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Sipa111 (m): 293T Lysate: sc-123556

BACKGROUND

The Rap family of small GTPases is closely related to Ras and may function as an antagonist to the Ras signaling pathway by trapping Ras effectors in an inactive complex. Similar to other guanine-binding proteins (such as the heterotrimeric G proteins), the Ras proteins cycle between an active guanosine-triphosphate (GTP) bound form and an inactive, guanosine-diphosphate (GDP) bound form. The weak intrinsic GTPase activity of Ras proteins is greatly enhanced by the action of GTPase-activating proteins (GAPs). Sip111 (signal-induced proliferation-associated 1 like 1), also known as spine-associated RapGAP (SPAR), and designated E6TP1 in human, is a Rap-specific GTPase-activating protein (RapGAP) that interacts with the guanylate kinase-like domain of post-synaptic density protein-95 (PSD-95) and forms a complex with PSD-95 and with N-methyl-D-aspartate (NMDA) receptors in the brain. In heterologous neurons, Sip111 reorganizes the Actin cytoskeleton and recruits PSD-95 to F-Actin. In hippocampal neurons, Sip111 localizes to dendritic spines and causes enlargement of spine heads, many of which adopt an irregular appearance.

REFERENCES

1. Bos, J. 1998. All in the family? New insights and questions regarding interconnectivity of Ras, Rap 1, and Ral. *EMBO J.* 17: 6776-6782.
2. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 139150. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Zwartkruis, F. and Bos, J. 1999. Ras and Rap 1: two highly related small GTPases with distinct function. *Exp. Cell Res.* 253: 157-165.
4. Tsukamoto, N., Hattori, M., Yang, H., Bos, J.L. and Minato, N. 1999. Rap 1 GTPase-activating protein SPA-1 negatively regulates cell adhesion. *J. Biol. Chem.* 274: 18463-18469.
5. Pak, D.T., Yang, S., Rudolph-Correia, S., Kim, E. and Sheng, M. 2001. Regulation of dendritic spine morphology by SPAR, a PSD-95 associated RapGAP. *Neuron* 31: 169-171.

CHROMOSOMAL LOCATION

Genetic locus: Sip111 (mouse) mapping to 12 D1.

PRODUCT

Sipa111 (m): 293T Lysate represents a lysate of mouse Sip111 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Sipa111 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Sip111 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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