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ProductInformation

Monoclonal Anti-Alzheimer's Disease Tau
Clone DC11
produced in mouse, purified immunoglobulin

Catalog Number **A8855**

Synonym: Monoclonal Anti-AD Tau

Product Description

Monoclonal Anti-Alzheimer's Disease Tau, Clone DC11 (mouse IgG1 isotype) is derived from mouse myeloma NSO cells from BALB/c mice immunized with Alzheimer´s tau isolated from AD brain (20-68 kDa).[1] Monoclonal Anti-AD Tau, Clone DC 11 recognizes only human Alzheimer´s tau that is conformationally different from normal tau and shows no cross-reactivity with tau from age-matched control brains or with six recombinant tau isoforms, MAPs or tubulin. The product is useful in immunoblotting, immunohistochemistry and immunofluorescence.

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. Both Tau and MAP2 associate with the sides of microtubules.

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]

In immunoblotting, DC11 recognized neither native healthy tau nor its full-length recombinant counterpart. However, the monoclonal antibody showed strong immunoreactivity with truncated tau (residues 151-421), thus indicating the requirement for a conformational epitope. Importantly, the DC11 epitope was phosphorylation independent. The immunochemical parameters of the antibody show that DC11 could represent a novel structural probe with specificity for pathological tau present in AD brains.[1]

Reagent

Supplied as a solution in 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 1:500 was determined using Alzheimer´s diseased brain tissue.

Immunohistochemistry and immunofluorescence: a minimum working dilution of 1:1000 is recommended.

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

References

1. Vechterova L, et al., DC11: a novel monoclonal antibody revealing Alzheimer´s disease-specific tau epitope. *Neuroreport*, **14**, 87-91 (2003).

2. Goedert, M., et al., Multiple isoforms of human microtubule-associated protein tau: sequences and localization in neurofibrillary tangles of Alzheimer's disease, *Neuron* **3**, 519-526 (1989).
3. Takahashi, M., et al., Distribution of tau protein kinase I/glycogen synthase kinase-3β, phosphatases 2A and 2B, and phosphorylated tau in the developing rat brain. *Brain Res*. **857**, 193-206 (2000).
4. Mandelkow, E. Alzheimer's disease. The tangled tale of tau. *Nature*, 402, 588-589 (1999).

AH,PHC 09/06-1