SANTA CRUZ BIOTECHNOLOGY, INC.

Katanin p60 AL1 (A-10): sc-373814

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., et al. 1993. Identification of katanin, an ATPase that severs and disassembles stable microtubules. Cell 75: 419-429.
2. McNally, F.J., et al. 1996. Katanin, the microtubule-severing ATPase, is concentrated at centrosomes. J. Cell Sci. 109: 561-567.

CHROMOSOMAL LOCATION

Genetic locus: KATNAL1 (human) mapping to 13q12.3; Katnal1 (mouse) mapping to 5 G3.

SOURCE

Katanin p60 AL1 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 72-109 within an internal region of Katanin p60 AL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Katanin p60 AL1 (A-10) is available conjugated to agarose (sc-373814 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373814 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373814 PE), fluorescein (sc-373814 FITC), Alexa Fluor® 488 (sc-373814 AF488), Alexa Fluor® 546 (sc-373814 AF546), Alexa Fluor® 594 (sc-373814 AF594) or Alexa Fluor® 647 (sc-373814 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373814 AF680) or Alexa Fluor® 790 (sc-373814 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373814 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Katanin p60 AL1 (A-10) is recommended for detection of Katanin p60 AL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

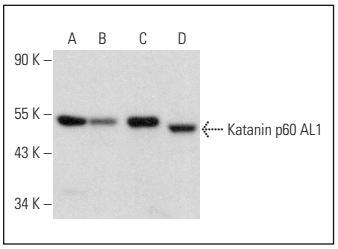
Katanin p60 AL1 (A-10) is also recommended for detection of Katanin p60 AL1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Katanin p60 AL1 siRNA (h): sc-75364, Katanin p60 AL siRNA (m): sc-146342, Katanin p60 AL1 shRNA Plasmid (h): sc-75364-SH, Katanin p60 AL shRNA Plasmid (m): sc-146342-SH, Katanin p60 AL1 shRNA (h) Lentiviral Particles: sc-75364-V and Katanin p60 AL shRNA (m) Lentiviral Particles: sc-146342-V.

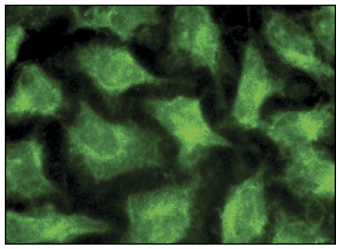
Molecular Weight of Katanin p60 AL1: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or A549 cell lysate: sc-2413.

DATA



Katanin p60 AL1 (A-10): sc-373814. Western blot analysis of Katanin p60 AL1 expression in Jurkat (**A**), HeLa (**B**), A549 (**C**) and NIH/3T3 (**D**) whole cell lysates.



Katanin p60 AL1 (A-10): sc-373814. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

1. Kim, J.H., et al. 2016. Genome-wide screen identifies novel machineries required for both ciliogenesis and cell cycle arrest upon serum starvation. Biochim. Biophys. Acta 1863: 1307-1318.
2. Hatakeyama, E., et al. 2018. KATNAL1 is a more active and stable isoform of katanin, and is expressed dominantly in neurons. Biochem. Biophys. Res. Commun. 507: 389-394.
3. Gao, L.L., et al. 2019. Microtubule-severing protein Katanin p60 ATPase-containing subunit A-like 1 is involved in pole-based spindle organization during mouse oocyte meiosis. Mol. Med. Rep. 20: 3573-3582.
4. Yoshida, S., et al. 2020. The novel ciliogenesis regulator DYRK2 governs Hedgehog signaling during mouse embryogenesis. Elife 9: e57381.
5. Li, C.R., et al. 2022. Fidgetin knockdown and knockout influences female reproduction distinctly in mice. J. Biomed. Res. 36: 269-279.

RESEARCH USE

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