

ApoE Synaptic Formation and Signaling Pathway Antibody Sampler Kit



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

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

1 Kit (9 x 20 microliters)

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
LRP1 (E2Q7S) Rabbit mAb	26387	20 µl	85 kDa	Rabbit IgG
ApoE (pan) (D7I9N) Rabbit mAb	13366	20 µl	35 kDa	Rabbit IgG
PSD95 (D27E11) XP® Rabbit mAb	3450	20 µl	95 kDa	Rabbit IgG
Phospho-PSD95 (Ser295) (A8F8Z) Rabbit mAb	45737	20 µl	95 kDa	Rabbit IgG
Synapsin-1 (D12G5) XP® Rabbit mAb	5297	20 µl	77 kDa	Rabbit IgG
AMPA Receptor 1 (GluA1) (D4N9V) Rabbit mAb	13185	20 µl	100 kDa	Rabbit IgG
Phospho-AMPA Receptor 1 (GluA1) (Ser831) (A5O2P) Rabbit mAb	75574	20 µl	100 kDa	Rabbit IgG
CREB (48H2) Rabbit mAb	9197	20 µl	43 kDa	Rabbit IgG
Phospho-CREB (Ser133) (87G3) Rabbit mAb	9198	20 µl	43 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 ApoE Synaptic Formation and Signaling Pathway Antibody Sampler Kit provides an economical means of detecting key synaptic signaling pathways in response to ApoE-mediated LRP1 activation by western blot. The kit includes enough antibodies to perform at least 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

Low density lipoprotein receptor related protein 1 (LRP1) is a type I transmembrane receptor that mediates the endocytosis of various ligands, including apolipoproteins and tau. Both proteins are genetically and pathologically linked to Alzheimer's disease (AD) (1,2). Human apolipoprotein E (ApoE) is a component of circulating lipoproteins when three human genetic ApoE variants, ApoE2, ApoE3, and ApoE4, exhibit distinct receptor-binding properties and differentially contribute to AD progression through a cellular mechanism that is poorly understood (2). Altered synaptic signaling is one proposed mechanism that contributes to altered neuronal function, which correlates with disease (3-5).

Postsynaptic Density protein 95 (PSD95) is a member of the membrane-associated guanylate kinase (MAGUK) family of proteins that functions as a scaffolding protein to promote assembly and function of the postsynaptic density complex (6,7). At the presynapse, synapsins function to regulate neurotransmitter release (8,9). Dynamic phosphorylation of PSD95 at Ser295 reflects synaptic signaling that may alter synaptic function (10). In addition to PSD95, postsynaptic glutamate receptors, including AMPA-(α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid) receptors, can be directly phosphorylated. Phosphorylation of AMPA Receptor 1 (GluA1) at either Ser831 or Ser845 alters AMPA receptor ion channel function to change synaptic efficacy (11). CREB is a bZIP transcription factor that activates target genes through cAMP response elements. CREB is activated by phosphorylation at Ser133 by various signaling pathways including Erk, Ca²⁺, stress signaling, as well as synaptic signaling (3).

Background References

1. Rauch, J.N. et al. (2020) *Nature* 580, 381-385.
2. Corder, E.H. et al. (1993) *Science* 261, 921-3.
3. Yong, S.M. et al. (2014) *Sci Rep* 4, 6580.
4. Huang, Y.A. et al. (2019) *J Neurosci* 39, 7408-7427.
5. Lane-Donovan, C. and Herz, J. (2017) *Trends Endocrinol Metab* 28, 273-284.
6. Cao, J. et al. (2005) *J Cell Biol* 168, 117-26.
7. Chetkovich, D.M. et al. (2002) *J Neurosci* 22, 6415-25.
8. Greengard, P. *Mol Neurobiol* 1, 81-119.
9. Hosaka, M. et al. (1999) *Neuron* 24, 377-87.
10. Kim, M.J. et al. (2007) *Neuron* 56, 488-502.
11. Lee, H.K. et al. (2000) *Nature* 405, 955-9.

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.