SANTA CRUZ BIOTECHNOLOGY, INC.

E6TP1/Sipa1l1 (N-20): sc-20846

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). E6TP1, also known as signal-induced proliferation-associated 1 like 1 (SIPA1L1) and spine-associated RapGAP (SPAR), and designated Sipa1l1 in mouse and rat, 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-asparate (NMDA) receptors in the brain. In heterologous neurons, E6TP1/Sipa1l1 reorganizes the Actin cytoskeleton and recruits PSD-95 to F-Actin. In hippocampal neurons, E6TP1/Sipa1l1 localizes to dendritic spines and causes enlargement of spine heads, many of which adopt an irregular appearance. Transient expression of E6TP1 in HeLa cells localizes to the cortical cytoskeleton and induces rounding up of the cells.

REFERENCES

1. Bos, J. 1998. All in the family? New insights and questions regarding interconnectivity of Ras, Rap1, 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., et al. 1999. Ras and Rap1: two highly related small GTPases with distinct function. Exp. Cell Res. 253: 157-165.
4. Tsukamoto, N., et al. 1999. Rap1 GTPase-activating protein SPA-1 negatively rgulates cell adhesion. J. Biol. Chem. 274: 18463-18469.
5. Pak, D., et al. 2001. Regulation of dendritic spine morphology by SPAR, a PSD-95 associated RapGAP. Neuron 31: 169-171.

CHROMOSOMAL LOCATION

Genetic locus: SIPA1L1 (human) mapping to 14q24.2; Sipa1l1 (mouse) mapping to 12 D1.

SOURCE

E6TP1/Sipa1l1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of E6TP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20846 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

E6TP1/Sipa1l1 (N-20) is recommended for detection of E6TP1 of human origin and Sipa1l1 of mouse and rat origin by Western Blotting (starting dilution 1:200, 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 E6TP1 siRNA (h): sc-42180, Sipa1l1 siRNA (m): sc-42181, E6TP1 shRNA Plasmid (h): sc-42180-SH, Sipa1l1 shRNA Plasmid (m): sc-42181-SH, E6TP1 shRNA (h) Lentiviral Particles: sc-42180-V and Sipa1l1 shRNA (m) Lentiviral Particles: sc-42181-V.

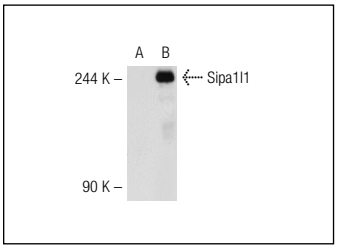
Molecular Weight of E6TP1/Sipa1l1: 220 kDa.

Positve Controls: Sipa1l1 (m): 293T Lysate: sc-123556.

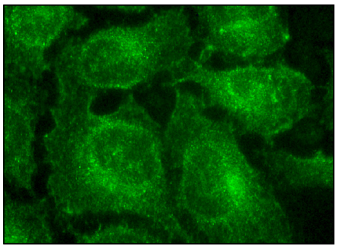
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



E6TP1/Sipa1l1 (N-20): sc-20846. Western blot analysis of Sipa1l1 expression in non-transfected: sc-117752 (**A**) and mouse Sipa1l1 transfected: sc-123556 (**B**) 293T whole cell lysates.



E6TP1/Sipa1l1 (N-20): sc-20846. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

RESEARCH USE

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

PROTOCOLS

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