abcam

Product datasheet

Anti-2N Tau antibody [EPR21723] ab218316

Recombinant RabMAb

3 Images

Overview

Product name	Anti-2N Tau antibody [EPR21723]
Description	Rabbit monoclonal [EPR21723] to 2N Tau
Host species	Rabbit
Tested applications	**Suitable for:** WB **Unsuitable for:** IHC-Fr or IHC-P
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide within Human 2N Tau aa 50-150. The exact sequence is proprietary. Database link: P10636
Positive control	WB: His-tagged human 2N3R Tau recombinant protein (aa1-410); His-tagged human 2N4R Tau recombinant protein (aa1-441); Human and mouse hippocampus and brain lysates; Rat hippocampus lysate.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents. Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough. Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility. We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee. In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for. We are also updating the applications & species that this product has been "predicted to work

with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR21723
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab218316** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 36-75 kDa (predicted molecular weight: 78 kDa).

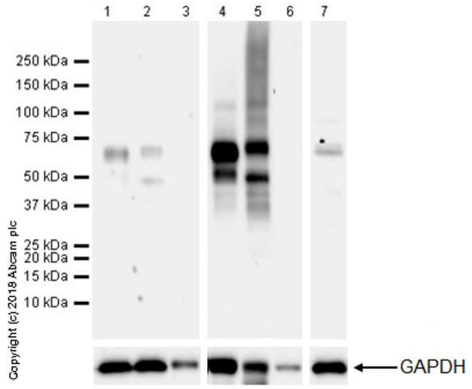
Application notes Is unsuitable for IHC-Fr or IHC-P.

Target

Relevance Developmental stage: Four-repeat (type II) tau is expressed in an adult-specific manner and is not found in fetal brain, whereas three-repeat (type I) tau is found in both adult and fetal brain. Disease: Note=In Alzheimer disease, the neuronal cytoskeleton in the brain is progressively disrupted and replaced by tangles of paired helical filaments (PHF) and straight filaments, mainly composed of hyperphosphorylated forms of TAU (PHF-TAU or AD P-TAU). Defects in MAPT are a cause of frontotemporal dementia (FTD) [MIM:600274]; also called frontotemporal dementia (FTD), pallido-ponto-nigral degeneration (PPND) or historically termed Pick complex. This form of frontotemporal dementia is characterized by presenile dementia with behavioral changes, deterioration of cognitive capacities and loss of memory. In some cases, parkinsonian symptoms are prominent. Neuropathological changes include frontotemporal atrophy often associated with atrophy of the basal ganglia, substantia nigra, amygdala. In most cases, protein tau deposits are found in glial cells and/or neurons. Defects in MAPT are a cause of Pick disease of the brain

(PIDB) [MIM:172700]. It is a rare form of dementia pathologically defined by severe atrophy, neuronal loss and gliosis. It is characterized by the occurrence of tau-positive inclusions, swollen neurons (Pick cells) and argentophilic neuronal inclusions known as Pick bodies that disproportionally affect the frontal and temporal cortical regions. Clinical features include aphasia, apraxia, confusion, anomia, memory loss and personality deterioration. Note=Defects in MAPT are a cause of corticobasal degeneration (CBD). It is marked by extrapyramidal signs and apraxia and can be associated with memory loss. Neuropathologic features may overlap Alzheimer disease, progressive supranuclear palsy, and Parkinson disease. Defects in MAPT are a cause of progressive supranuclear palsy type 1 (PSNP1) [MIM:601104, 260540]; also abbreviated as PSP and also known as Steele-Richardson-Olszewski syndrome. PSNP1 is characterized by akinetic-rigid syndrome, supranuclear gaze palsy, pyramidal tract dysfunction, pseudobulbar signs and cognitive capacities deterioration. Neurofibrillary tangles and gliosis but no amyloid plaques are found in diseased brains. Most cases appear to be sporadic, with a significant association with a common haplotype including the MAPT gene and the flanking regions. Familial cases show an autosomal dominant pattern of transmission with incomplete penetrance; genetic analysis of a few cases showed the occurrence of tau mutations, including a deletion of Asn-613. Domain: The tau/MAP repeat binds to tubulin. Type I isoforms contain 3 repeats while type II isoforms contain 4 repeats. Function: Promotes microtubule assembly and stability, and might be involved in the establishment and maintenance of neuronal polarity. The C-terminus binds axonal microtubules while the N-terminus binds neural plasma membrane components, suggesting that tau functions as a linker protein between both. Axonal polarity is predetermined by tau localization (in the neuronal cell) in the domain of the cell body defined by the centrosome. The short isoforms allow plasticity of the cytoskeleton whereas the longer isoforms may preferentially play a role in its stabilization. PTM: Phosphorylation at serine and threonine residues in S-P or T-P motifs by proline-directed protein kinases (PDPK: CDK1, CDK5, GSK-3, MAPK) (only 2-3 sites per protein in interphase, seven-fold increase in mitosis, and in PHF-tau), and at serine residues in K-X-G-S motifs by MAP/microtubule affinity-regulating kinase (MARK) in Alzheimer diseased brains. Phosphorylation decreases with age. Phosphorylation within tau's repeat domain or in flanking regions seems to reduce tau's interaction with, respectively, microtubules or plasma membrane components. Phosphorylation on Ser-610, Ser-622, Ser-641 and Ser-673 in several isoforms during mitosis. Polyubiquitinated. Requires functional TRAF6 and may provoke SQSTM1-dependent degradation by the proteasome (By similarity). PHF-tau can be modified by three different forms of polyubiquitination. 'Lys-48'-linked polyubiquitination is the major form, 'Lys-6'-linked and 'Lys-11'-linked polyubiquitination also occur. Glycation of PHF-tau, but not normal brain tau. Glycation is a non-enzymatic post-translational modification that involves a covalent linkage between a sugar and an amino group of a protein molecule forming ketoamine. Subsequent oxidation, fragmentation and/or cross-linking of ketoamine leads to the production of advanced glycation endproducts (AGES). Glycation may play a role in stabilizing PHF aggregation leading to tangle formation in AD. Similarity: Contains 4 Tau/MAP repeats. Tissue specificity: Expressed in neurons. Expressed in the central nervous system.

Images



Western blot - Anti-2N Tau antibody [EPR21723] (ab218316)

All lanes : Anti-2N Tau antibody [EPR21723] (ab218316) at 1/1000 dilution

Lane 1 : Human hippocampus lysate
Lane 2 : Human brain lysate
Lane 3 : Human stomach lysate
Lane 4 : Mouse hippocampus lysate
Lane 5 : Mouse brain lysate
Lane 6 : Mouse stomach lysate
Lane 7 : Rat hippocampus lysate

Lysates/proteins at 20 µg per lane.

Secondary
Lanes 1-3 : VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution
Lanes 4-7 : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

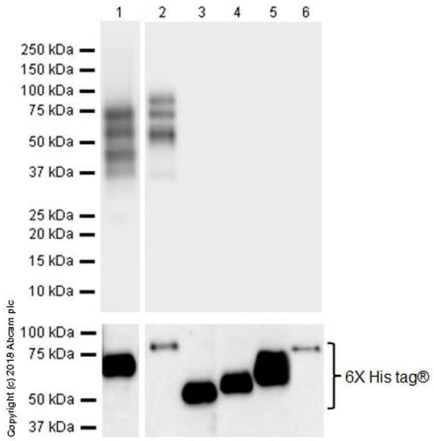
Predicted band size: 78 kDa
Observed band size: 36-75 kDa
why is the actual band size different from the predicted?

Exposure time : Lanes 1-3: 3 minutes; Lanes 4-6: 59 seconds; Lane 7: 3 minutes.

Blocking/Dilution buffer: 5% NFDM/TBST.

This blot was developed using a higher sensitivity ECL substrate.

Negative control: Mouse stomach, human stomach.
PMID:8752131; PMID:11727254.



Western blot - Anti-2N Tau antibody [EPR21723] (ab218316)

All lanes : Anti-2N Tau antibody [EPR21723] (ab218316) at 1/1000 dilution

Lane 1 : His-tagged human 2N3R Tau recombinant protein (aa1-410), 10 ng
Lane 2 : His-tagged human 2N4R Tau recombinant protein (aa1-441), 10 ng
Lane 3 : His-tagged human 0N3R Tau recombinant protein (aa1-352), 10 ng
Lane 4 : His-tagged human 0N4R Tau recombinant protein (aa1-383), 10 ng
Lane 5 : His-tagged human 1N3R Tau recombinant protein (aa1-381), 10 ng
Lane 6 : His-tagged human 1N4R Tau recombinant protein (aa1-412), 10 ng

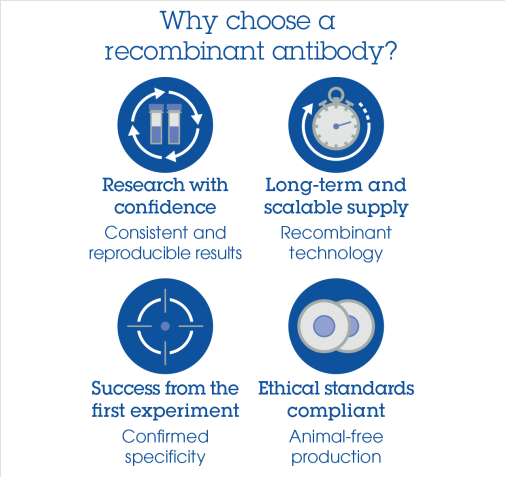
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 78 kDa

Exposure time : Lane 1: 1 second; Lanes 2-8: 3 seconds.

Blocking/Dilution buffer: 5% NFDM/TBST.

This antibody specifically recognizes 2N3R and 2N4R tau recombinant proteins. The lower bands maybe degraded tau fragments (PMID:28045602).



Anti-2N Tau antibody [EPR21723] (ab218316)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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