

Tau

Cat.No. 314 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 1000 IHC: 1 : 200 IHC-P/FFPE: 1 : 500
Immunogen	Recombinant protein corresponding to AA 3 to 214 from mouse Tau (UniProt Id: P10637)
Reactivity	Reacts with: rat (P19332), mouse (P10637). Weaker signal: human (P10636). No signal: chicken. Other species not tested yet.
Specificity	Specific for tau.
matching control	314-0P
Remarks	The antibody binds phosphorylated and non-phosphorylated tau proteins.

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

There are two major classes of heat stable microtubule associated proteins (MAPS): MAP 2 (280 kD), and **tau** (55-65 kD). Both protein classes are involved in the regulation of microtubule polymerization in cells. Tau is a neuronal protein that mainly localizes to axons. Hyperphosphorylated tau has been shown to be a major element of paired helical filaments in Alzheimer's disease.

Selected References SYSY Antibodies

Oxidative stress and altered mitochondrial protein expression in the absence of amyloid-β and tau pathology in iPSC-derived neurons from sporadic Alzheimer's disease patients.

Birnbaum JH, Wanner D, Gietl AF, Saake A, Kündig TM, Hock C, Nitsch RM, Tackenberg C
Stem cell research (2018) 27: 121-130. **WB; tested species: human**

Up-regulation of neurofilament light chains is associated with diminished immunoreactivities for MAP2 and tau after ischemic stroke in rodents and in a human case.

Härtig W, Krueger M, Hofmann S, Preißler H, Märkel M, Frydrychowicz C, Mueller WC, Bechmann I, Michalski D
Journal of chemical neuroanatomy (2016) 78: 140-148. **IHC**

Nongenomic, glucocorticoid receptor-mediated regulation of serotonin transporter cell surface expression in embryonic stem cell derived serotonergic neurons.

Lau T, Heimann F, Bartsch D, Schloss P, Weber T
Neuroscience letters (2013) 554: 115-20. **ICC; tested species: mouse**

Basal glucocorticoid receptor activation induces proliferation and inhibits neuronal differentiation of human induced pluripotent stem cell-derived neuronal precursor cells.

Nürnberg E, Horschitz S, Schloss P, Meyer-Lindenberg A
The Journal of steroid biochemistry and molecular biology (2018) : . **ICC; tested species: human**

Localisation of Formyl-Peptide Receptor 2 in the Rat Central Nervous System and Its Role in Axonal and Dendritic Outgrowth.

Ho CF, Ismail NB, Koh JK, Gunaseelan S, Low YH, Ng YK, Chua JJ, Ong WY
Neurochemical research (2018) 43(8): 1587-1598. **ICC; tested species: rat**

Surgical extraction of human dorsal root ganglia from organ donors and preparation of primary sensory neuron cultures.

Valtcheva MV, Copits BA, Davidson S, Sheahan TD, Pullen MY, McCall JG, Dikranian K, Gereau RW
Nature protocols (2016) 11(10): 1877-88. **ICC**

Impact of preconditioning with retinoic acid during early development on morphological and functional characteristics of human induced pluripotent stem cell-derived neurons.

Horschitz S, Matthäus F, Groß A, Rosner J, Galach M, Greffrath W, Treede RD, Utikal J, Schloss P, Meyer-Lindenberg A
Stem cell research (2015) 15(1): 30-41. **ICC**

Herpes simplex virus membrane proteins gE/gI and US9 act cooperatively to promote transport of capsids and glycoproteins from neuron cell bodies into initial axon segments.

Howard PW, Howard TL, Johnson DC
Journal of virology (2013) 87(1): 403-14. **ICC**

Effects of erythropoietin in murine-induced pluripotent cell-derived panneural progenitor cells.

Offen N, Flemming J, Kamawal H, Ahmad R, Wolber W, Geis C, Zaehres H, Schöler HR, Ehrenreich H, Müller AM, Sirén AL, et al.
Molecular medicine (Cambridge, Mass.) (2013) 19: 399-408. **ICC; tested species: mouse**

Phenotype and Stability of Neural Differentiation of Androgenetic Murine ES Cell-Derived Neural Progenitor Cells.

Wolber W, Ahmad R, Choi SW, Eckardt S, McLaughlin KJ, Schmitt J, Geis C, Heckmann M, Sirén AL, Müller AM
Cell medicine (2013) 5(1): 29-42. **ICC; tested species: mouse**

Facilitation of neocortical presynaptic terminal development by NMDA receptor activation.

Sceniak MP, Berry CT, Sabo SL
Neural development (2012) 7: 8. **ICC**

Selected General References

Missorting of tau in neurons causes degeneration of synapses that can be rescued by the kinase MARK2/Par-1.

Thies E, Mandelkow EM
The Journal of neuroscience : the official journal of the Society for Neuroscience (2007) 27(11): 2896-907.

Tau phosphorylation, aggregation, and cell toxicity.

Avila J, Santa-Maria I, Pérez M, Hernández F, Moreno F
Journal of biomedicine & biotechnology (2006) 2006(3): 74539.

Alpha-synuclein induces hyperphosphorylation of Tau in the MPTP model of parkinsonism.

Duka T, Rusnak M, Drolet RE, Duka V, Wersinger C, Goudreau JL, Sidhu A
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2006) 20(13): 2302-12.

Tau is enriched on dynamic microtubules in the distal region of growing axons.

Black MM, Slaughter T, Moshiah S, Obrocka M, Fischer I
The Journal of neuroscience : the official journal of the Society for Neuroscience (1996) 16(11): 3601-19.

A spatial gradient of tau protein phosphorylation in nascent axons.

Mandell JW, Banker GA
The Journal of neuroscience : the official journal of the Society for Neuroscience (1996) 16(18): 5727-40.