

# Centaurin $\alpha$ 1 (31): sc-293022

## BACKGROUND

The 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

- 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.
- 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.
- 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.
- Venkateswarlu, K., et al. 2005. Centaurin  $\alpha$ 1 interacts directly with kinesin motor protein KIF13B. *J. Cell Sci.* 118: 2471-2484.
- Kanamarlapudi, V. 2005. Centaurin  $\alpha$ 1 and KIF13B kinesin motor protein interaction in ARF6 signalling. *Biochem. Soc. Trans.* 33: 1279-1281.
- Lawrence, J., et al. 2005. Centaurin  $\alpha$ 1, an ADP-ribosylation factor 6 GTPase-activating protein, inhibits  $\beta$ 2-adrenoceptor internalization. *Mol. Pharmacol.* 67: 1822-1828.
- Hayashi, H., et al. 2006. Centaurin  $\alpha$ 1 is a phosphatidylinositol 3-kinase-dependent activator of ERK1/2 mitogen-activated protein kinases. *J. Biol. Chem.* 281: 1332-1337.

## CHROMOSOMAL LOCATION

Genetic locus: ADAP1 (human) mapping to 7p22.3; Adap1 (mouse) mapping to 5 G2.

## SOURCE

Centaurin  $\alpha$ 1 (31) is a mouse monoclonal antibody raised against amino acids 216-336 of Centaurin  $\alpha$ 1 of rat origin.

## PRODUCT

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

## APPLICATIONS

Centaurin  $\alpha$ 1 (31) 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).

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.

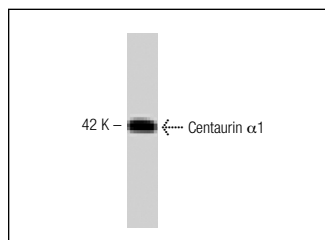
Positive Controls: rat brain extract: sc-2392 or mouse brain extract: sc-2253.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



Centaurin  $\alpha$ 1 (31): sc-293022. Western blot analysis of Centaurin  $\alpha$ 1 expression in rat cerebrum tissue extract.

## 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.