

Store at
-20°C

#69501

PhosphoPlus® Atg14 (Ser29) Antibody Duet



Cell Signaling
TECHNOLOGY®

Support: +1-978-867-2388 (U.S.)
www.cellsignal.com/support

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

Entrez-Gene ID #22863
UniProt ID #Q6ZNE5

New 04/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-Atg14 (Ser29) (D4B8M) Rabbit mAb	92340	100 µl	65 kDa	Rabbit IgG
Atg14 (D1A1N) Rabbit mAb	96752	100 µl	65 kDa	Rabbit IgG

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

Background: Autophagy is a catabolic process for the autophagosomic-lysosomal degradation of bulk cytoplasmic contents (1,2). Autophagy is generally activated by conditions of nutrient deprivation but is also associated with a number of physiological processes including development, differentiation, neurodegeneration, infection and cancer (3). The molecular machinery of autophagy was largely discovered in yeast and is directed by a number of autophagy-related (Atg) genes. These proteins are involved in the formation of autophagosomes, cytoplasmic vacuoles that are delivered to lysosomes for degradation. The class III type phosphoinositide 3-kinase (PI3K) Vps34 regulates vacuolar trafficking and autophagy (4,5). Multiple proteins associate with Vps34, including p105/Vps15, Beclin-1, UVRAG, Atg14, and Rubicon, to determine Vps34 function (6-12). Atg14 and Rubicon were identified based on their ability to bind to Beclin-1 and participate in unique complexes with opposing functions (9-12). Rubicon, which localizes to the endosome and lysosome, inhibits Vps34 lipid kinase activity; knockdown of Rubicon enhances autophagy and endocytic trafficking (11,12). In contrast, Atg14 localizes to autophagosomes, isolation membranes and ER, and can enhance Vps34 activity. Knockdown of Atg14 inhibits starvation-induced autophagy (11,12). The serine/threonine kinase ULK1 phosphorylates Atg14 at Ser29 to promote autophagosome formation (13).

Specificity/Sensitivity: Phospho-Atg14 (Ser29) (D4B8M) Rabbit mAb recognizes endogenous levels of Atg14 protein only when phosphorylated at Ser29. Atg14 (D1A1N) Rabbit mAb recognizes endogenous levels of total Atg14 protein.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser29 of human Atg14 protein and a synthetic peptide corresponding to residues surrounding Arg70 of human Atg14 protein.

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.

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

- (1) Reggiori, F. and Klionsky, D.J. (2002) *Eukaryot Cell* 1, 11-21.
- (2) Codogno, P. and Meijer, A.J. (2005) *Cell Death Differ* 12 Suppl 2, 1509-18.
- (3) Levine, B. and Yuan, J. (2005) *J Clin Invest* 115, 2679-88.
- (4) Corvera, S. (2001) *Traffic* 2, 859-66.
- (5) Yan, Y. and Backer, J.M. (2007) *Biochem Soc Trans* 35, 239-41.
- (6) Stack, J.H. et al. (1995) *J Cell Biol* 129, 321-34.
- (7) Zeng, X. et al. (2006) *J Cell Sci* 119, 259-70.
- (8) Liang, C. et al. (2006) *Nat Cell Biol* 8, 688-99.
- (9) Itakura, E. et al. (2008) *Mol Biol Cell* 19, 5360-72.
- (10) Sun, Q. et al. (2008) *Proc Natl Acad Sci U S A* 105, 19211-6.
- (11) Zhong, Y. et al. (2009) *Nat Cell Biol* 11, 468-76.
- (12) Matsunaga, K. et al. (2009) *Nat Cell Biol* 11, 385-96.
- (13) Park, J.M. et al. (2016) *Autophagy* 12, 547-64.

Thank you for your recent purchase. If you would like to provide a review visit www.cellsignal.com/comments.

www.cellsignal.com

© 2020 Cell Signaling Technology, Inc.

PhosphoPlus and Cell Signaling Technology are trademarks of Cell Signaling Technology, Inc.

Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.