SANTA CRUZ BIOTECHNOLOGY, INC.

APG7 (K-17): sc-12497

BACKGROUND

In yeast, autophagy is an essential process for survival during nutrient starvation and cell differentiation. The process of autophagy is characterized as a non-selective degradation of cytoplasmic proteins into membrane stuctures called autophagosomes, and it is dependent on several proteins, including the autophagy proteins APG5 and APG7. Yeast Apg7 and the human homolog, APG7, share similarities with the ubiquitin-activating enzyme E1 in *Saccharomyces cerevisiae*, and are likewise responsible for enzymatically activating the autophagy conjugation system. Apg5 and the human homolog, APG5 (also designated apoptosis specific protein or APS), function as substrates for the autophagy protein APG12. These proteins are covalently bonded together to form APG12/APG5 conjugates, which are required for the progression of autophagy.

REFERENCES

1. Kametaka, S., et al. 1996. Structural and functional analyses of APG5, a gene involved in autophagy in yeast. Gene 178: 139-143.
2. Klionsky, D.J. 1998. Nonclassical protein sorting to the yeast vacuole. J. Biol. Chem. 273: 10807-10810.
3. Mizushima, N., et al. 1998. A new protein conjugation system in human. The counterpart of the yeast Apg12p conjugation system essential for autophagy. J. Biol. Chem. 273: 33889-33892.
4. Mizushima, N., et al. 1998. A protein conjugation system essential for autophagy. Nature 395: 395-398.
5. Hammond, E.M., et al 1998. Homology between a human apoptosis specific protein and the product of APG5, a gene involved in autophagy in yeast. FEBS Lett. 425: 391-395.
6. Tanida, I., et al. 1999. APG7p/Cvt2p: A novel protein-activating enzyme essential for autophagy. Mol. Biol. Cell 10: 1367-1379.

CHROMOSOMAL LOCATION

Genetic locus: ATG7 (human) mapping to 3p25.3.

SOURCE

APG7 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of APG7 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12497 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

APG7 (K-17) is recommended for detection of APG7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

APG7 (K-17) is also recommended for detection of APG7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for APG7 siRNA (h): sc-41447, APG7 shRNA Plasmid (h): sc-41447-SH and APG7 shRNA (h) Lentiviral Particles: sc-41447-V.

Molecular Weight of APG7: 71 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Caki-1 cell lysate: sc-2224 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Coupienne, I., et al. 2011. NFκB inhibition improves the sensitivity of human glioblastoma cells to 5-aminolevulinic acid-based photodynamic therapy. Biochem. Pharmacol. 81: 606-616.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.