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# Product Information

**Anti-Atg16L**
produced in rabbit, IgG fraction of antiserum

Catalog Number **A7356**

## Product Description

Anti-Atg16L is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 2-15 of mouse Atg16L (GeneID: 77040), conjugated to KLH via a C-terminal cysteine residue. The corresponding sequence is identical in rat and human. Whole serum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-Atg16L recognizes human, rat, and mouse Atg16L. by immunoblotting (several isoform bands around the 70 kDa). Detection of the Atg16L bands by immunoblotting is specifically inhibited by the immunizing peptide.

Macroautophagy, usually referred to as autophagy, is a major pathway for bulk degradation of cytoplasmic constituents and organelles. In this process, portions of the cytoplasm are sequestered into double membrane vesicles, the autophagosomes, and subsequently delivered to the lysosome for degradation and recycling.[1,2] Although autophagy is a constitutive cellular event, it is enhanced under certain conditions such as starvation, hormonal stimulation and drug treatments.[3] Autophagy is required for normal turnover of cellular components during starvation. It plays an essential role in cellular differentiation, cell death and aging. Defective autophagy may contribute to certain human diseases such as cancer, neurodegenerative diseases, muscular disorders and pathogen infections.[4,5] Autophagy is an evolutionarily conserved pathway seen in all eukaryotic cells.[1] At least 16 ATG genes required for auto-phagosome formation were identified in yeast by genetic screens. For many of these genes, related homologs have been identified in mammals.[6]

Two ubiquitin-like conjugation systems are involved in autophagosome formation: Atg12 and Atg8 conjugation systems. The ubiquitin-like proteins Atg8 and Atg12 are activated by Atg7, an E1-like enzyme essential for both conjugation systems. Atg8 is then transferred to the E2-like enzyme Atg3 and conjugated to phosphatidyl-ethanolamine, whereas Atg12 is transferred to Atg10, another E2-like enzyme, followed by conjugation to Atg5.[7] The Atg12-Atg5 conjugate further forms a ~800 kDa protein complex with the multimeric protein Atg16L. The Atg12-Atg5.Atg16 multimeric complex plays an essential role in autophagy. Atg16L interacts with both Atg5 and additional Atg16L monomers. Together with Atg12-Atg5 conjugate, Atg16L associates with the autophagic isolation membrane for the duration of autophagosome formation. Membrane targeting of Atg16 requires Atg5 but not Atg12.[8] Atg16L is expressed in different isoform patterns depending on the tissue. At least four spliced isoforms exist in humans. All isoforms have an N-terminal coiled-coil domain and C-terminal WD repeats.[9]

## Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

## Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

## Product Profile

Immunoblotting: a working dilution of 1:500-1:1,000 is recommended using whole extracts of human A549 cells, rat PC12 cells, and HEK-293T cells expressing mouse ATG16L.

**Note**: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working concentration by titration.

**References**

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