

α -chimaerin (C-18): sc-79822

BACKGROUND

The Rac-GAP chimaerin family member α -chimaerin (also known as N-chimaerin or Rho GTPase-activating protein 2) has two splice variants: α 1 and α 2. The α 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 α 2 variant. By inactivating Rac 1, α 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 β -coupled cell surface receptors activating the downstream generation of DAG (diacylglycerol). Overexpression of α 1-chimaerin results in dendritic spine retraction and the loss of dendritic branches. In the presence of reduced neuronal activity, α 1-chimaerin expression is down-regulated resulting in an increase in spine growth and dendritic branching.

REFERENCES

- Dong, J.M., et al. 1995. Promoter region of the transcriptional unit for human α 1-chimaerin, a neuron-specific GTPase-activating protein for p21^{Rac}. *Eur. J. Biochem.* 227: 636-646.
- Uzzau, S., et al. 2001. Purification and preliminary characterization of the zonula occludens toxin receptor from human (CaCo2) and murine (IEC6) intestinal cell lines. *FEMS Microbiol. Lett.* 194: 1-5.
- Hall, C., et al. 2001. α 2-chimaerin, a Cdc42/Rac1 regulator, is selectively expressed in the rat embryonic nervous system and is involved in neurogenesis in N1E-115 neuroblastoma cells. *J. Neurosci.* 21: 5191-5202.
- Qi, R.Z., et al. 2004. α -chimaerin exists in a functional complex with the Cdk5 kinase in brain. *FEBS Lett.* 561: 177-180.
- Mizuno, T., et al. 2004. Chimaerins act downstream from neurotrophins in overcoming the inhibition of neurite outgrowth produced by myelin-associated glycoprotein. *J. Neurochem.* 91: 395-403.

CHROMOSOMAL LOCATION

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

SOURCE

α -chimaerin (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of α -chimaerin of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-79822 P, (100 μ g 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

α 1-chimaerin (C-18) is recommended for detection of α 1 and α 2 isoforms of α -chimaerin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

α 1-chimaerin (C-18) is also recommended for detection of α 1 and α 2 isoforms of α -chimaerin in additional species, including equine, canine, bovine, porcine and avian.

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

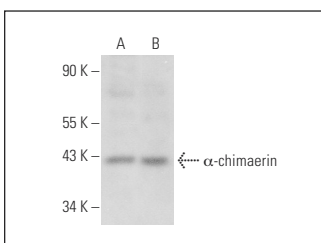
Molecular Weight of α -chimaerin: 38 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

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



α -chimaerin (C-18): sc-79822. Western blot analysis of α -chimaerin expression in MCF7 (A) and HeLa (B) whole cell lysates.

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.