

CapZ- α (C-7): sc-376134

BACKGROUND

The F-Actin family of capping proteins includes CapZ- α 1, CapZ- α 2, CapZ- α 3 and CapZ- β 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 α and β subunits that caps the barbed ends of Actin filaments and nucleates the polymerization of Actin monomers, yet does not sever Actin filaments. CapZ- α 1, also known as F-Actin-capping protein subunit α -1, is a 286 amino acid subunit of the heterodimer that forms the F-Actin capping protein complex. CapZ- α 1 also has been shown to bind S-100 β chain, a signaling molecule involved in the calcium-sensitive assembly of intermediate filaments that has been linked to Alzheimer's disease.

REFERENCES

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- Hart, M.C., et al. 1997. Vertebrates have conserved capping protein α 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.
- Wear, M.A., et al. 2003. How capping protein binds the barbed end of the Actin filament. *Curr. Biol.* 13: 1531-1537.
- Hutchings, N.J., et al. 2003. Linking the T cell surface protein CD2 to the Actin-capping protein CapZ via CMS and CIN85. *J. Biol. Chem.* 278: 22396-22403.
- Huang, S., et al. 2003. *Arabidopsis* capping protein (AtCP) is a heterodimer that regulates assembly at the barbed ends of Actin filaments. *J. Biol. Chem.* 278: 44832-44842.
- Pyle, W.G. 2004. Searching for the missing link: a role for the Actin capping protein in heart failure. *Can. J. Cardiol.* 20: 1429-1432.
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CHROMOSOMAL LOCATION

Genetic locus: CAPZA1 (human) mapping to 1p13.2, CAPZA2 (human) mapping to 7q31.2; Capza1 (mouse) mapping to 3 F2.2, Capza2 (mouse) mapping to 6 A2.

SOURCE

CapZ- α (C-7) is a mouse monoclonal antibody raised against amino acids 1-108 of CapZ- α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CapZ- α (C-7) is recommended for detection of CapZ- α 1 and CapZ- α 2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

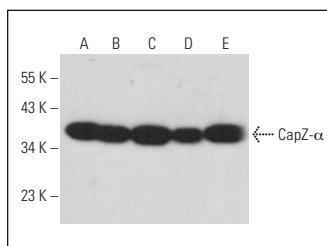
Molecular Weight of CapZ- α : 36 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

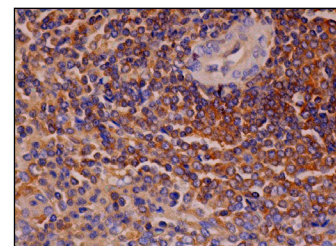
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CapZ- α (C-7): sc-376134. Western blot analysis of CapZ- α expression in HeLa (A), Jurkat (B), CCRF-CEM (C), MOLT-4 (D) and TK-1 (E) whole cell lysates.



CapZ- α (C-7): sc-376134. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of urothelial cells and cells in red pulp.

SELECT PRODUCT CITATIONS

- Toska, E., et al. 2012. Repression of transcription by WT1-BASP1 requires the myristoylation of BASP1 and the PIP2-dependent recruitment of histone deacetylase. *Cell Rep.* 2: 462-469.

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.