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Product Information

Monoclonal Anti-Tau, First N-terminal Insert Clone DC 39N1

produced in mouse, purified immunoglobulin

Catalog Number **T8451**

Monoclonal Anti-Tau, First N-terminal Insert, Clone DC 39N1 (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma NSO cells and BALB/c mice immunized with first tau insert (N1)

The antibody recognizes N1 insert in human tau proteins (isoforms 2N4R, 1N4R, 2N3R, 1N3R). The product is useful in immunoblotting, immunoprecipitation, immuno-histochemistry, flow cytometry, RIA and ELISA.

Tau is a neuronal microtubule-associated protein found predominantly on axons. The function of tau is to promote tubulin polymerization and stabilize microtubules. Tau, in its hyperphosphorylated form, is the major component of paired helical filaments (PHF), the building block of neurofibrillary lesions in Alzheimer's disease (AD) brain.

A novel monoclonal antibody (clone DC39N1) is specific for tau protein N-terminal insert N1, residues 45-73.¹ Species analysis revealed that this antibody did not recognize tau proteins derived from rat, mouse, bovine, swine and rabbit brain tissues. The antibody recognized all and only those human tau isoforms that contain a tau N1 insert. DC39N1 epitope on paired helical filaments from the brain of patients with Alzheimer's disease is phosphorylation independent. Immunohistochemical analysis of Braak stages with novel antibody revealed the presence of tau amino-terminal N1 insert during evolution of neurofibrillary degeneration from early to late stages of Alzheimer's disease. Monoclonal Anti-Tau, First N-terminal Insert, stained pretangles present in the brains of AD patients in preclinical (2nd stage) as well as late stages of Alzheimer's disease (6th stage).^{1,2}

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Reagent

Supplied as a solution in serum-free DMEM (without sodium pyruvate and sodium bicarbonate) containing 0.1% thimerosal as a preservative.

Storage/Stability

For extended storage, freeze undiluted at -20 °C. Repeated freezing and thawing, or 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; ELISA: recommended dilution 1:2000.
Immunohistochemistry: recommended dilution 1:1000.

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

References

1. Mikulova K, et al., Novel Anti-tau Monoclonal antibody With Specificity for N1 Terminal Insert. *Neurobiology of Aging*, **25**, S432-S434, (2004).
2. Soltys, K., et al., First insert of tau protein is present in all stages of tau pathology in Alzheimer's disease. *Neuroreport*. **16**, 1677-1681 (2005).
3. Alonso, A.D., et al. Interaction of tau isoforms with Alzheimer's disease abnormally hyperphosphorylated tau and *in vitro* phosphorylation into the disease-like protein. *J. Biol. Chem.* **276**, 37967-37973 (2001),
4. Mandelkow, E. Alzheimer's disease. The tangled tale of tau. *Nature*, **402**, 588-589 (1999).

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