

Product datasheet

Tau Research (Tau, S198, S199, S202 + T205, S214, S396, S404, S422, T231) Antibody Sampler Panel ab226492

10 Images

Overview

Product name Tau Research (Tau, S198, S199, S202 + T205, S214, S396, S404, S422, T231) Antibody Sampler Panel

Product overview ab226492 is a tau research panel containing 1 recombinant mouse monoclonal antibody, 1 anti-mouse secondary antibody, 8 recombinant rabbit monoclonal antibodies and 1 anti-rabbit secondary antibody: Anti-Tau antibody, Goat Anti-Mouse IgG (H&L) (HRP), Anti-Tau (phospho S396) antibody, Anti-Tau (phospho T231) antibody, Anti-Tau (phospho S422) antibody, Anti-Tau (phospho S199) antibody, Anti-Tau (phospho S404) antibody, Anti-Tau (phospho S198) antibody, Anti-Tau (phospho S214) antibody, Anti-Tau (phospho S202 + T205) antibody, and Goat Anti-Rabbit IgG (H&L) (HRP).

Under normal circumstances, tau is a microtubule-associated protein involved in microtubule stabilization, but under pathological conditions, tau becomes hyperphosphorylated and detaches from microtubules. Phosphorylated tau then aggregates to form paired helical filaments (PHFs) and neurofibrillary tangles (NFTs).

The antibodies in this panel were selected for their exceptional performance. Please see the individual datasheets for additional information.

Notes [Explore our range of antibody sample panels](#) designed to provide you with a variety of trial-size antibodies in a convenient and cost-effective format.

[Carrier-free formulations](#) of our recombinant antibodies are available and ready to use for multiplex IHC analysis including Imaging Mass Cytometry™. Please refer to the 'Associated products' section below.

Properties

Storage instructions Store at -20°C. Please refer to protocols.

Components	1 packs
ab79540 - Anti-Tau (phospho S198) antibody [EPR2400]	1 x 10µl
ab81268 - Anti-Tau (phospho S199) antibody [EPR2401Y]	1 x 10µl

Components	1 packs
ab210703 - Anti-Tau (phospho S202 + T205) antibody [EPR20390]	1 x 10µl
ab170892 - Anti-Tau (phospho S214) antibody [EPR1884(2)]	1 x 10µl
ab109390 - Anti-Tau (phospho S396) antibody [EPR2731]	1 x 10µl
ab92676 - Anti-Tau (phospho S404) antibody [EPR2605]	1 x 10µl
ab79415 - Anti-Tau (phospho S422) antibody [EPR2866]	1 x 10µl
ab151559 - Anti-Tau (phospho T231) antibody [EPR2488]	1 x 10µl
ab80579 - Anti-Tau antibody [TAU-5]	1 x 10µl
ab205719 - Goat Anti-Mouse IgG H+L (HRP)	1 x 100µg
ab205718 - Goat Anti-Rabbit IgG H+L (HRP)	1 x 100µg

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.
Tissue specificity	Expressed in neurons. Isoform PNS-tau is expressed in the peripheral nervous system while the others are expressed in the central nervous system.
Involvement in disease	<p>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).</p> <p>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.</p> <p>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 disproportionately affect the frontal and temporal cortical regions. Clinical features include aphasia, apraxia, confusion, anomia, memory loss and personality deterioration.</p> <p>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.</p> <p>Defects in MAPT are a cause of progressive supranuclear palsy type 1 (PSNP1) [MIM:601104,</p>

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.

Sequence similarities

Contains 4 Tau/MAP repeats.

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.

Domain

The tau/MAP repeat binds to tubulin. Type I isoforms contain 3 repeats while type II isoforms contain 4 repeats.

Post-translational modifications

Phosphorylation at serine and threonine residues in S-P or T-P motifs by proline-directed protein kinases (PDK: 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.

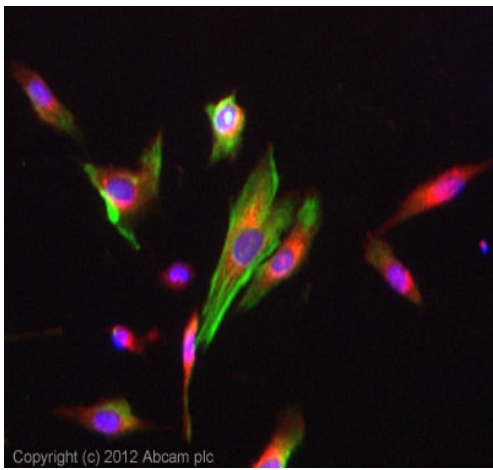
Polyubiquitinated. Requires functional TRAF6 and may provoke SQSTM1-dependent degradation by the proteasome (By similarity). PHF-tau can be modified by three different forms of polyubiquitination. 'Lys-48'-linked polyubiquitination is the major form, 'Lys-6'-linked and 'Lys-11'-linked polyubiquitination 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.

Cellular localization

Cytoplasm > cytosol. Cell membrane. Cytoplasm > cytoskeleton. Cell projection > axon. Mostly found in the axons of neurons, in the cytosol and in association with plasma membrane components.

Images



Immunocytochemistry/ Immunofluorescence - Anti-Tau antibody [TAU-5] (

[ab80579](#)

)

ICC/IF image of [ab80579](#) stained SKNSH cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum ([ab7481](#)) / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ([ab80579](#), 10µg/ml) overnight at +4°C. The secondary antibody (green) was [ab96879](#), DyLight® 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

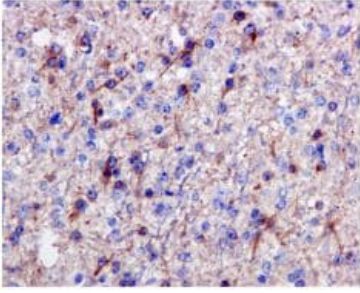


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tau (phospho S404) antibody [EPR2605] (

[ab92676](#)

)

[ab92676](#) staining Tau (phospho S404) in Human brain tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Samples were incubated with primary antibody (1/100).



Immunohistochemical analysis of paraffin-embedded Human glioma tissue labeling Tau (phospho S214) with **ab170892** at 1/100 dilution.

Immunohistochemistry (Paraffin-embedded sections)

- Anti-Tau (phospho S214) [EPR1884(2)] antibody (

ab170892

)



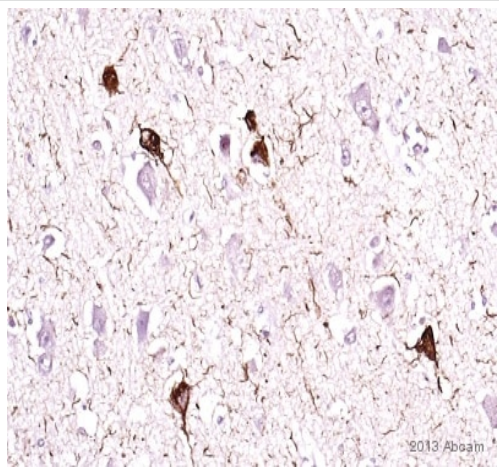
ab79540, at 1/100 dilution, staining Tau (phospho S198) in paraffin-embedded human brain tissue by Immunohistochemistry.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tau (phospho S198)

antibody [EPR2400] (

ab79540

)

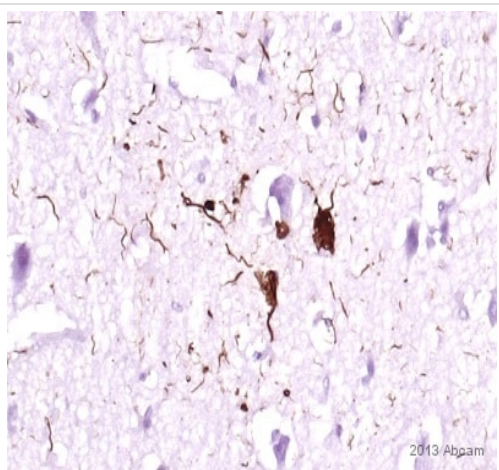


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tau (phospho T231) antibody [EPR2488] (

ab151559

)

IHC image of Tau (phospho T231) staining in human Alzheimer hippocampus formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with citrate buffer. The section was then incubated with **ab151559** at 1/2000 dilution for 2 hours at 21°C. A biotin conjugated goat-anti-rabbit antibody was used as a secondary at 1/250. The section shows clear neurofibrillary tangles in a subset of neurons.

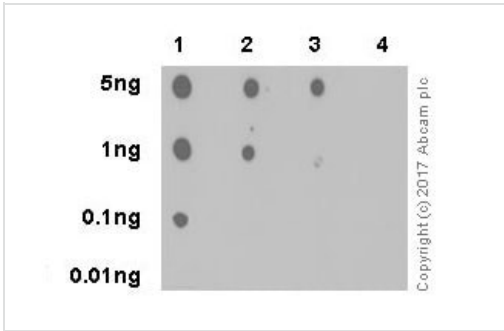


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tau (phospho S396) antibody [EPR2731] (

ab109390

)

IHC image of Tau (phospho S396) staining in human Alzheimer hippocampus formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with citrate buffer. The section was then incubated with unpurified **ab109390** at 1/1000 dilution for 2 hours at 21°C. A biotin conjugated goat-anti-rabbit antibody was used as a secondary at 1/250. The section shows clear neurofibrillary tangles in a subset of neurons.



Dot Blot - Anti-Tau (phospho S202 + T205) antibody

[EPR20390] (

ab210703

)

Dot blot analysis of Tau (phospho S202+ T205) labeled with **ab210703** at 1/1000 dilution.

Lane 1: Tau (phospho S202 + T205) peptide.

Lane 2: Tau (phospho S202) peptide.

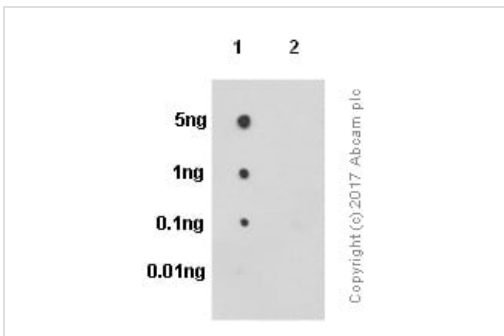
Lane 3: Tau (phospho T205) peptide.

Lane 4: Tau non-phospho peptide.

Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution was used as secondary antibody.

Blocking and dilution buffer: 5% NFDm/TBST.

Exposure time: 3 minutes.



Dot Blot - Anti-Tau (phospho S199) antibody

[EPR2401Y] (

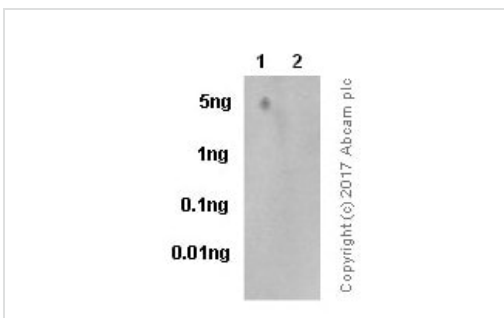
ab81268

)

Dot blot analysis of Tau (pS199) peptide (Lane 1) and Tau non-phospho peptide (Lane 2) labelling Tau (pS199) with **ab81268** at a dilution of 1/1000. **ab97051** (peroxidase-conjugated goat anti-rabbit IgG (H+L)) was used as the secondary antibody at a dilution of 1/100000.

Exposure time: 3 minutes.

Blocking and dilution buffer: 5% NFDm/TBST.



Dot Blot - Anti-Tau (phospho S422) antibody

[EPR2866] (

ab79415

)

Dot blot analysis of Tau (pS422) peptide (Lane 1) and Tau non-phospho peptide (Lane 2) labelling Tau (pS422) with **ab79415** at a dilution of 1/1000. **ab97051** (Peroxidase-conjugated goat anti-rabbit IgG (H+L)) was used as the secondary antibody at a dilution of 1/100000.

Blocking and dilution buffer: 5% NFDm/TBST.

Exposure time: 3 minutes.

Why choose a recombinant antibody?



Research with confidence
Consistent and reproducible results



Long-term and scalable supply
Recombinant technology



Success from the first experiment
Confirmed specificity



Ethical standards compliant
Animal-free production

Tau Research (Tau, S198, S199, S202 + T205, S214, S396, S404, S422, T231) Antibody Sampler Panel (ab226492)

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

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors