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LC3A/B (D3U4C) XP® Rabbit mAb (Alexa Fluor® 647 Conjugate)



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TECHNOLOGY®

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

Applications: IF-IC	Reactivity: H M R	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #Q9H492, #Q9GZQ8	Entrez-Gene Id: 84557, 81631
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Product Usage Information	Application Immunofluorescence (Immunocytochemistry)	Dilution 1:50
Storage	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. <i>Do not aliquot the antibody. Protect from light. Do not freeze.</i>	
Specificity / Sensitivity	LC3A/B (D3U4C) XP® Rabbit mAb (Alexa Fluor® 647 Conjugate) recognizes endogenous levels of total LC3A and LC3B proteins.	
Species predicted to react based on 100% sequence homology:	Xenopus, Bovine, Dog, Pig	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu44 of human LC3B protein (conserved in LC3A).	
Product Description	This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct immunofluorescent analysis in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated LC3A/B (D3U4C) XP® Rabbit mAb #12741.	
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 posttranslational 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).	
Background References	<ol style="list-style-type: none"> 1. Reggiori, F. and Klionsky, D.J. (2002) <i>Eukaryot. Cell</i> 1, 11-21. 2. Codogno, P. and Meijer, A.J. (2005) <i>Cell Death Differ.</i> 12 Suppl 2, 1509-18. 3. Levine, B. and Yuan, J. (2005) <i>J. Clin. Invest.</i> 115, 2679-88. 4. Mann, S.S. and Hammarback, J.A. (1994) <i>J. Biol. Chem.</i> 269, 11492-97. 5. Lang, T. et al. (1998) <i>EMBO J.</i> 17, 3597-607. 6. Kabeya, Y. et al. (2000) <i>EMBO J.</i> 19, 5720-28. 7. He, H. et al. (2003) <i>J. Biol. Chem.</i> 278, 29278-87. 8. Tanida, I. et al. (2004) <i>J. Biol. Chem.</i> 279, 47704-10. 9. Wu, J. et al. (2006) <i>Biochem. Biophys. Res. Commun.</i> 339, 437-42. 10. Ichimura, Y. et al. (2000) <i>Nature</i> 408, 488-92. 11. Kabeya, Y. et al. (2004) <i>J. Cell Sci.</i> 117, 2805-12. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Applications Key	IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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