Product Information Sheet

Anti-MAP1b Antibody, Mouse Monoclonal

Clone AA6, purified from hybridoma cell culture

SAB4200877

Product Description

Anti-MAP1b Monoclonal (MAP5) (mouse IgG1 isotype) is derived from the AA6 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Rat brain microtubule associated proteins (MAPs) were used as the immunogen. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Cat. No. ISO2). The antibody is purified from culture supernatant of hybridoma cells.

Anti-MAP1b Monoclonal antibody is immunospecific for MAP1b (also known as MAP5, MAPIX or MAP1.2)[1,2] as determined by an immunoblot assay. Addition of antibody to microtubule proteins before polymerization results in abnormally short (but otherwise morphologically normal) microtubules.[3] Immunohistochemical staining of brain tissue with the product shows selective labeling of dendritic trees throughout the brain. Monoclonal Anti-MAP1b reacts with human, rat, mouse, bovine, hamster, chicken and cat tissue or cells and has been applied in immunohistology using immunofluorescent or immunoperoxidase labeling methods. Monoclonal Anti-MAP1b does not react with tubulin of other microtubule associated proteins.

MAP1b is the major microtubule associated protein in developing brain which changes its expression during development. In the newborn rat brain, it is a major component of microtubules but in the adult its level is ten-fold lower.[1] This change in the level of expression occurs simultaneously with neuronal maturation. In cultured PC12 cells MAP1b increases ten-fold after nerve growth factor (NGF) treatment. This increase can be correlated with the NGF-induced outgrowth of neurites. MAP1b is the first MAP to appear in growing axons during development as it is present from the first emergence of the nascent axon from the cell body.[4]

Monoclonal Anti-MAP1b may be used to study MAP expression and cytological localization both in tissues and cell lines, under different developmental and environmental circumstances. The antibody may be uses to localize MAP1b, a marker of neurite outgrowth, since its level of expression, increases simultaneously with axon and dendrite growth during brain development.[5] Since MAP1b levels increase during differentiation of cultured neurons including PC12 cells and human neuroblastoma (SNKH cells). Monoclonal Anti-MAP1b may be used to assay the net process formation replacing morphological measurement with the convenience and accuracy of an immunoassay.[1]

Reagents

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~ 1.2 mg/mL.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: A working concentration of 2.0-4.0 mg/mL is recommended using lysates of PC12 cells treated with Nerve Growth Factor (NGF).

Recommendation: For immunoblotting, we advise diluting the antibody in PBS containing 0.5% non-fat dry milk and 0.05% Tween® 20.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

1. Riederer, B., et al., J. Neurocytol, 15, 763 (1986).
2. Tucker, R.P., et al., J. Comp. Neurol., 271, 44 (1988).
3. Matus, A., et al., J. Neurochem., 49, 714 (1987).
4. Goold R.G., Gordon-Weeks P.R., J. Cell Sci., 4273, 114 (2001).
5. Franzen R.et al., J. Cell Biology, 893, 155 (2001).

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