SANTA CRUZ BIOTECHNOLOGY, INC.

JRAB (G-10): sc-376791

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

JRAB (junctional Rab 13-binding protein, MICAL-like protein 2) is a 904 amino acid protein with one CH (calponin-homology) domain and one LIM zinc-binding domain. JRAB has been shown to interact with Rab 13 and Rab 8 to facilitate cellular transport of claudin-1, Occludin and E-cadherin. This interaction is vital for the coordination of the assembly of tight junctions (TJs) and adherens junctions (AJs). Dynamic turnover (endocytic recycling) of cell-to-cell AJs and TJs is essential for epithelial morphogenesis during normal development and differentiation. The endocytic recycling of Occludin and cluadin proteins is part of an ongoing process of restructuring and maintaining cell junctions, especially at TJs. JRAB and Rab13 have also been implicated in the carcinoma metastasis event of epithelial cell scattering. This event shows Rab 13 and JRAB colocalizing with F-Actin in lamellipodial structures prior to cell scattering.

REFERENCES

1. Terai, T., Nishimura, N., Kanda, I., Yasui, N. and Sasaki, T. 2006. JRAB/MICAL-L2 is a junctional Rab 13-binding protein mediating the endocytic recycling of Occludin. Mol. Biol. Cell 17: 2465-2475.
2. Nishimura, N. and Sasaki, T. 2008. Regulation of epithelial cell adhesion and repulsion: role of endocytic recycling. J. Med. Invest. 55: 9-16.
3. Nishimura, N. and Sasaki, T. 2008. Identification and characterization of JRAB/MICAL-L2, a junctional Rab 13-binding protein. Methods Enzymol. 438: 141-153.
4. Yamamura, R., Nishimura, N., Nakatsuji, H., Arase, S. and Sasaki, T. 2008. The interaction of JRAB/MICAL-L2 with Rab 8 and Rab 13 coordinates the assembly of tight junctions and adherens junctions. Mol. Biol. Cell 19: 971-983.
5. Nakatsuji, H., Nishimura, N., Yamamura, R., Kanayama, H.O. and Sasaki, T. 2008. Involvement of actinin-4 in the recruitment of JRAB/MICAL-L2 to cell-cell junctions and the formation of functional tight junctions. Mol. Cell. Biol. 28: 3324-3335.
6. Kanda, I., Nishimura, N., Nakatsuji, H., Yamamura, R., Nakanishi, H. and Sasaki, T. 2008. Involvement of Rab 13 and JRAB/MICAL-L2 in epithelial cell scattering. Oncogene 27: 1687-1695.
7. Nishimura, N. and Sasaki, T. 2009. Rab family small G proteins in regulation of epithelial apical junctions. Front. Biosci. 14: 2115-2129.
8. Sakane, A., Honda, K. and Sasaki, T. 2010. Rab 13 regulates neurite outgrowth in PC-12 cells through its effector protein, JRAB/MICAL-L2. Mol. Cell. Biol. 30: 1077-1087.

CHROMOSOMAL LOCATION

Genetic locus: MICALL2 (human) mapping to 7p22.3.

SOURCE

JRAB (G-10) is a mouse monoclonal antibody raised against amino acids 561-664 mapping within an internal region of JRAB of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

JRAB (G-10) is recommended for detection of JRAB of 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 JRAB siRNA (h): sc-89784, JRAB shRNA Plasmid (h): sc-89784-SH and JRAB shRNA (h) Lentiviral Particles: sc-89784-V.

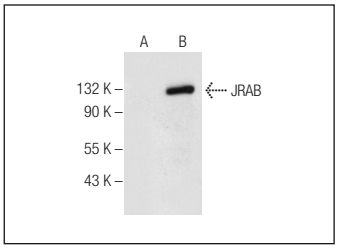
Molecular Weight of JRAB: 100 kDa.

Positive Controls: JRAB (h3): 293T Lysate: sc-177416, MCF7 whole cell lysate: sc-2206 or WI-38 whole cell lysate: sc-364260.

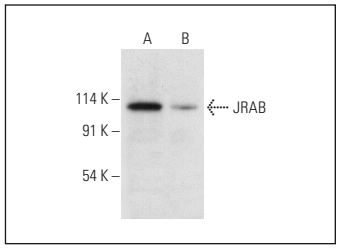
RECOMMENDED SUPPORT REAGENTS

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



JRAB (G-10): sc-376791. Western blot analysis of JRAB expression in non-transfected: sc-117752 (**A**) and human JRAB transfected: sc-177416 (**B**) 293T whole cell lysates.



JRAB (G-10): sc-376791. Western blot analysis of JRAB expression in WI-38 (**A**) and MCF7 (**B**) whole cell lysates.

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 for detailed protocols and support products.