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ProductInformation

Monoclonal Anti-Tau-410, C-terminal
Clone DC 39
produced in mouse, purified immunoglobulin

Catalog Number **T8326**

Product Description

Monoclonal Anti-Tau-410, C-terminal, Clone DC 39 (IgG1 isotype) is derived from mouse myeloma NSO cells of BALB/c mice immunized with human tau isoform 39 (Tau-410).

Monoclonal Anti-Tau-410, C-terminal, recognizes the C-terminus of tau protein. It reacts with the non-phosphorylated as well as phosphorylated tau isoforms. The antibody reacts with human, pig, rat, bovine, rabbit and mouse tau protein, 45 - 68 kDa, amino acids 401-441. It shows no cross-reactivity with other MAPs or tubulin. The product is useful in immunoblotting, immunohistochemistry, immunofluorescence, RIA and ELISA.

There are two major classes of heat stable MAPs: MAP2 with a molecular weight of 28 kDa and tau with a molecular weight of 55-65 kDa. Both classes of heat stable MAPs have a role in the regulation of microtubule polymerization in cells.

Tau is a neuronal microtubule-associated protein found predominantly on axons. Tau promotes assembly and stabilizes neuronal microtubules under normal physiological conditions, but under pathological conditions can also undergo modifications such as hyperphosphorylation that can result in the generation of aberrant aggregates, such as found in neurofibrillary tangles in Alzheimer's disease.[1] Six isoforms have been found that differ from each other in having either 3 or 4 binding repeats (R) of 31-32 amino acids, and from zero to 3 amino terminal inserts (N) of 29 amino acids each.[2,3]

Hyperphosphorylated tau is also found in neurofibrillary lesions in a range of other central nervous system disorders. Hyperphosphorylation impairs the microtubule binding function of tau, resulting in the destabilization of microtubules in AD brains, ultimately leading to the degeneration of the affected neurons.

To date, a total of 25 abnormal phosphorylation sites have been identified on hyperphosphorylated tau in AD brain. Normal tau has ~8 phosphorylation sites.

Reagent

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

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.

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: a minimum working dilution of 1:2000 was determined using a whole brain tissue.
Immunohistochemistry, RIA and immunofluorescence: recommended dilution is 1:2000.
ELISA: recommended dilution is 1:4000.

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

References

1. 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).

2. Mikulova K, et al., Novel Anti-tau Monoclonal antibody With Specificity for N1 Terminal Insert. *Neurobiology of Aging*, **25**, S432-S434, (2004).

3. Mandelkow, E. Alzheimer's disease. The tangled tale of tau. *Nature*, **402**, 588-589 (1999).

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