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Product Information

Anti-p62/SQSTM1 (C-terminal)
produced in rabbit, affinity isolated antibody

Product Number **P0068**

Product Description

Anti-p62/SQSTM1 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence at the C-terminal of human p62/SQSTM1 (GeneID: 8878), conjugated to KLH via a cysteine residue. The corresponding sequence is identical in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-p62/SQSTM1 (C-terminal) recognizes human, rat, and mouse p62/SQSTM1. The antibody may be used in various immunochemical techniques including immunoblotting (~62 kDa) and immunoprecipitation. Detection of the p62/SQSTM1 band by immunoblotting is specifically inhibited by the immunizing peptide.

The p62 protein, also named sequestosome 1 (SQSTM1), is a multifunctional protein that binds ubiquitin and regulates the activation of the nuclear factor kappa-B (NF-κB) signaling pathway.[1,2] Mutations in this gene result in sporadic and familial Paget disease of bone.[2] p62 is commonly found in inclusion bodies containing polyubiquitinated protein aggregates that accumulate in several degenerative diseases. Autophagy is involved in cellular clearance of these protein aggregates.[3]

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.[4,5] Although autophagy is a constitutive cellular event, it is enhanced under certain conditions such as starvation, hormonal stimulation and drug treatments.[6] 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.[7,8]

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.[9] Two ubiquitin-like conjugation systems are involved in autophagosome formation: Atg12 and Atg8 conjugation systems. The best characterized Atg8 homolog is LC3. LC3 is responsible for recruiting p62 into autophagosomes.[3,10] p62 is also able to polymerize through its N-terminal PB1 domain and to interact with polyubiquitinated proteins through its C-terminal UBA domain. Therefore, p62 was suggested to be the linker between protein aggregates and the autophagy machinery.[11]

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

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 antibody concentration of 4–8 μg/mL is recommended using whole extracts of human A549 cells.

Immunoblotting: a working antibody concentration of 2–4 μg/mL is recommended using whole extracts of rat PC12 cells.

Immunoprecipitation: a working antibody amount of 2–4 μg is recommended using a whole extract of NIH-3T3 cells.

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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