Atg3 Antibody

#3415 Store at -20°C

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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rev. 05/18/11

Entrez-Gene ID #5156
Swiss-Prot Acc. #P16234

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, (C, B, X, Dg)	40 kDa	Rabbit**

Background: Autophagy is a catabolic process for the autophagosomic-lysosomal degradation of bulk cytoplasmic contents (1). The molecular machinery of autophagy was largely discovered in yeast and referred to as autophagy-related genes (Atg). Formation of the autophagic vesicles involves two ubiquitin-like conjugation systems, Atg12-Atg5 and Atg8-phosphatidylethanolamine (Atg8-PE), which are essential for autophagy and widely conserved in eukaryotes (2). There are at least three Atg8 homologs in mammalian cells, GATE-16, GABARAP, and LC3, that are conjugated by lipids (3,4). Lipid conjugation of Atg8 and its mammalian homologs requires Atg3 (Apg3p/Aut1p in yeast), an ubiquitously expressed E2-like enzyme (5-7). Following C-terminal cleavage by the cysteine protease Atg4, the exposed glycine residue of Atg8 binds to the E1-like enzyme Atg7, is transferred to Atg3, and then conjugated to phophatidylethanolamine. Atg3-deficient mice die within 1 day after birth and are completely defective for the conjugation of Atg8 homlogs and autophagome formation (8).

Specificity/Sensitivity: Atg3 Antibody detects endogenous levels of total Atg3 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of Atg3. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

(1) Reggiori, F. and Klionsky, D.J. (2002) *Eukaryot Cell* 1, 11–21.

(2) Ohsumi, Y. (2001) *Nat Rev Mol Cell Biol* 2, 211–6.

(3) Kabeya, Y. et al. (2000) *EMBO J* 19, 5720–8.

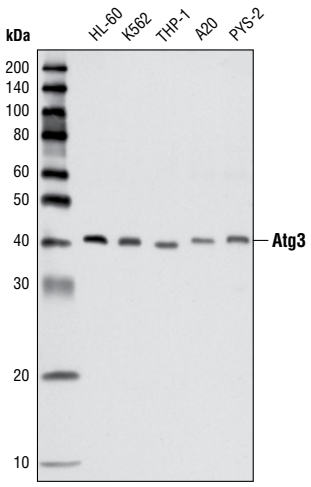
(4) Kabeya, Y. et al. (2004) *J Cell Sci* 117, 2805–12.

(5) Tanida, I. et al. (2002) *J Biol Chem* 277, 13739–44.

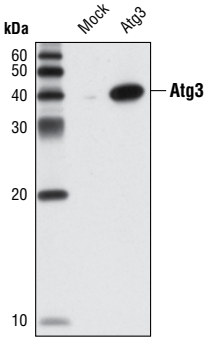
(6) Ichimura, Y. et al. (2000) *Nature* 408, 488–92.

(7) Schlumpberger, M. et al. (1997) *J Bacteriol* 179, 1068–76.

(8) Sou, Y.S. et al. (2008) *Mol Biol Cell* 19, 4762–75.



Western blot analysis of extracts from various cell lines using Atg3 Antibody.



Western blot analysis of extracts from HeLa cells, mock transfected or transfected with mouse Atg3, using Atg3 Antibody.

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

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.

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.

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.