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Rabbit Anti-phospho-Tau (Thr498)antibody

SL0885R

Product Name	phospho-Tau (Thr498)
Chinese Name	磷酸化微管相关蛋白抗体
Alias	Tau(Phospho-Thr498); MAPT(phospho T498);Tau(Phospho-Thr498); MAPT; Microtuble-assoc protein Tau; AI413597; AW045860; DDPAC; Disinhibition dementia parkinsonism amyotrophy FLJ31424; FTDP 17; FTDP17; G Protein beta 1 gamma 2 subunit interacting factor 1; G protein beta1/gamma2 subunit interacting factor 1; MAPTL; MGC134287; MGC138549; MGC156663; Microtubule associated protein tau isoform 4; MSTD; Mtapt; MTBT1; MTBT2; Neurofibrillary protein; Paired helical filament tau; PHF tau; PHF-tau; PPND; pTau; RNPTAU; Tauopathy and failure, included; TAU_HUMAN.
Product Type	Phosphorylated anti
Research Area	Cell biology immunology Neurobiology Signal transduction transcriptional regulatory factor
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human, Mouse, Rat, (predicted: Dog, Pig, Cow, Rabbit,)
Applications	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:50-200,Flow-Cy （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	52/79kDa
Cellular localization	cytoplasmic The cell membrane
Form	Liquid
Concentration	1mg/ml
immunogen	KLH conjugated Synthesised phosphopeptide derived from human Tau around the phosphorylat Thr498: PK(p-T)PP
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

Solution

Storage Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention This product as supplied is intended for research use only, not for use in human, therapeutic or d applications.

PubMed PubMed

Tau proteins are important Promotes microtubule assembly and stability, and might be involved establishment and maintenance of neuronal polarity. The C-terminus binds axonal microtubules N-terminus binds neural plasma membrane components, suggesting that tau functions as a linke between both. Axonal polarity is predetermined by tau localization (in the neuronal cell) in the d the cell body defined by the centrosome. The short isoforms allow plasticity of the cytoskeleton w longer isoforms may preferentially play a role in its stabilization. Tau proteins subcellular locate axons of neurons, in the cytoso l and in association with plasma membrane components. It expre neurons. PNS-tau is expressed in the peripheral nervous system while the others are expressed in nervous system.

Function:
Promotes microtubule assembly and stability, and might be involved in the establishment and ma of neuronal polarity. The C-terminus binds axonal microtubules while the N-terminus binds neu membrane components, suggesting that tau functions as a linker protein between both. Axonal p predetermined by TAU/MAPT localization (in the neuronal cell) in the domain of the cell body the centrosome. The short isoforms allow plasticity of the cytoskeleton whereas the longer isofo preferentially play a role in its stabilization.

Product Detail

Subunit:
Interacts with PSMC2 through SQSTM1. Interacts with SQSTM1 when polyubiquitinated. Inter FKBP4. Binds to CSNK1D. Interacts with SGK1.

Subcellular Location:
Cytoplasm, cytosol. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Cytoplasm cytoskeleton. Cell projection, axon. Note=Mostly found in the axons of neurons, in the cytosol a association with plasma membrane components.

Tissue Specificity:
Expressed in neurons. Isoform PNS-tau is expressed in the peripheral nervous system while the expressed in the central nervous system.

Post-translational modifications:
Phosphorylation at serine and threonine residues in S-P or T-P motifs by proline-directed protein (PDPK1: CDK1, CDK5, GSK3, MAPK) (only 2-3 sites per protein in interphase, seven-fold inc mitosis, and in the form associated with paired helical filaments (PHF-tau)), and at serine residu K-X-G-S motifs by MAP/microtubule affinity-regulating kinase (MARK1 or MARK2), causing detachment from microtubules, and their disassembly. Phosphorylation decreases with age.
Phosphorylation within tau/MAP's repeat domain or in flanking regions seems to reduce tAU/M

interaction with, respectively, microtubules or plasma membrane components. Phosphorylation o Ser-622, Ser-641 and Ser-673 in several isoforms during mitosis. Phosphorylation at Ser-548 by reduces ability to bind and stabilize microtubules. Phosphorylation at Ser-579 by BRSK1 and BI neurons affects ability to bind microtubules and plays a role in neuron polarization. Phosphoryla Ser-554, Ser-579, Ser-602, Ser-606 and Ser-669 by PHK. Phosphorylation at Ser-214 by SGK1 microtubule depolymerization and neurite formation in hippocampal neurons. There is a reciproc down-regulation of phosphorylation and O-GlcNAcylation. Phosphorylation on Ser-717 comple abolishes the O-GlcNAcylation on this site, while phosphorylation on Ser-713 and Ser-721 redu glycosylation by a factor of 2 and 4 respectively. Phosphorylation on Ser-721 is reduced by abou GlcNAcylation on Ser-717.

Polyubiquitinated. Requires functional TRAF6 and may provoke SQSTM1-dependent degradati proteasome. PHF-tau can be modified by three different forms of polyubiquitination. 'Lys-48'-lin polyubiquitination is the major form, 'Lys-6'-linked and 'Lys-11'-linked polyubiquitination also o

O-glycosylated. O-GlcNAcylation content is around 8.2%. There is reciprocal down-regulation o phosphorylation and O-GlcNAcylation. Phosphorylation on Ser-717 completely abolishes the O-GlcNAcylation on this site, while phosphorylation on Ser-713 and Ser-721 reduces O-GlcNAc a factor of 2 and 4 respectively. O-GlcNAcylation on Ser-717 decreases the phosphorylation on S about 41.5%.

Glycation of PHF-tau, but not normal brain TAU/MAPT. Glycation is a non-enzymatic post-tran modification that involves a covalent linkage between a sugar and an amino group of a protein m forming ketoamine. Subsequent oxidation, fragmentation and/or cross-linking of ketoamine lead production of advanced glycation endproducts (AGES). Glycation may play a role in stabilizing aggregation leading to tangle formation in AD.

DISEASE:
Note=In Alzheimer disease, the neuronal cytoskeleton in the brain is progressively disrupted and by tangles of paired helical filaments (PHF) and straight filaments, mainly composed of hyperphosphorylated forms of TAU (PHF-TAU or AD P-TAU). O-GlcNAcylation is greatly red Alzheimer disease brain cerebral cortex leading to an increase in TAU/MAPT phosphorylations.

Defects in MAPT are a cause of frontotemporal dementia (FTD) [MIM:600274]; also called front dementia (FTD), pallido-ponto-nigral degeneration (PPND) or historically termed Pick complex. of frontotemporal dementia is characterized by presenile dementia with behavioral changes, deter cognitive capacities and loss of memory. In some cases, parkinsonian symptoms are prominent. Neuropathological changes include frontotemporal atrophy often associated with atrophy of the ganglia, substantia nigra, amygdala. In most cases, protein tau deposits are found in glial cells ar neurons.

Defects in MAPT are a cause of Pick disease of the brain (PIDB) [MIM:172700]. It is a rare form dementia pathologically defined by severe atrophy, neuronal loss and gliosis. It is characterized occurrence of tau-positive inclusions, swollen neurons (Pick cells) and argentophilic neuronal in

known as Pick bodies that disproportionally affect the frontal and temporal cortical regions. Clin 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 extrapy signs and apraxia and can be associated with memory loss. Neuropathologic features may overla Alzheimer disease, progressive supranuclear palsy, and Parkinson disease.

Defects in MAPT are a cause of progressive supranuclear palsy type 1 (PSNP1) [MIM:601104]; abbreviated as PSP and also known as Steele-Richardson-Olszewski syndrome. PSNP1 is charac akinetic-rigid syndrome, supranuclear gaze palsy, pyramidal tract dysfunction, pseudobulbar sig cognitive capacities deterioration. Neurofibrillary tangles and gliosis but no amyloid plaques are diseased brains. Most cases appear to be sporadic, with a significant association with a common including the MAPT gene and the flanking regions. Familial cases show an autosomal dominant transmission with incomplete penetrance; genetic analysis of a few cases showed the occurrence mutations, including a deletion of Asn-613.

Defects in MAPT are a cause of Parkinson-dementia syndrome (PARDE) [MIM:260540]. A syn characterized by parkinsonism tremor, rigidity, dementia, ophthalmoparesis and pyramidal signs Neurofibrillary degeneration occurs in the hippocampus, basal ganglia and brainstem nuclei.

Similarity:
Contains 4 Tau/MAP repeats.

SWISS:
P10636

Gene ID:
4137

Database links:

Entrez Gene: 281296 Cow

Entrez Gene: 4137 Human

Entrez Gene: 17762 Mouse

Entrez Gene: 29477 Rat

Omim: 157140 Human

SwissProt: P29172 Cow

SwissProt: P10636 Human

SwissProt: P10637 Mouse

SwissProt: P19332 Rat

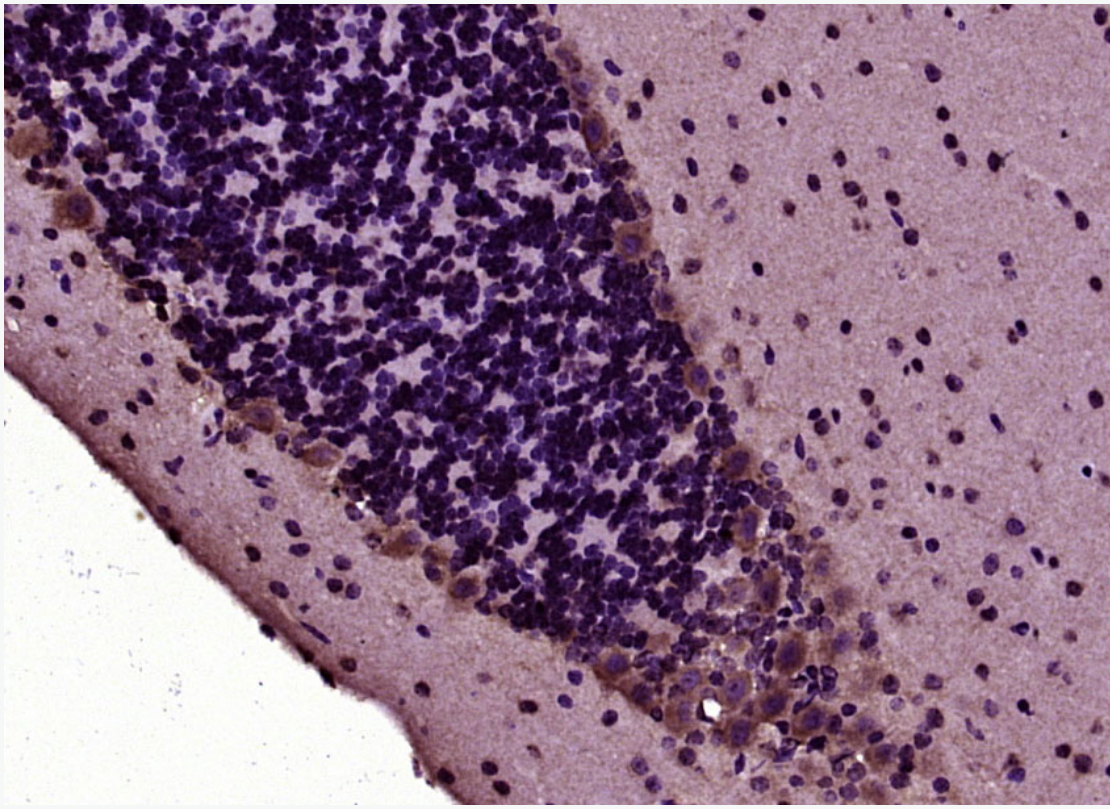
Unigene: 101174 Human

Unigene: 1287 Mouse

Unigene: 2455 Rat

P-tau 蛋白是脑内神经元细胞支架蛋白之一。其正常功能是促进微管蛋白组成微管，并维持
微管的稳定性。参与维持细胞形态、信息传递、细胞分裂等重要生物学过程，是轴突生长
经元极性形成的不可缺少因素。近年来发现 tau 蛋白与一些中枢神经系统变性疾病密切相
神经 Tau 具有启动微管系统的装配以及稳定微管系统的作用，该蛋白的错误折叠与老年性
经退行性疾病密切相关。

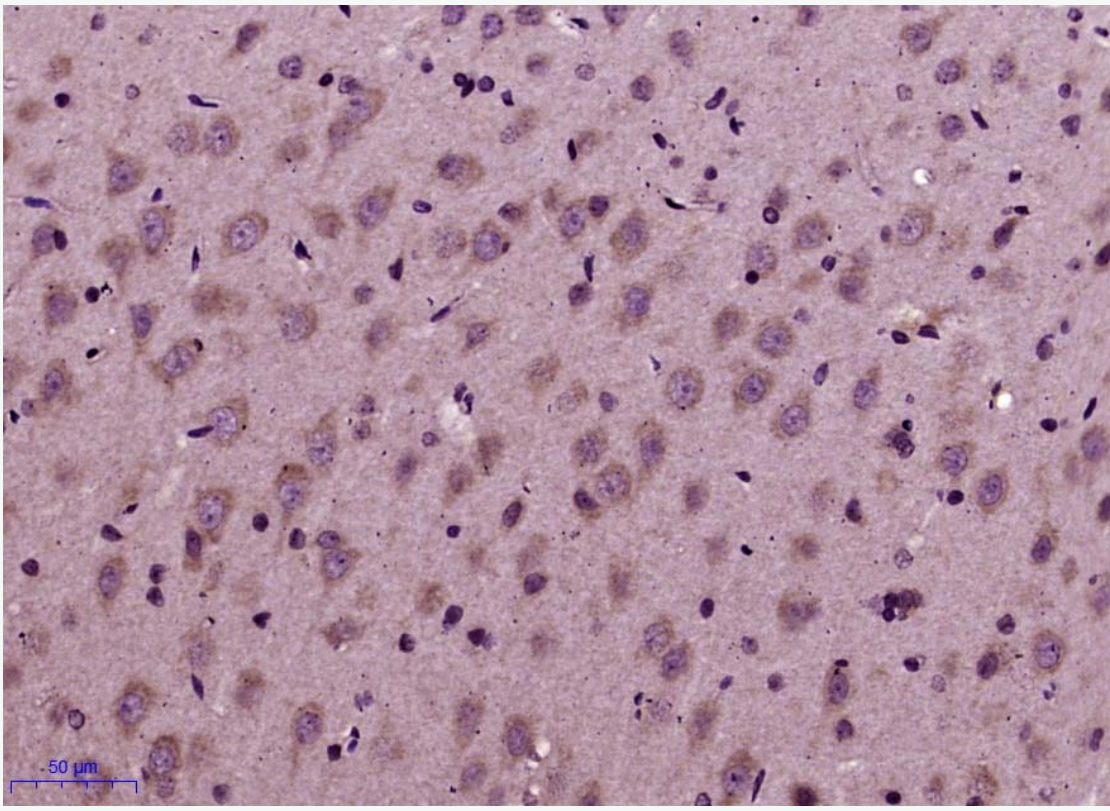
Product Picture



Paraformaldehyde-fixed, paraffin embedded (Mouse cerebellum); Antigen retrieval by boiling
sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxi
minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with

(phospho-Tau (Thr498)) Polyclonal Antibody, Unconjugated (SL0885R) at 1:400 overnight a

followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.



Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodiu

buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 min

Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (phospho-

(Thr498)) Polyclonal Antibody, Unconjugated (SL0885R) at 1:400 overnight at 4°C, followe

operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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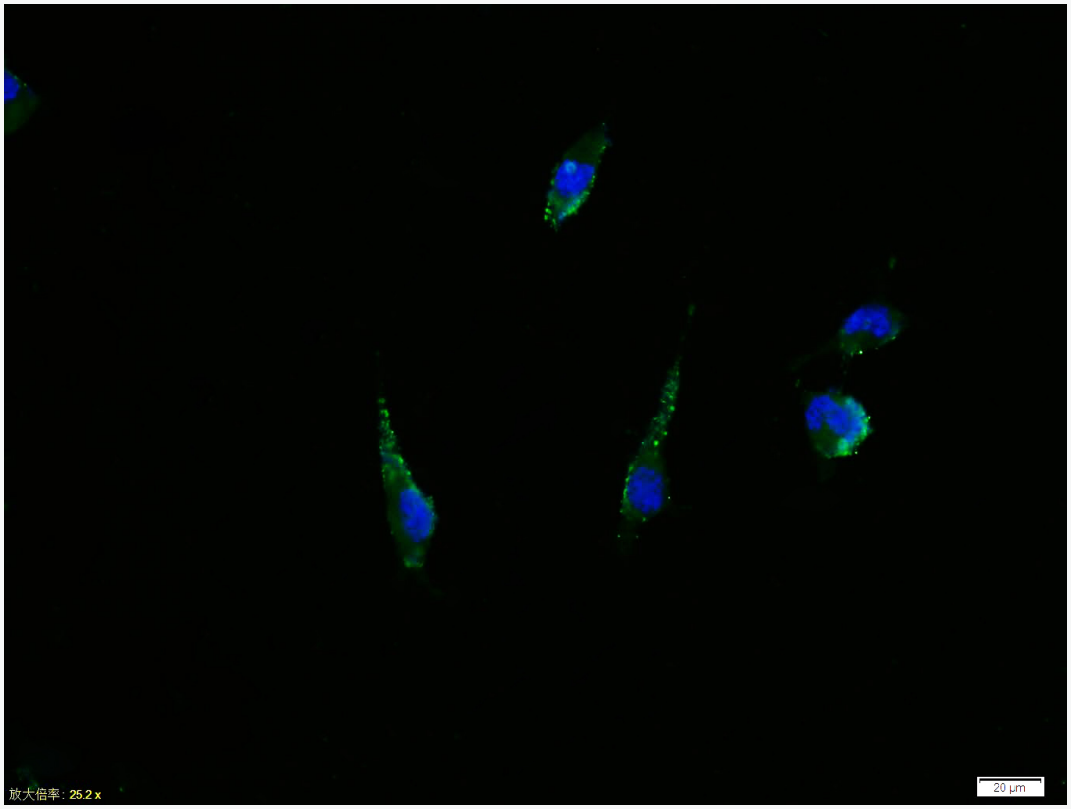

Tissue/cell:SH-SY5Y cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature fo
Blocking buffer (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with
(phospho-Tau (Thr498)) polyclonal Antibody, Unconjugated (SL0885R) 1:100, 90 minutes at
followed by a FITC conjugated Goat Anti-Rabbit IgG antibody at 37°C for 90 minutes, DAPI
C02-04002) was used to stain the cell nuclei.