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LRP1-mediated Endocytosis and Transmission of Tau Antibody Sampler Kit



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1 Kit (9 x 20 microliters)

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
LRP1 (E2Q7S) Rabbit mAb	26387	20 µl	85 kDa	Rabbit IgG
ApoE (pan) (D7I9N) Rabbit mAb	13366	20 µl	35 kDa	Rabbit IgG
Tau (D1M9X) XP [®] Rabbit mAb	46687	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Thr181) (D9F4G) Rabbit mAb	12885	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb	20194	20 µl	50-80 kDa	Rabbit IgG
SORL1 (D8D4G) Rabbit mAb	79322	20 µl	250 kDa	Rabbit IgG
Rab5 (C8B1) Rabbit mAb	3547	20 µl	25 kDa	Rabbit
Rab7 (D95F2) XP [®] Rabbit mAb	9367	20 µl	23 kDa	Rabbit IgG
Rab11 (D4F5) XP [®] Rabbit mAb	5589	20 µl	25 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The LRP1-mediated Endocytosis and Transmission of Tau Antibody Sampler Kit provides an economical means of detecting components of the LRP-1 mediated intercellular transmission of human tau using antibodies. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibodies.*

Background

Tau is a heterogeneous microtubule-associated protein that promotes and stabilizes microtubule assembly, especially in axons. In addition to its normal function, intracellular neurofibrillary tangle protein aggregates, composed of hyperphosphorylated helical bundles of tau, are a major hallmark of neurodegenerative diseases like Alzheimer's disease (AD) (1). Moreover, disease progression is also measured by the progressive spread and deposition of the protein aggregates via intercellular transfer of tau (2). Although the intercellular mechanism of protein aggregate transfer is poorly understood, low density lipoprotein receptor related protein 1 (LRP1) was identified as a regulator of tau uptake and spread (3). LRP1 is a type I transmembrane receptor that mediates the endocytosis of various ligands, including apolipoproteins and tau. Interestingly, human apolipoprotein E (ApoE), which also binds to LRP1, is genetically linked to AD (4). LRP1-mediated protein uptake, in addition to tau, may play an important role in AD progression. In addition to LRP1, other low density lipoprotein receptor related proteins, including SORL1, are genetically linked to AD, suggesting a conserved cellular mechanism that converges on this family of proteins that contributes to AD etiology (5). Once tau binds to LRP1, receiving cells are likely to internalize and process tau via the endosomal pathway, completing cell-to-cell transmission. Rab5, Rab7, and Rab11, members of the Ras superfamily of small Rab GTPases, are likely to regulate endosomal processing of tau (6).

Background References

1. Johnson, G.V. and Stoothoff, W.H. (2004) *J Cell Sci* 117, 5721-9.
2. Braak, H. and Braak, E. (1991) *Acta Neuropathol* 82, 239-59.
3. Rauch, J.N. et al. (2020) *Nature* 580, 381-385.
4. Corder, E.H. et al. (1993) *Science* 261, 921-3.
5. Yin, R.H. et al. (2015) *Mol Neurobiol* 51, 909-18.
6. Zhang, X. et al. (2019) *ACS Chem Neurosci* 10, 828-838.

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