

Katanin p60 AL2 (N-15): sc-84855

BACKGROUND

Microtubules are polymers of α and β subunits that form the mitotic spindle and assist in the organization of membranous organelles during interphase. Katanin is a heterodimer complex that severs microtubules in an ATP-dependent manner. The severing of microtubules by the Katanin complex may promote reorganization of cellular microtubule arrays and release of microtubules from the centrosome following nucleation. The Katanin complex is composed of a 60 kDa subunit (Katanin p60 A1) and a 80 kDa accessory protein (Katanin p80 B1). Katanin p60 A1 is responsible for the severing and disassembly of microtubules, while Katanin p80 B1 targets the complex to the centrosome. Katanin p60 A1 and Katanin p80 B1 belong to the AAA ATPase family, which also includes the Katanin p60 A1-like proteins, Katanin p60 AL1 and Katanin p60 AL2.

REFERENCES

1. McNally, F.J. and Vale, R.D. 1993. Identification of Katanin, an ATPase that severs and disassembles stable microtubules. *Cell* 75: 419-429.
2. McNally, F.J., Okawa, K., Iwamatsu, A. and Vale, R.D. 1996. Katanin, the microtubule-severing ATPase, is concentrated at centrosomes. *J. Cell Sci.* 109: 561-567.
3. Hartman, J.J., Mahr, J., McNally, K., Okawa, K., Iwamatsu, A., Thomas, S., Cheesman, S., Heuser, J., Vale, R.D. and McNally, F.J. 1998. Katanin, a microtubule-severing protein, is a novel AAA ATPase that targets to the centrosome using a WD40-containing subunit. *Cell* 93: 277-287.
4. Ahmad, F.J., Yu, W., McNally, F.J. and Baas, P.W. 1999. An essential role for Katanin in severing microtubules in the neuron. *J. Cell Biol.* 145: 305-315.
5. McNally, K.P., Bazirgan, O.A. and McNally, F.J. 2000. Two domains of p80 Katanin regulate microtubule severing and spindle pole targeting by p60 Katanin. *J. Cell Sci.* 113: 1623-1633.
6. Karabay, A., Yu, W., Solowska, J.M., Baird, D.H. and Baas, P.W. 2004. Axonal growth is sensitive to the levels of Katanin, a protein that severs microtubules. *J. Neurosci.* 24: 5778-5788.
7. Toyo-Oka, K., Sasaki, S., Yano, Y., Mori, D., Kobayashi, T., Toyoshima, Y.Y., Tokuoka, S.M., Ishii, S., Shimizu, T., Muramatsu, M., Hiraiwa, N., Yoshiki, A., Wynshaw-Boris, A. and Hirotsune, S. 2005. Recruitment of Katanin p60 by phosphorylated NDEL1, an LIS1 interacting protein, is essential for mitotic cell division and neuronal migration. *Hum. Mol. Genet.* 14: 3113-3128.
8. Sudo, H. and Maru, Y. 2008. LAPSER1/LZTS2: a pluripotent tumor suppressor linked to the inhibition of Katanin-mediated microtubule severing. *Hum. Mol. Genet.* 17: 2524-2540.

CHROMOSOMAL LOCATION

Genetic locus: KATNAL2 (human) mapping to 18q21.1; Katnal2 (mouse) mapping to 18 E3.

RESEARCH USE

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

SOURCE

Katanin p60 AL2 (N-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of Katanin p60 AL2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84855 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Katanin p60 AL2 (N-15) is recommended for detection of Katanin p60 AL2 of mouse, rat and 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).

Katanin p60 AL2 (N-15) is also recommended for detection of Katanin p60 AL2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Katanin p60 AL2 siRNA (h): sc-75365, Katanin p60 AL2 siRNA (m): sc-146343, Katanin p60 AL2 shRNA Plasmid (h): sc-75365-SH, Katanin p60 AL2 shRNA Plasmid (m): sc-146343-SH, Katanin p60 AL2 shRNA (h) Lentiviral Particles: sc-75365-V and Katanin p60 AL2 shRNA (m) Lentiviral Particles: sc-146343-V.

Molecular Weight of Katanin p60 AL2: 61/53 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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