SANTA CRUZ BIOTECHNOLOGY, INC.

CLASP2 (A-6): sc-514839

BACKGROUND

CLASP2 (cytoplasmic linker associated protein 2), also known as KIAA0627 or hOrbit2, is a 1,294 amino acid protein that contains five HEAT repeats and localizes to the cytoplasm and the cytoskeleton, as well as to the kinetochore and the Golgi apparatus. Expressed primarily in brain tissue, CLASP2 functions as a microtubule plus-end tracking protein that regulates the stability of dynamic microtubules and is required for the proper polarization of cytoplasmic microtubule arrays in migrating cells. CLASP2 interacts with EB1, EB3, ELKS and CLIP-115 and, in addition to stabilizing microtubules, plays an important role in maintaining the stability of the kinetochore and is crucial for proper chromosomal alignment. CLASP2 is subject to phosphorylation by GSK-3β, an event that is thought to negatively regulate the ability of CLASP2 to bind to microtubules. Two isoforms of CLASP2, designated β and γ, exist due to alternative splicing events.

REFERENCES

1. Akhmanova, A., et al. 2001. Clasps are CLIP-115 and -170 associating proteins involved in the regional regulation of microtubule dynamics in motile fibroblasts. Cell 104: 923-935.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605853. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Lee, H., et al. 2004. The microtubule plus end tracking protein Orbit/MAST/CLASP acts downstream of the tyrosine kinase Abl in mediating axon guidance. Neuron 42: 913-926.
4. Mimori-Kiyosue, Y., et al. 2005. CLASP1 and CLASP2 bind to EB1 and regulate microtubule plus-end dynamics at the cell cortex. J. Cell Biol. 168: 141-153.
5. Wittmann, T. and Waterman-Storer, C.M. 2005. Spatial regulation of CLASP affinity for microtubules by Rac1 and GSK3β in migrating epithelial cells. J. Cell Biol. 169: 929-939.
6. Galjart, N. 2005. CLIPs and CLASPs and cellular dynamics. Nat. Rev. Mol. Cell Biol. 6: 487-498.
7. Lansbergen, G., et al. 2006. CLASPs attach microtubule plus ends to the cell cortex through a complex with LL5β. Dev. Cell 11: 21-32.

CHROMOSOMAL LOCATION

Genetic locus: CLASP2 (human) mapping to 3p22.3; Clasp2 (mouse) mapping to 9 F3.

SOURCE

CLASP2 (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 332-357 within an internal region of CLASP2 of human origin.

STORAGE

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

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.

Blocking peptide available for competition studies, sc-514839 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CLASP2 (A-6) is recommended for detection of CLASP2 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).

Suitable for use as control antibody for CLASP2 siRNA (h): sc-78538, CLASP2 siRNA (m): sc-142361, CLASP2 shRNA Plasmid (h): sc-78538-SH, CLASP2 shRNA Plasmid (m): sc-142361-SH, CLASP2 shRNA (h) Lentiviral Particles: sc-78538-V and CLASP2 shRNA (m) Lentiviral Particles: sc-142361-V.

Molecular Weight of CLASP2γ: 160 kDa.

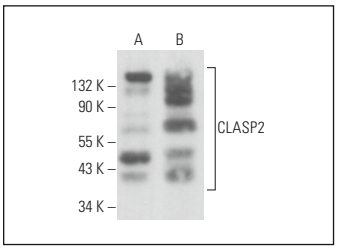
Molecular Weight of CLASP2β: 47 kDa.

Positive Controls: CLASP2 (h): 293T Lysate: sc-114389, mouse brain extract: sc-2253 or human brain extract: sc-364375.

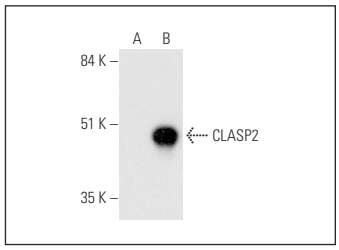
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CLASP2 (A-6): sc-514839. Western blot analysis of CLASP2 expression in human brain (**A**) and mouse brain (**B**) tissue extracts.



CLASP2 (A-6): sc-514839. Western blot analysis of CLASP2 expression in non-transfected: sc-117752 (**A**) and human CLASP2 transfected: sc-114389 (**B**) 293T whole cell lysates.

RESEARCH USE

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