Revision 2

Store at -20C

#19848

Autophagy Vesicle Elongation (LC3 Conjugation) Antibody Sampler Kit

1 Kit (6 x 20 microliters)

Cell Signaling TECHNOLOGY®

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
LC3A/B (D3U4C) XP® Rabbit mAb	12741	20 µl	14, 16 kDa	Rabbit IgG
Atg7 (D12B11) Rabbit mAb	8558	20 µl	78 kDa	Rabbit IgG
Atg4B (D1G2R) Rabbit mAb	13507	20 µl	48 kDa	Rabbit IgG
Atg4A (D62C10) Rabbit mAb	7613	20 µl	48-60 kDa	Rabbit IgG
GABARAP (E1J4E) Rabbit mAb	13733	20 µl	14, 16 kDa	Rabbit IgG
Atg3 Antibody	3415	20 µl	40 kDa	Rabbit
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 Vesicle Elongation (LC3 Conjugation) Antibody Sampler Kit provides an economical means of detecting target proteins related to autophagy vesicle elongation pathway. The kit contains enough antibody to perform two western blots per primary.

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 autophagosomic-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). Autophagy marker Light Chain 3 (LC3) was originally identified as a subunit of microtubule-associated proteins 1A and 1B (termed MAP1LC3) (4) and subsequently found to contain similarity to the yeast protein Apg8/Aut7/Cvt5 critical for autophagy (5). Three human LC3 isoforms (LC3A, LC3B, and LC3C) undergo post-translational modifications during autophagy (6-8). Cleavage of LC3 at the carboxy terminus immediately following synthesis yields the cytosolic LC3-I form. During autophagy, LC3-I is converted to LC3-II through lipidation by a ubiquitin-like system involving Atg7 and Atg3 that allows for LC3 to become associated with autophagic vesicles (6-9). The presence of LC3 in autophagosomes and the conversion of LC3 to the lower migrating form, LC3-II, have been used as indicators of autophagy (10). Numerous mammalian counterparts to yeast Atg proteins have been described, including three Atg8 proteins (GATE-16, GABARAP, and LC3) and four Atg4 homologs (Atg4A/autophagin-2, Atg4B/autophagin-1, Atg4C/autophagin-3, and Atg4D/autophagin-4) (10-12). The cysteine protease Atg4 is pivotal to autophagosome membrane generation and regulation (13). GABAA receptor associated protein (GABARAP) is an Atg8 family protein with a key role in autophagy, which was originally discovered as a protein associated with the GABAA receptor regulating receptor trafficking to the plasma membrane (14). Processing of GABARAP involves cleavage by Atg4 family members (15,16) followed by conjugation by the E1 and E2 like enzymes Atg7 and Atg3 (17,18).

Background References

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