Revision 1

Store at -20C

#13571

Phospho-WIPI2 (Ser413) Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	49	Rabbit	#Q9Y4P8	26100

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-WIPI2 (Ser413) recognizes endogenous levels of WIPI2 protein only when phosphorylated at Ser413.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser413 of human WIPI2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Autophagy is a catabolic process for the autophagosomic-lysosomal degradation of bulk cytoplasmic contents (1,2). It 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.

Vacuolar trafficking and autophagy are controlled by the class III type phosphoinositide 3-kinase (PI3K) Vps34, which generates phosphoinositide-3-phosphate (PtdIns3P) (4,5). Atg18 and Atg21 are two related WD-repeat proteins that bind PtdIns3P via a conserved Phe-Arg-Arg-Gly motif (6,7). It has been shown that Atg18 binds to Atg2 and that this complex is directed to vacuolar membranes by its interaction with PtdIns3P (8). Human orthologs of Atg18 and Atg21 were identified as members of the WD-repeat protein interacting with phosphoinositides (WIPI) family (9-11). WIPI1 (also called WIPI49) and WIPI2 have been shown to translocate from several vacuolar compartments to LC3-positive autophagosomes during autophagy; this translocation may be used as an autophagy marker (10).

Phospho-WIPI2 (Ser413) Antibody is directed at a site that was identified at Cell Signaling Technology (CST) using PhosphoScan, CST's LC-MS/MS platform for modification site discovery. Phosphorylation at Ser413 was discovered using Phospho-MAPK/CDK Substrate motif antibody. Please visit PhosphoSitePlus, CST's modification site knowledgebase, at www.phosphosite.org for more information.

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. Krick, R. et al. (2006) *FEBS Lett* 580, 4632-8.
7. Strømhaug, P.E. et al. (2004) *Mol Biol Cell* 15, 3553-66.
8. Obara, K. et al. (2008) *J Biol Chem* 283, 23972-80.
9. Jeffries, T.R. et al. (2004) *Mol Biol Cell* 15, 2652-63.
10. Proikas-Cezanne, T. et al. (2007) *FEBS Lett* 581, 3396-404.
11. Polson, H.E. et al. (2010) *Autophagy* 6, 506-22.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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Limited Uses