

#19848 Store at -20°C

Autophagy Vesicle Elongation (LC3 Conjugation) Antibody Sampler Kit

1 Kit (6 x 20 microliters)



Cell Signaling
TECHNOLOGY®

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

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

- Reggiori, F. and Klionsky, D.J. (2002) *Eukaryot Cell* 1, 11-21.
- Codogno, P. and Meijer, A.J. (2005) *Cell Death Differ* 12 Suppl 2, 1509-18.
- Levine, B. and Yuan, J. (2005) *J Clin Invest* 115, 2679-88.
- Mann, S.S. and Hammarback, J.A. (1994) *J Biol Chem* 269, 11492-7.
- Lang, T. et al. (1998) *EMBO J* 17, 3597-607.
- He, H. et al. (2003) *J Biol Chem* 278, 29278-87.
- Tanida, I. et al. (2004) *J Biol Chem* 279, 47704-10.
- Wu, J. et al. (2006) *Biochem Biophys Res Commun* 339, 437-42.
- Ichimura, Y. et al. (2000) *Nature* 408, 488-92.
- Kabeya, Y. et al. (2004) *J Cell Sci* 117, 2805-12.
- Kabeya, Y. et al. (2000) *EMBO J* 19, 5720-8.
- Mariño, G. et al. (2003) *J Biol Chem* 278, 3671-8.
- Sou, Y.S. et al. (2008) *Mol Biol Cell* 19, 4762-75.
- Wang, H. et al. (1999) *Nature* 397, 69-72.

15. Tanida, I. et al. (2004) *J Biol Chem* 279, 36268-76.
16. Hemelaar, J. et al. (2003) *J Biol Chem* 278, 51841-50.
17. Tanida, I. et al. (2001) *J Biol Chem* 276, 1701-6.
18. Tanida, I. et al. (2002) *J Biol Chem* 277, 13739-44.

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.