

# RAPGEF6 (BA-17): sc-81919

## BACKGROUND

RAPGEF6 (Rap guanine nucleotide exchange factor 6), also known as PDZGEF2 (PDZ domain-containing guanine nucleotide exchange factor 2) or RA-GEF-2, is a guanine nucleotide exchange factor (GEF) that is expressed in a variety of tissues. Localizing to the cytoplasm and translocated to the plasma membrane upon ligand binding, RAPGEF6 contains an N-terminal Ras-GEF domain, a cyclic nucleotide monophosphate-binding domain, a PDZ (PSD-95/DlgA/ZO-1) domain, a Ras-associating (RA) domain and a Ras exchanger motif. RAPGEF6 is closely related to RAPGEF2 and both proteins exhibit GEF activity specific towards Rap 1 and Rap 2. In addition, RAPGEF6 is capable of binding to M-Ras via its RA domain. Due to alternative splicing events, two additional isoforms exist for RAPGEF6, namely PDZ-GEF2A and PDZ-GEF2B.

## REFERENCES

- Gao, X., et al. 2001. Identification and characterization of RA-GEF-2, a Rap guanine nucleotide exchange factor that serves as a downstream target of M-Ras. *J. Biol. Chem.* 276: 42219-42225.
- Kozlov, G., et al. 2002. Solution structure of the PDZ2 domain from cytosolic human phosphatase hPPT1E complexed with a peptide reveals contribution of the  $\beta$ 2- $\beta$ 3 loop to PDZ domain-ligand interactions. *J. Mol. Biol.* 320: 813-820.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610499. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Papp, R., et al. 2003. ESI-MS and FTIR studies of the interaction between the second PDZ domain of hPPT1E and target peptides. *Biochem. Cell Biol.* 81: 71-80.
- Kuiperij, H.B., et al. 2003. Characterisation of PDZ-GEFs, a family of guanine nucleotide exchange factors specific for Rap1 and Rap2. *Biochim. Biophys. Acta* 1593: 141-149.
- Chen, X., et al. 2006. Haplotypes spanning SPEC2, PDZ-GEF2 and ACSL6 genes are associated with schizophrenia. *Hum. Mol. Genet.* 15: 3329-3342.
- Kempermann, G., et al. 2006. Natural variation and genetic covariance in adult hippocampal neurogenesis. *Proc. Natl. Acad. Sci. USA* 103: 780-785.
- Kothapalli, K.S., et al. 2007. Differential cerebral cortex transcriptomes of baboon neonates consuming moderate and high docosahexaenoic acid formulas. *PLoS ONE* 2: e370.

## CHROMOSOMAL LOCATION

Genetic locus: RAPGEF6 (human) mapping to 5q31.1.

## SOURCE

RAPGEF6 (BA-17) is a mouse monoclonal antibody raised against recombinant RAPGEF6 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

RAPGEF6 (BA-17) is recommended for detection of RAPGEF6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 RAPGEF6 siRNA (h): sc-76349, RAPGEF6 shRNA Plasmid (h): sc-76349-SH and RAPGEF6 shRNA (h) Lentiviral Particles: sc-76349-V.

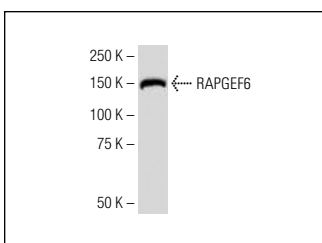
Molecular Weight of RAPGEF6: 179 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

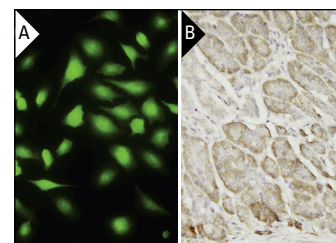
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



RAPGEF6 (BA-17): sc-81919. Western blot analysis of RAPGEF6 expression in HeLa nuclear extract.



RAPGEF6 (BA-17): sc-81919. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human pancreas tissue showing membrane and cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

- McSherry, E.A., et al. 2011. Breast cancer cell migration is regulated through junctional adhesion molecule-A-mediated activation of Rap1 GTPase. *Breast Cancer Res.* 13: R31.

## STORAGE

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

## RESEARCH USE

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