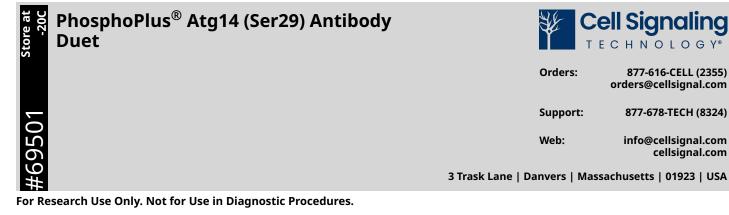
**UniProt ID:** 

**Entrez-Gene Id:** 



#Q6ZNE5 22863					
Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source	
Phospho-Atg14 (Ser29) (D4B8M) Rabbit mAb	92340	100 µl	65 kDa	Rabbit IgG	
Atg14 (D1A1N) Rabbit mAb	96752	100 µl	65 kDa	Rabbit IgG	

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description	PhosphoPlus <sup>®</sup> 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.			
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. <i>Do not aliquot the antibody.</i>			
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 autophagy and endocytic trafficking (11,12). Knockdown of Atg14 inhibits starvation-induced autophagy (11,12).			
	The serine/threonine kinase ULK1 phosphorylates Atg14 at Ser29 to promote autophagosome formation (13).			
Background References	<ol> <li>Reggiori, F. and Klionsky, D.J. (2002) <i>Eukaryot Cell</i> 1, 11-21.</li> <li>Codogno, P. and Meijer, A.J. (2005) <i>Cell Death Differ</i> 12 Suppl 2, 1509-18.</li> <li>Levine, B. and Yuan, J. (2005) <i>J Clin Invest</i> 115, 2679-88.</li> <li>Corvera, S. (2001) <i>Traffic</i> 2, 859-66.</li> <li>Yan, Y. and Backer, J.M. (2007) <i>Biochem Soc Trans</i> 35, 239-41.</li> <li>Stack, J.H. et al. (1995) <i>J Cell Biol</i> 129, 321-34.</li> <li>Zeng, X. et al. (2006) <i>Nat Cell Biol</i> 8, 688-99.</li> <li>Itakura, E. et al. (2008) <i>Mol Biol Cell</i> 19, 5360-72.</li> <li>Sun, Q. et al. (2009) <i>Nat Cell Biol</i> 11, 468-76.</li> <li>Zhong, Y. et al. (2009) <i>Nat Cell Biol</i> 11, 385-96.</li> <li>Park, J.M. et al. (2016) <i>Autophagy</i> 12, 547-64.</li> </ol>			
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