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Product Information

Anti-Atg14
produced in rabbit, IgG fraction of antiserum

Product Number **A6358**

Product Description

Anti-Atg14 is produced in rabbit using as immunogen a synthetic peptide corresponding to a fragment of human Atg14 (GeneID: 22863), conjugated to KLH. Whole serum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-Atg14 recognizes human and mouse Atg14. The antibody may be used in several immunochemical techniques including immunoblotting (~60 kDa). Detection of the Atg14 band 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 evolutionary conserved pathway seen in all eukaryotic cells.[1] At least 16 ATG genes required for autophagosome formation were identified in yeast by genetic screens. For many of these genes, related homologs have been identified in mammals.[6]

Atg14 (also known as KIAA0831) is an essential gene for autophagy. Atg14 is present on autophagic isolation membranes and is required for autophagosome formation. Atg14 together with Vps34 and Atg6/Vps30 forms part of a PI3-kinase complex in yeast. Two distinct PI3-kinase complexes, complex I and II, were identified. Complex I is involved in autophagy, whereas complex II is involved in vacuolar protein sorting. Each complex contains three common subunits, Vps34p, Vps15p and Vps30p and one unique subunit, Atg14 in complex I and Vps38p in complex II.[7] In mammals, homologs of Vps34, Vps15, Vps30/Atg6, Atg14 and Vps38 were identified as Vps34, p150, Beclin 1, Atg14 and UVRAG, respectively. Although both Atg14 and UVRAG interact with Beclin 1, they are not present in the same complex. While Atg14 is present on autophagic isolation membranes, UVRAG mainly localized to Rab9-positive endocytic compartments.[8]

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

For R&D use only. Not for drug, household, or other uses. Please consult the 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 at –20 °C in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, 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 1:250–1:500 is recommended using whole extracts of human HeLa cells.

Immunoblotting: a working dilution of 1:150–1:300 is recommended using whole extracts of mouse 3T3 cells and developing with a sensitive film.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration..

References

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VS,ST,KAA,TD,KAA,MAM 02/19-1