# SANTA CRUZ BIOTECHNOLOGY, INC.

# CapZ-a1 (2): sc-130309



## BACKGROUND

The F-Actin family of capping proteins includes CapZ- $\alpha$ 1, CapZ- $\alpha$ 2, CapZ- $\alpha$ 3 and CapZ- $\beta$ 3, all of which function in a calcium-dependent manner and bind to the fast growing barbed end of actin filaments, thereby blocking protein exchange at these ends. The F-Actin capping protein complex is a heterodimer consisting of  $\alpha$  and  $\beta$  subunits that caps the barbed ends of Actin filaments and nucleates the polymerization of Actin monomers, yet does not sever actin filaments. CapZ- $\alpha$ 1, also known as F-Actin-capping protein subunit  $\alpha$ 1, is a 286 amino acid subunit of the heterodimer that forms the F-Actin capping protein complex. CapZ- $\alpha$ 1 also has been shown to bind S-100  $\beta$  chain, a signaling molecule involved in the calcium-sensitive assembly of intermediate filaments and has been linked to Alzheimer's disease.

## REFERENCES

- 1. Casella, J.F. and Torres, M.A. 1994. Interaction of CapZ with actin. The NH<sub>2</sub>-terminal domains of the  $\alpha$ 1 and  $\beta$  subunits are not required for actin capping, and  $\alpha$ 1 $\beta$  and  $\alpha$ 2 $\beta$  heterodimers bind differentially to actin. J. Biol. Chem. 269: 6992-6998.
- 2. Hart, M.C., et al. 1997. Vertebrates have conserved capping protein  $\alpha$  isoforms with specific expression patterns. Cell Motil. Cytoskeleton 38: 120-132.
- Inman, K.G., et al. 2002. Solution NMR structure of S100B bound to the high-affinity target peptide TRTK-12. J. Mol. Biol. 324: 1003-1014.
- 4. Wear, M.A., et al. 2003. How capping protein binds the barbed end of the actin filament. Curr. Biol. 13: 1531-1537.

#### **CHROMOSOMAL LOCATION**

Genetic locus: CAPZA1 (human) mapping to 1p13.2; Capza1 (mouse) mapping to 3 F2.2.

## SOURCE

CapZ- $\alpha 1$  (2) is a mouse monoclonal antibody raised against recombinant CapZ- $\alpha 1$  of human origin.

# PRODUCT

Each vial contains 200  $\mu g$  lgG\_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CapZ- $\alpha$ 1 (2) is available conjugated to agarose (sc-130309 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-130309 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130309 PE), fluorescein (sc-130309 FITC), Alexa Fluor<sup>®</sup> 488 (sc-130309 AF488), Alexa Fluor<sup>®</sup> 546 (sc-130309 AF546), Alexa Fluor<sup>®</sup> 594 (sc-130309 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-130309 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-130309 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-130309 AF790), 200 µg/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

CapZ- $\alpha$ 1 (2) is recommended for detection of CapZ- $\alpha$ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CapZ- $\alpha$ 1 siRNA (h): sc-72787, CapZ- $\alpha$ 1 siRNA (m): sc-72788, CapZ- $\alpha$ 1 shRNA Plasmid (h): sc-72787-SH, CapZ- $\alpha$ 1 shRNA Plasmid (m): sc-72788-SH, CapZ- $\alpha$ 1 shRNA (h) Lentiviral Particles: sc-72787-V and CapZ- $\alpha$ 1 shRNA (m) Lentiviral Particles: sc-72788-V.

Molecular Weight of CapZ-a1: 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, CCRF-CEM cell lysate: sc-2225 or SP2/0 whole cell lysate: sc-364795.

# **RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

### DATA





CapZ- $\alpha$ 1 (2): sc-130309. Western blot analysis of CapZ- $\alpha$ 1 expression in Jurkat (A), CCRF-CEM (B), SP2/0 (C) and 3611-RF (D) whole cell lysates and rat placenta tissue extract (E).

CapZ- $\alpha$ 1 (2): sc-130309. Western blot analysis of CapZ- $\alpha$ 1 expression in HeLa (**A**) and TK-1 (**B**) whole cell lysates.

## **SELECT PRODUCT CITATIONS**

- Lee, S.K., et al. 2009. Differential expression of cell surface proteins in human bone marrow mesenchymal stem cells cultured with or without basic fibroblast growth factor containing medium. Proteomics 9: 4389-4405.
- 2. Bior, B.K. and Ballif, B.A. 2013. Dab1 stabilizes its interaction with Cin85 by suppressing Cin85 phosphorylation at serine 587. FEBS Lett. 587: 60-66.

### **STORAGE**

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