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Product Information

Anti-VPS34
produced in rabbit, affinity isolated antibody

Catalog Number **V9764**

Product Description

Anti-VPS34 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 22-34 of human VPS34 (GeneID: 5289), conjugated to KLH via an added cysteine residue. The corresponding sequence is identical in mouse and rat. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-VPS34 recognizes human, rat, and mouse VPS34 by immunoblotting (~105 kDa). Detection of the VPS34 band by immunoblotting is specifically inhibited by the immunizing peptide.

The class III PI3K (phosphoinositide 3-kinase), Vps34 (vacuolar protein sorting 34) is a lipid kinase that specifically utilizes phosphatidylinositol as a substrate, producing the single lipid product PtdIns3P. Vps34 is known to be involved in endocytosis and vesicular trafficking. Vps34 has been implicated in mTOR (mammalian target of rapamycin) nutrient-sensing pathway, trimeric G-protein signaling and regulation of autophagy.[1, 2]

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.[3, 4] Although autophagy is a constitutive cellular event, it is enhanced under certain conditions such as starvation, hormonal stimulation and drug treatments.[5] 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.[6, 7] Autophagy is an evolutionarily conserved pathway seen in all eukaryotic cells.[3] 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.[8] Vps34 and its regulatory protein kinase Vps15 are essential for autophagy.[2, 9] In mammalian cells, Vps34, forms a multiprotein complex with the proautophagic tumor suppressors Beclin1/Atg6, Bif-1, and UVRAG, that initiates autophagosome formation. Distinct Vps34 complexes also regulate endocytic processes that are critical for late-stage autophagosome-lysosome fusion.[10]

Reagent

The product is provided as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as preservative.

Antibody Concentration: ~ 1.0 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 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 concentration of 2-4 µg/mL is recommended using whole extracts of HEK-293T cells expressing human VPS34.

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

References

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