Revision 2

#74113 Store at -20°C

# 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

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**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

1. Johnson, G.V. and Stoothoff, W.H. (2004) *J Cell Sci* 117, 5721-9.
2. Hanger, D.P. et al. (1998) *J Neurochem* 71, 2465-76.
3. Bramblett, G.T. et al. (1993) *Neuron* 10, 1089-99.
4. Mitchell, A.J. (2009) *J Neurol Neurosurg Psychiatry* 80, 966-75.
5. Selkoe, D.J. (1996) *J Biol Chem* 271, 18295-8.
6. Caporaso, G.L. et al. (1992) *Proc Natl Acad Sci U S A* 89, 3055-9.
7. Hung, A.Y. and Selkoe, D.J. (1994) *EMBO J* 13, 534-42.
8. Suzuki, T. et al. (1994) *EMBO J* 13, 1114-22.

9. Ando, K. et al. (1999) *J Neurosci* 19, 4421-7.
10. Iijima, K. et al. (2000) *J Neurochem* 75, 1085-91.

## Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.
XP is a registered trademark of Cell Signaling Technology, Inc.
All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.