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MOUSE ANTI-TAU-1 MONOCLONAL ANTIBODY

CATALOG NUMBER: MAB3420 (formerly Roche Catalog Number 1289977)

LOT NUMBER:

QUANTITY: 100 μg

CONCENTRATION: 1 mg/mL

SPECIFICITY: MAB3420 binds to all known electrophoretic species of tau in human, rat and bovine brain (one-dimensional SDS-PAGE).

BACKGROUND: **Cellular and subcellular localization**: *In situ*, anti-tau-1 has a stringent specificity for the axons of neurons. The antibody does not stain the cell bodies or dendrites of neurons, nor does it stain any other cell type (4). However, this *in vivo* intracellular specificity is not maintained in culture: anti-tau-1 stains the axon, cell bodies, and dendrites of rat hippocampal neurons grown in culture (5).

The specificity of anti-tau-1 was originally thought to represent the restricted expression of tau to axons. Later studies revealed that this specificity is dependant on the state of phosphorylation. In dephosphorylated samples (samples treated with alkaline phosphatase) anti-tau-1 stains astrocytes, perineuronal glial cells, and the axons, cell bodies and dendrites of neurons, while in untreated samples, anti-tau-1 stains only axons (6). (The epitope recognized by anti-tau-1 is probably at or near a phosphorylated site.)

IMMUNOGEN: Purified denatured bovine microtubule associated proteins.

ISOTYPE: IgG_{2a}

CLONE NAME: Tau-1 (PC1C6, reference 4)

APPLICATIONS: Western blot: Bovine brain microtubule proteins purified by two cycles of assembly and disassembly (9) are dissolved in SDS-PAGE sample buffer. Five micrograms of the microtuble preparation per lane is loaded onto a 4% to 20% SDS-PAGE gradient gel along side molecular weight markers (14.3 – 200 kD). After separation by electrophoresis, the proteins are blotted onto nitrocellulose. Tau is detected as a series of 5 bands (52-68 kD) with approximately 5 ng/mL of anti-tau-1.
Immunohistochemistry: 5 μg/mL
Optimal working dilutions must be determined by end user.

SPECIES REACTIVITIES: Human, rat and bovine.

FORMAT: Purified immunoglobulin.

PRESENTATION: Liquid. Buffer = 10 mM potassium phosphate, 70 mM NaCl, pH 7.4.

STORAGE/HANDLING: Maintain frozen at -20°C in undiluted aliquots for up to 12 months after date of receipt. Avoid repeated freeze/thaw cycles.

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Immunohistochemistry Protocol

Dephosphorylation of tissue sections (optional)

Dephosphorylation with alkaline phosphatase is recommended for staining neurofibrillary tangles in Alzheimer's brain tissue with anti-tau-1 (6). This treatment changes the staining pattern of anti-tau-1 to include cell bodies, dendrites and axons of neurons. In untreated samples, anti-tau-1 stains axons only.

1. Incubate tissue sections at +32°C for 2.5 hours with constant agitation in the following solution: 100 mM Tris-HCl, pH 8.0; 130 units/mL alkaline phosphatase, 1 mM PMSF, 10 μg/mL pepstatin and 10 μg/mL leupeptin.
2. Rinse sections twice, 3 min per rinse, with 100 mM Tris-HCl, pH 8.0.

Anti-tau-1 staining

1. Block non-specific binding by incubating sections in PBS containing 1% (v/v) normal animal serum, and 0.03% (w/v) Triton X-100. The animal serum should be from the same species as the secondary antibody.
2. Rinse 3 times with PBS, 3 min per rinse.
3. Incubate sections with anti-tau-1, approximately 5 μg/mL, diluted in PBS containing 1% (v/v) normal animal serum.
4. Wash with PBS, changing the solution 3 times over a 3 min period.
5. Detect with a standard secondary antibody detection system (10-13).

Important Note: *During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200 μL or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.*

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