Revision 2

Store at -20C

#74113

Pathological Hallmarks of Alzheimer's Disease Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
β-Amyloid (D54D2) XP® Rabbit mAb	8243	20 µl	5 kDa	Rabbit IgG
β-Amyloid (1-42) (D9A3A) Rabbit mAb	14974	20 µl	4 kDa	Rabbit IgG
β-Amyloid (1-40) (D8Q7I) Rabbit mAb	12990	20 µl	4 kDa	Rabbit IgG
β-Amyloid (1-43) (E8C2D) Rabbit mAb	32098	20 µl	6 kDa	Rabbit IgG
β-Amyloid (pE3 Peptide) (D5N5H) Rabbit mAb	14975	20 µl	4 kDa	Rabbit IgG
Tau (D1M9X) XP® Rabbit mAb	46687	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Thr205) (E7D3E) Rabbit mAb	49561	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb	20194	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Thr181) (D9F4G) Rabbit mAb	12885	20 µl	50-80 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 Pathological Hallmarks of Alzheimer's Disease Antibody Sampler Kit provides an economical means of detecting the activation of Tau and APP family members using phospho-specific, and control antibodies for both proteins. 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 antibody.

Background

Tau is a heterogeneous microtubule-associated protein that promotes and stabilizes microtubule assembly, especially in axons. Six isoforms with different amino-terminal inserts and different numbers of tandem repeats near the carboxy terminus have been identified, and tau is hyperphosphorylated at approximately 25 sites by ERK, GSK-3, and CDK5 (1,2). Phosphorylation decreases the ability of tau to bind to microtubules. Neurofibrillary tangles are a major hallmark of Alzheimer's disease; these tangles are bundles of paired helical filaments composed of hyperphosphorylated tau. In particular, phosphorylation at Ser396 by GSK-3 or CDK5 destabilizes microtubules. Furthermore, research studies have shown that inclusions of tau are found in a number of other neurodegenerative diseases, collectively known as tauopathies (1,3). The cerebrospinal fluid concentration of tau phosphorylated at Thr181 has been proposed to be a biomarker for the study of neurodegenerative disorders (4).

Amyloid β (Aβ) precursor protein (APP) is a 100-140 kDa transmembrane glycoprotein that exists as several isoforms (4). The amino acid sequence of APP contains the amyloid domain, which can be released by a two-step proteolytic cleavage (4). The extracellular deposition and accumulation of the released Aβ fragments form the main components of amyloid plaques in Alzheimer's disease (4). APP can be phosphorylated at several sites, which may affect the proteolytic processing and secretion of this protein (5-8). Aβ-43 has been suggested as a biomarker in early onset of Alzheimer's disease, where patients have lower levels of Aβ-43 in cerebrospinal fluid (8-10). Several studies have shown that Aβ toxicity of Aβ-43 is as high as Aβ-42 or Aβ-40 in different models of Alzheimer's disease, including mouse models and human disease (10).

Background References

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Limited Uses