

α -chimaerin (G-8): sc-365985

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 -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 p21rac. *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.

CHROMOSOMAL LOCATION

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

SOURCE

α -chimaerin (G-8) is a mouse monoclonal antibody raised against amino acids 144-183 mapping within an internal region of α -chimaerin of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α -chimaerin (G-8) is available conjugated to agarose (sc-365985 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365985 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365985 PE), fluorescein (sc-365985 FITC), Alexa Fluor[®] 488 (sc-365985 AF488), Alexa Fluor[®] 546 (sc-365985 AF546), Alexa Fluor[®] 594 (sc-365985 AF594) or Alexa Fluor[®] 647 (sc-365985 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365985 AF680) or Alexa Fluor[®] 790 (sc-365985 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

α -chimaerin (G-8) is recommended for detection of α 2 isoform of α -chimaerin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

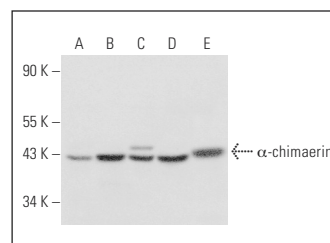
Molecular Weight of α -chimaerin: 38 kDa.

Positive Controls: α -chimaerin (h): 293 Lysate: sc-111146, HeLa whole cell lysate: sc-2200 or PC-12 whole cell lysate: sc-2250.

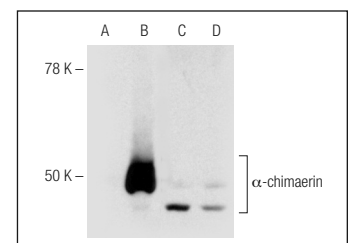
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



α -chimaerin (G-8): sc-365985. Western blot analysis of α -chimaerin expression in HeLa (A), PC-12 (B), HEK293 (C), NIH/3T3 (D) and U-251-MG (E) whole cell lysates.



α -chimaerin (G-8): sc-365985. Western blot analysis of α -chimaerin expression in non-transfected 293: sc-110760 (A), human α -chimaerin transfected 293: sc-111146 (B), HeLa (C) and PC-12 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Zhu, X., et al. 2022. S-ketamine exerts antidepressant effects by regulating Rac1 GTPase mediated synaptic plasticity in the hippocampus of stressed rats. *Cell. Mol. Neurobiol.* 43: 299-314.

STORAGE

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