1B antibody supports studies in axonal transport, cytoskeletal remodeling, and neuronal repair mechanisms.

MAP1B antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect neuronal microtubule-associated proteins. NSJ Bioreagents offers MAP1B antibody reagents optimized for neurobiology, cytoskeletal, and developmental research applications.

Structurally, Microtubule-associated protein 1B contains multiple microtubule-binding domains and an actin-binding region, facilitating cytoskeletal integration. Its dynamic phosphorylation pattern determines its localization and activity during neuron growth and regeneration. This antibody provides a reliable tool to examine MAP1B's regulatory functions in cytoskeletal organization and axonal development.

## Application Notes

Optimal dilution of the MAP1B antibody should be determined by the researcher.

## Immunogen

E.coli-derived human MAP1B recombinant protein (Position: H102-R1849) was used as the immunogen for the MAP1B antibody.

## Storage

After reconstitution, the MAP1B antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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