#4108 Store at -20°C

LC3A/B Antibody

Cell Signaling TECHNOLOGY®

☑ 100 µl
(10 western blots)

Orders ■ 877-616-CELL (2355)
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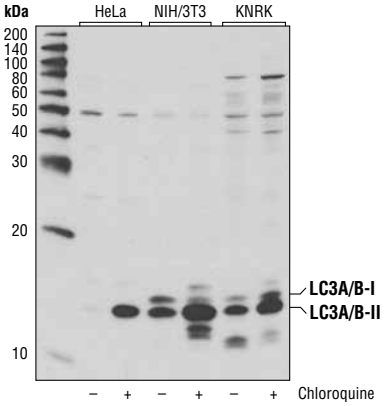
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #84557
Swiss-Prot Acc. #Q9H492

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC, F Endogenous	H, M, R, (Mk, C, X, Z, Dg)	14, 16 kDa	Rabbit**

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 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 (6-9). 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 (6-10). 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 (11).

Specificity/Sensitivity: LC3A/B Antibody detects endogenous levels of total LC3A and LC3B proteins. Cross-reactivity may exist with LC3C. Stronger reactivity is observed with the type II form of LC3A/B.



Western blot analysis of extracts from various cell lines, untreated or treated with chloroquine (50 µM, overnight) using LC3A/B Antibody.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly40 of LC3A/B. Antibodies are purified by protein A and peptide affinity chromatography.

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.*

***Species cross-reactivity is determined by western blot.**

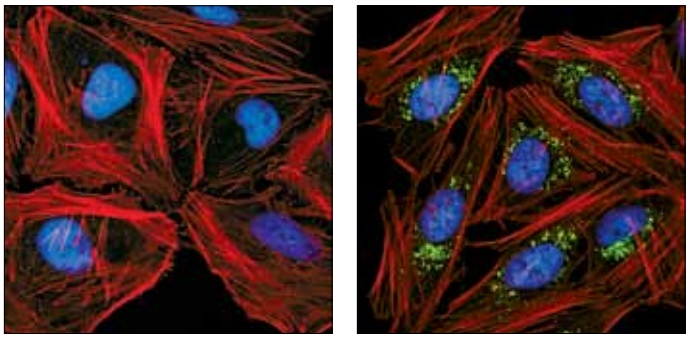
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

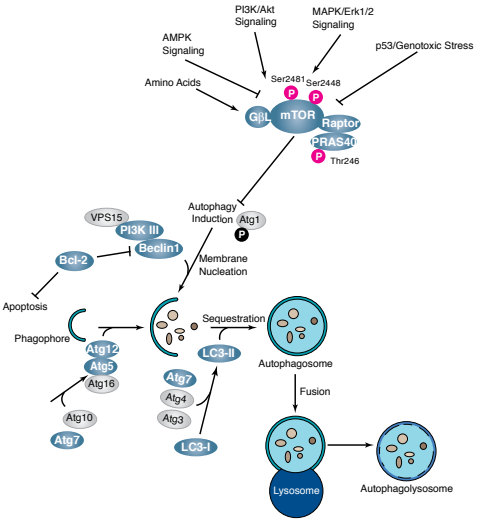
Western blotting	1:1000
Immunofluorescence (IF-IC)	1:200
IF Protocol:	Methanol Permeabilization required
Flow Cytometry	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.



Confocal immunofluorescent analysis of HeLa cells, untreated (left) or chloroquine-treated (right), using LC3A/B Antibody (green). Actin filaments were labeled using DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



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

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Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.

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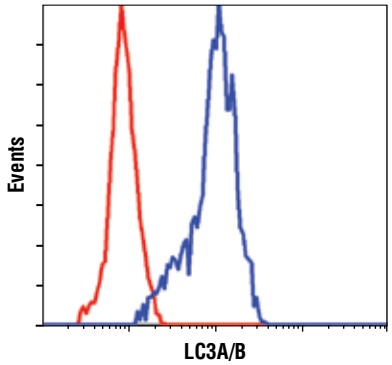

Flow cytometric analysis of Hela cells using LC3A/B Antibody (blue) compared to a nonspecific negative control antibody (red).

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, 1509–1518.

(3) Levine, B. and Yuan, J. (2005) *J. Clin. Invest.* 115, 2679–2688.

(4) Mann, S.S. and Hammarback, J.A. (1994) *J. Biol. Chem.* 269, 11492–11497.

(5) Lang, T. et al. (1998) *EMBO J.* 17, 3597–3607.

(6) Kabeya, Y. et al. (2000) *EMBO J.* 19, 5720–5728.

(7) He, H. et al. (2003) *J. Biol. Chem.* 278, 29278–29287.

(8) Tanida, I. et al. (2004) *J. Biol. Chem.* 279, 47704–47710.

(9) Wu, J. et al. (2006) *Biochem. Biophys. Res. Commun.* 339, 437–442.

(10) Ichimura, Y. et al. (2000) *Nature* 408, 488–492.

(11) Kabeya, Y. et al. (2004) *J. Cell Sci.* 117, 2805–2812.

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