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ProductInformation

Anti-phospho-Tau [pSer^{356}]
produced in rabbit, affinity isolated antibody

Catalog Number **T1825**

Product Description

Anti-phospho-Tau [pSer^{356}] is produced in rabbit using a synthetic phosphopeptide derived from the region of human tau that contains serine 356 as immunogen. The serum is affinity purified using epitope-specific affinity chromatography. The antibody is preadsorbed to remove any reactivity towards a non-phosphorylated Tau.

Anti-phospho-Tau [pSer^{356}] recognizes human Tau by immunoblotting. Other species that are 100% homologous have not been tested but are expected to react.

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. 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.

Numerous serine/threonine kinases, including GSK-3β, protein kinase A (PKA), cyclin-dependent kinase 5 and casein kinase II, phosphorylate tau. To date, a total of 25 abnormal phosphorylation sites have been identified on hyperphosphorylated tau in AD brain. Normal tau has approximately eight phosphorylation sites. The abnormal phosphorylation occurs usually on serine and threonine residues. Specifically, TPKII phosphorylates serines 202 and 404. GSK-3β transfection phosphorylates serines 199, 202, 235, 396, 404 and 413, and threonines 205 and 231. These sites are among the major abnormal phosphorylation sites of tau.

Phosphorylation on these sites reduces the ability of given tau species to promote microtubule self-assembly.
Ser^{356} can be phosphorylated by GSK-3β, PKA, and MAP kinase, and has been found to be a major site in AD brain. This antibody, combined with Tau [pS^{262}] antibody, Catalog No. T7569, enables one to distinguish between phosphorylation at the two distinct residues, rather than a combined epitope.

Reagent

Supplied in Dulbecco's phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.3, with 50% glycerol, 1.0 mg/ml BSA (IgG, protease free) and 0.05% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For extended storage, upon initial thawing, freeze in working aliquots. Avoid repeated freezing and thawing to prevent denaturing the antibody. Working dilution samples should be discarded if not used within 12 hours.

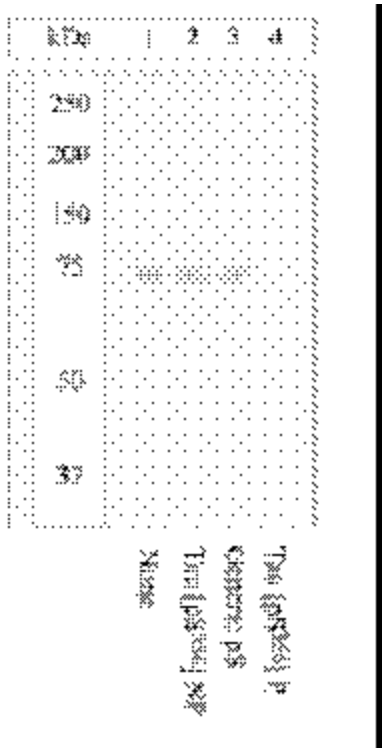
Product Profile

Immunoblotting: a recommended working dilution of 1:1000 is determined using recombinant human tau untreated or treated with PKA.

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

Peptide competition

1. Background extracts with recombinant human Tau were treated with PKA and resolved by SDS-PAGE on a 10% polyacrylamide gel and transferred to PVDF.
2. Membranes were blocked with a 5% BSA-TBST buffer for 1 hour at room temperature.
3. Membranes were preincubated with peptides as follows:
   - Lane 1 no peptide
   - Lane 2 non-phosphorylated peptide corresponding to immunogen
   - Lane 3 a generic peptide containing phosphorylated serine
   - Lane 4 immunogen
4. Subsequently membranes were incubated with Tau [pSer^{356}] antibody for two hours at room temperature in a 1% BSA-TBST buffer.
5. After washing, membranes were incubated with goat F(ab')$_2$ anti-rabbit IgG-HRP and bands were detected.



The data show that only the peptide corresponding to Tau [pSer^{356}] blocks the antibody signal, demonstrating the specificity of the antibody.

References

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