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ProductInformation

Anti-Beclin 1 (N-terminal)
produced in rabbit, IgG fraction of antiserum

Catalog Number **B6061**

Product Description

Anti-Beclin 1 (N-terminal) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 29-46 of human Beclin 1 (Gene ID: 8678), conjugated to KLH via a C-terminal cysteine residue. The corresponding sequence is identical in rat and mouse. Whole antiserum is fractionated and further purified by anion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Beclin 1 (N-terminal) recognizes human Beclin 1 by immunoblotting (~60 kDa), immunoprecipitation, and immunohistochemistry. Detection of the Beclin 1 band by immunoblotting is specifically inhibited with 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 genes encoding for autopahgy (ATG) related proteins that are 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 disease 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.

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. Storage in “frost-free” freezers is also 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 antibody dilution of 1:250–1:500 is recommended using a whole extract of human HeLa cells.

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

Immunohistochemistry: A working antibody dilution of 1:50–1:100 is recommended using biotin/ExtrAvidin™-Peroxidase staining of heat-retrieved, formalin-fixed, paraffin-embedded sections of human cerebellum.

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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