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Autophagy Atg8 Family Antibody Sampler Kit



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

1 Kit (6 x 20 microliters)

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
LC3A (D50G8) XP [®] Rabbit mAb	4599	20 µl	14, 16 kDa	Rabbit IgG
LC3B (D11) XP [®] Rabbit mAb	3868	20 µl	14, 16 kDa	Rabbit IgG
LC3C (D3O6P) Rabbit mAb	14736	20 µl	14 kDa	Rabbit IgG
GABARAP (E1J4E) Rabbit mAb	13733	20 µl	14, 16 kDa	Rabbit IgG
GABARAPL1 (D5R9Y) XP [®] Rabbit mAb	26632	20 µl	14, 16 kDa	Rabbit IgG
GABARAPL2 (D1W9T) Rabbit mAb	14256	20 µl	14 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 Autophagy Atg8 Family Antibody Sampler Kit provides an economical means of detecting each of the Atg8 family members. The kit contains enough primary antibody to perform at least two western blot experiments.

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

Autophagy is a catabolic process for the autophagosomal-lysosomal degradation of bulk cytoplasmic contents (1,2). Autophagy is generally activated by conditions of nutrient deprivation, but it has also been associated with a number of physiological processes, including development, differentiation, neurodegenerative diseases, infection, and cancer (3).

Atg8 is a ubiquitin-like protein that is critical for autophagosome formation. Atg8 is synthesized as a precursor protein that is processed by the cysteine protease Atg4, followed by lipidation with phosphatidylethanolamine (PE) in a ubiquitin-like conjugation pathway involving Atg7 and Atg3 (4). This processing of Atg8, which is described as a conversion from type-I to type-II forms, is frequently described as a marker for autophagy. The type-II form of Atg8 is incorporated into maturing autophagosomes and leads to the recruitment of additional autophagy components, including cargo receptors like SQSTM1/p62. While yeast has a single Atg8 gene, many eukaryotes have at least six orthologs, including three microtubule-associated protein 1 light chain 3 (MAP1LC3/LC3) family members (LC3A, LC3B, and LC3C) and three GABA_A receptor associated protein (GABARAP) family members (GABARAP, GABARAPL1/GEC1, and GABARAPL2/GATE-16). While highly conserved, these various family members can have important differences in their post-translational processing, expression profile, and protein interactions including distinct cargo receptor. This complexity within the Atg8 family is critical for selective mechanisms of autophagy that have been reported (5, 6).

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. Ichimura, Y. et al. (2000) *Nature* 408, 488-92.
5. Slobodkin, M.R. and Elazar, Z. (2013) *Essays Biochem* 55, 51-64.
6. Schaaf, M.B. et al. (2016) *FASEB J* 30, 3961-3978.

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