

# Centaurin $\alpha$ 1 (N-19): sc-47837

## BACKGROUND

ADP-ribosylation factor (ARF) family of small GTP-binding proteins are involved in vesicular transport regulation and in controlling cytoskeletal organization and cell adhesion. These proteins are best characterized as regulators of membrane traffic. The Centaurin GTPase-activating protein family comprise a subset of ARF regulatory molecules that transduce PI 3-kinase activation into coordinated control of Arf-dependent pathways. This family includes ASAP1, ACAP1, ACAP2, AGAP1, ARAP1, ARAP2, Centaurin  $\alpha$ 1 and Centaurin  $\gamma$ 3. The Centaurin  $\alpha$ 1 protein is a high affinity PtdIns (3,4,5) P3 binding protein enriched in brain. By acting as a GTPase activating protein for ADP ribosylation factor 6 (ARF6), Centaurin  $\alpha$ 1 is able to switch off ARF6 and inhibit its ability to mediate  $\beta$ 2-adrenoceptor internalization and negatively regulate ARF6 activity by functioning as an *in vivo* PIP3 dependent ARF6 GAP.

## REFERENCES

1. Hawadle, M.A., et al. 2002. Cytohesins and centaurins control subcellular trafficking of macromolecular signaling complexes: regulation by phosphoinositides and ADP-ribosylation factors. *Biol. Res.* 35: 247-265.
2. Thacker, E., et al. 2004. The ARF6 GAP Centaurin  $\alpha$ 1 is a neuronal Actin-binding protein which also functions via GAP-independent activity to regulate the Actin cytoskeleton. *Eur. J. Cell Biol.* 83: 541-554.
3. Venkateswarlu, K., et al. 2004. Centaurin  $\alpha$ 1 is an *in vivo* phosphatidylinositol 3,4,5-trisphosphate-dependent GTPase-activating protein for ARF6 that is involved in actin cytoskeleton organization. *J. Biol. Chem.* 279: 6205-6208.
4. Venkateswarlu, K., et al. 2005. Centaurin  $\alpha$ 1 interacts directly with kinesin motor protein KIF13B. *J. Cell Sci.* 118: 2471-2484.
5. Kanamarlapudi, V. 2005. Centaurin  $\alpha$ 1 and KIF13B kinesin motor protein interaction in ARF6 signalling. *Biochem. Soc. Trans.* 33: 1279-1281.

## CHROMOSOMAL LOCATION

Genetic locus: CENTA1 (human) mapping to 7p22.3; Centa1 (mouse) mapping to 5 G2.

## SOURCE

Centaurin  $\alpha$ 1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Centaurin  $\alpha$ 1 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.

Blocking peptide available for competition studies, sc-47837 P, (100  $\mu$ 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

Centaurin  $\alpha$ 1 (N-19) is recommended for detection of Centaurin  $\alpha$ 1 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).

Centaurin  $\alpha$ 1 (N-19) is also recommended for detection of Centaurin  $\alpha$ 1 in additional species, including equine.

Suitable for use as control antibody for Centaurin  $\alpha$ 1 siRNA (h): sc-60357, Centaurin  $\alpha$ 1 siRNA (m): sc-60358, Centaurin  $\alpha$ 1 shRNA Plasmid (h): sc-60357-SH, Centaurin  $\alpha$ 1 shRNA Plasmid (m): sc-60358-SH, Centaurin  $\alpha$ 1 shRNA (h) Lentiviral Particles: sc-60357-V and Centaurin  $\alpha$ 1 shRNA (m) Lentiviral Particles: sc-60358-V.

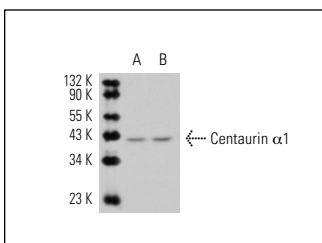
Molecular Weight of Centaurin  $\alpha$ 1: 42 kDa.

Positive Controls: Mouse brain extract: sc-2253 or rat brain extract: sc-2392.

## 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



Centaurin  $\alpha$ 1 (N-19): sc-47837. Western blot analysis of Centaurin  $\alpha$ 1 expression in rat brain (A) and mouse brain (B) tissue extracts.

## RESEARCH USE

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

## PROTOCOLS

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