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ProductInformation

Anti-Beclin 1
produced in rabbit, affinity isolated antibody

Catalog Number **B6186**

Product Description

Anti-Beclin 1 is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 329-345 of human Beclin 1 (GeneID: 8678), conjugated to KLH via an N-terminal cysteine residue. The corresponding sequence is identical in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Beclin 1 recognizes human, rat, and mouse Beclin 1 by immunoblotting (~60 kDa), immunoprecipitation, and immunohistochemistry. Detection of the Beclin 1 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]

Beclin 1, a Bcl2 interacting protein, is the mammalian ortholog of yeast Atg6/Vps30. Beclin 1 is able to complement the autophagy deficiency of yeast lacking Atg6 and restores autophagy in human MCF7 breast carcinoma cells. The autophagy-promoting activity of Beclin 1 in MCF7 cells is associated with inhibition of MCF7 cellular proliferation.[7] Beclin 1 is essential for early embryonic development and is a haplo-insufficient tumor-suppressor gene.[8] Heterozygous Beclin 1 mutant mice have increased spontaneous tumorigenesis. Beclin 1 is monoallelically deleted in a high percentage of sporadic human breast, ovarian and prostate carcinomas, and is expressed at reduced levels in those tumors.[9] Beclin 1 decreases in an age-dependent fashion in human brains, possibly leading to a reduction of autophagic activity during aging, which may contribute to the accumulation of mutant Huntingtin and the age-delayed onset of Huntington disease.[10]

Reagent

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

Antibody concentration: ~1 mg/mL

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, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using whole extracts of rat PC12 or mouse 3T3 cells.

Immunoprecipitation: A working amount of 1-2 µL is recommended using extracts of human HEK-293T cells expressing recombinant human Beclin 1 fusion protein.

Immunohistochemistry: A working concentration of 5-10 μg/mL is recommended using biotin/ExtrAvidin®-Peroxidase staining of heat-retrieved, formalin-fixed, paraffin-embedded rat brain sections.

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

References

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