Anti-Phospho-MAPT-(S202) Antibody

Description	This gene encodes the microtubule-associated protein tau (MAPT) whose transcript undergoes complex, regulated alternative splicing, giving rise to several mRNA species. MAPT transcripts are differentially expressed in the nervous system, depending on stage of neuronal maturation and neuron type. MAPT gene mutations have been associated with several neurodegenerative disorders such as Alzheimer's disease, Pick's disease, frontotemporal dementia, cortico-basal degeneration and progressive supranuclear palsy.

Model	STJ116385
Host	Rabbit
Reactivity	Human
Applications	WB
Immunogen	A phospho specific peptide corresponding to residues surrounding S202 of human MAPT
Gene ID	4137
Gene Symbol	MAPT
Dilution range	WB 1:500 - 1:2000
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
Purification	Affinity purification
Note	For Research Use Only (RUO).
Protein Name	Microtubule-associated protein tau Neurofibrillary tangle protein Paired

	helical filament-tau PHF-tau
Molecular Weight	78.928 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	PBS with 0.02% sodium azide, 50% glycerol, pH7.3.
Storage Instruction	Store at -20C. Avoid freeze / thaw cycles.
Database Links	HGNC:6893OMIM:157140Reactome:R-HSA-264870
Alternative Names	Microtubule-associated protein tau Neurofibrillary tangle protein Paired helical filament-tau PHF-tau
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/MAPT 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,
Cellular Localization	Cytoplasm, cytosol,
Post-translational Modifications	Phosphorylation at serine and threonine residues in S-P or T-P motifs by proline-directed protein kinases (PDPK1: CDK1, CDK5, GSK3, MAPK) (only 2-3 sites per protein in interphase, seven-fold increase in mitosis, and in the form associated with paired helical filaments (PHF-tau)), and at serine residues in 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/MAP'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, Phosphorylation at Ser-548 by GSK3B reduces ability to bind and stabilize microtubules, Phosphorylation at Ser-579 by BRSK1 and BRSK2 in neurons affects ability to bind microtubules and plays a role in neuron polarization, Phosphorylated at Ser-554, Ser-579, Ser-602, Ser-606 and Ser-669 by PHK, Phosphorylation at Ser-214 by SGK1 mediates microtubule depolymerization and neurite formation in hippocampal neurons, There is a reciprocal down-regulation of 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 glycosylation by a factor of 2 and 4 respectively, Phosphorylation on Ser-721 is reduced by about 41,5% by GlcNAcylation on Ser-717, Dephosphorylated at several serine and threonine residues by the serine/threonine phosphatase PPP5C,