

# $\alpha$ -chimaerin (H-40): sc-98345

## BACKGROUND

The Rac-GAP chimaerin family member  $\alpha$ -chimaerin (also known as N-chimaerin or Rho GTPase-activating protein 2) has two splice variants:  $\alpha$ 1 and  $\alpha$ 2. The  $\alpha$ 1-chimaerin variant is a neuron-specific, diacylglycerol-binding and GTPase-activating protein for Ras-related protein Rac 1. This variant lacks the N-terminal SH2 domain that is present in the  $\alpha$ 2 variant. By inactivating Rac 1,  $\alpha$ 1-chimaerin plays a significant role in the regulation of dendritic growth during neuronal development. It is recruited to the plasma membrane by phospholipase C  $\beta$ -coupled cell surface receptors activating the downstream generation of DAG (diacylglycerol). Overexpression of  $\alpha$ 1-chimaerin results in dendritic spine retraction and the loss of dendritic branches. In the presence of reduced neuronal activity,  $\alpha$ 1-chimaerin expression is downregulated resulting in an increase in spine growth and dendritic branching.

## REFERENCES

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- Uzzau, S., Lu, R., Wang, W., Fiore, C. and Fasano, A. 2001. Purification and preliminary characterization of the zonula occludens toxin receptor from human (Caco-2) and murine (IEC6) intestinal cell lines. *FEMS Microbiol. Lett.* 194: 1-5.
- Hall, C., Michael, G.J., Cann, N., Ferrari, G., Teo, M., Jacobs, T., Monfries, C. and Lim, L. 2001.  $\alpha$ 2-chimaerin, a Cdc42/Rac1 regulator, is selectively expressed in the rat embryonic nervous system and is involved in neuritegenesis in N1E-115 neuroblastoma cells. *J. Neurosci.* 21: 5191-5202.
- Qi, R.Z., Ching, Y.P., Kung, H.F. and Wang, J.H. 2004.  $\alpha$ -chimaerin exists in a functional complex with the Cdk5 kinase in brain. *FEBS Lett.* 561: 177-180.

## CHROMOSOMAL LOCATION

Genetic locus: CHN1 (human) mapping to 2q31.1; Chn1 (mouse) mapping to 2 C3.

## SOURCE

$\alpha$ -chimaerin (H-40) is a rabbit polyclonal antibody raised against amino acids 144-183 mapping within an internal region of  $\alpha$ -chimaerin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

$\alpha$ -chimaerin (H-40) is recommended for detection of  $\alpha$ 2 isoform of  $\alpha$ -chimaerin of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with  $\alpha$ 1 isoform.

$\alpha$ -chimaerin (H-40) is also recommended for detection of  $\alpha$ 2 isoform of  $\alpha$ -chimaerin in additional species, including bovine and porcine.

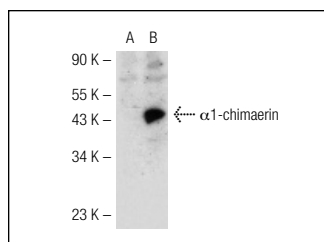
Suitable for use as control antibody for  $\alpha$ -chimaerin siRNA (h): sc-72412,  $\alpha$ -chimaerin siRNA (m): sc-72413,  $\alpha$ -chimaerin shRNA Plasmid (h): sc-72412-SH,  $\alpha$ -chimaerin shRNA Plasmid (m): sc-72413-SH,  $\alpha$ -chimaerin shRNA (h) Lentiviral Particles: sc-72412-V and  $\alpha$ -chimaerin shRNA (m) Lentiviral Particles: sc-72413-V.

Molecular Weight of  $\alpha$ -chimaerin: 38 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



$\alpha$ -chimaerin (H-40): sc-98345. Western blot analysis of  $\alpha$ 1-chimaerin expression in non-transfected: sc-110760 (A) and human  $\alpha$ 1-chimaerin transfected: sc-111146 (B) 293 whole cell lysates.

## PROTOCOLS

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