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Product Information

Anti-ULK1
produced in rabbit, affinity isolated antibody

Product Number **SAB4200106**

Product Description

Anti-ULK1 is produced in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human ULK1 (GeneID: 8408), conjugated to KLH. The corresponding sequence differs by one amino acid in mouse and rat ULK1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-ULK1 recognizes human ULK1. The antibody may be used in several immunochemical techniques including immunoblotting (~150 kDa). Detection of the ULK1 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]

The autophagic-specific protein kinase Atg1 is a negative regulator of the target of rapamycin (TOR)/S6 kinase (S6K) pathway.[7] Atg1 forms a complex with Atg13, which is essential for autophagy in yeast. In mammals, two Atg1 homologs have been identified, ULK1 (uncoordinated 51-like kinase 1) and ULK2.[8] The Unc-51 family of serine/threonine kinases was shown to be important for axon growth and endocytosis.[9]

Knockdown of ULK1, but not ULK2, inhibits the autophagic response. Overexpression of ULK1 also inhibits autophagy, suggesting that ULK1 may have multiple mechanisms for regulating autophagy.[8] ULK1 localizes to cytoplasmic structures, some of which are GFP-LC3-positive, and is involved in modulating Atg9 subcellular dynamics.[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: ~1.0 mg/mL

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

Store at –20 °C. For continuous use, the product may be stored at 2–8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. 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 antibody concentration of 1-2 μg/mL is recommended using whole extracts of HEK-293T cells overexpressing human ULK1.

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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