

## ARHGEF9 (3): sc-136393



The Power to Question

## BACKGROUND

ARHGEF9 (Rho guanine nucleotide exchange factor 9), also known as PEM-2 homolog or Collybistin, is a 516 amino acid cytoplasmic protein. ARHGEF9 acts as a guanine nucleotide exchange factor for Cdc42 and promotes formation of Gephyrin clusters by directly interacting with Gephyrin. ARHGEF9 contains one DH (DBL-homology) domain, one PH domain and one SH3 domain. Defects in the gene encoding ARHGEF9 are believed to be a cause for startle disease with epilepsy (STHEE), also known as hyperekplexia with epilepsy. This disease is a heterogenous neurological disorder characterized by muscular rigidity, particularly in the neonatal period, and a startle response to auditory or tactile stimuli.

## REFERENCES

1. Ishikawa, K., et al. 1997. Prediction of the coding sequences of unidentified human genes. VIII. 78 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 4: 307-313.
2. Reid, T., et al. 1999. Identification and characterization of hPEM-2, a guanine nucleotide exchange factor specific for Cdc42. J. Biol. Chem. 274: 33587-33593.
3. Grosskreutz, Y., et al. 2001. Identification of a gephyrin-binding motif in the GDP/GTP exchange factor collybistin. Biol. Chem. 382: 1455-1462.
4. Harvey, K., et al. 2004. The GDP-GTP exchange factor collybistin: an essential determinant of neuronal gephyrin clustering. J. Neurosci. 24: 5816-5826.
5. Yamaguchi, K., et al. 2008. Smurf1 directly targets hPEM-2, a GEF for Cdc42, via a novel combination of protein interaction modules in the ubiquitin-proteasome pathway. Biol. Chem. 389: 405-413.
6. Marco, E.J., et al. 2008. ARHGEF9 disruption in a female patient is associated with X linked mental retardation and sensory hyperarousal. J. Med. Genet. 45: 100-105.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 300429. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: ARHGEF9 (human) mapping to Xq11.1; Arhgef9 (mouse) mapping to X C3.

## SOURCE

ARHGEF9 (3) is a mouse monoclonal antibody raised against amino acids 18-131 of ARHGEF9 of rat origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ARHGEF9 (3) is available conjugated to agarose (sc-136393 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136393 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

## APPLICATIONS

ARHGEF9 (3) is recommended for detection of ARHGEF9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ARHGEF9 siRNA (h): sc-91036, ARHGEF9 siRNA (m): sc-141229, ARHGEF9 shRNA Plasmid (h): sc-91036-SH, ARHGEF9 shRNA Plasmid (m): sc-141229-SH, ARHGEF9 shRNA (h) Lentiviral Particles: sc-91036-V and ARHGEF9 shRNA (m) Lentiviral Particles: sc-141229-V.

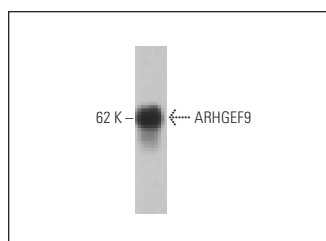
Molecular Weight of ARHGEF9: 62 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or rat cerebrum tissue extract.

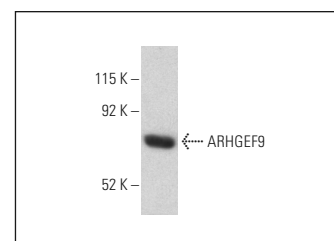
## RECOMMENDED SUPPORT REAGENTS

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).

## DATA



ARHGEF9 (3): sc-136393. Western blot analysis of ARHGEF9 expression in rat cerebrum tissue extract.



ARHGEF9 (3): sc-136393. Western blot analysis of ARHGEF9 expression in Jurkat whole cell lysate. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

## SELECT PRODUCT CITATIONS

1. Gross, G.G., et al. 2016. An E3-ligase-based method for ablating inhibitory synapses. Nat. Methods 13: 673-678.

## 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. Not for resale.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.