

CAPS-1 (G-12): sc-377279

BACKGROUND

Calcium-dependent secretion activators (CAPS-1 and CAPS-2) are calcium-binding proteins that direct neurotransmitter and neuropeptide-filled vesicles to the cell membrane for secretory granule exocytosis. Both CAPS-1 and CAPS-2 are expressed primarily in the brain where they regulate the secretion of various substances. The CAPS proteins contain a PH domain that is essential for regulation of exocytosis, as well as regulation of phospholipid binding. Through their regulation of neurotrophin release from granule cells, CAPS proteins help to regulate cell fate during neuronal development. CAPS-1 is thought to regulate catecholamine release from neuronal cells, while CAPS-2 is thought to regulate release of both brain-derived neurotrophic factor (BDNF) and neurotrophin-3 (NT-3) from granule cells. Defects in the genes encoding CAPS-1 and CAPS-2 are implicated in impaired cerebral development and autism.

REFERENCES

1. Cisternas, F.A., et al. 2003. Cloning and characterization of human CADPS and CADPS2, new members of the Ca²⁺-dependent activator for secretion protein family. *Genomics* 81: 279-291.
2. Speidel, D., et al. 2003. A family of Ca²⁺-dependent activator proteins for secretion: comparative analysis of structure, expression, localization, and function. *J. Biol. Chem.* 278: 52802-52809.
3. Grishanin, R.N., et al. 2004. CAPS acts at a pre-fusion step in dense-core vesicle exocytosis as a PIP2 binding protein. *Neuron* 43: 551-562.
4. Speidel, D., et al. 2005. CAPS-1 regulates catecholamine loading of large dense-core vesicles. *Neuron* 46: 75-88.

CHROMOSOMAL LOCATION

Genetic locus: CADPS (human) mapping to 3p14.2; Cadps (mouse) mapping to 14 A1.

SOURCE

CAPS-1 (G-12) is a mouse monoclonal antibody raised against amino acids 1001-1060 mapping within an internal region of CAPS-1 of human origin.

PRODUCT

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

CAPS-1 (G-12) is available conjugated to agarose (sc-377279 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377279 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377279 PE), fluorescein (sc-377279 FITC), Alexa Fluor® 488 (sc-377279 AF488), Alexa Fluor® 546 (sc-377279 AF546), Alexa Fluor® 594 (sc-377279 AF594) or Alexa Fluor® 647 (sc-377279 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377279 AF680) or Alexa Fluor® 790 (sc-377279 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

CAPS-1 (G-12) is recommended for detection of CAPS-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 CAPS-1 siRNA (h): sc-62076, CAPS-1 siRNA (m): sc-62077, CAPS-1 shRNA Plasmid (h): sc-62076-SH, CAPS-1 shRNA Plasmid (m): sc-62077-SH, CAPS-1 shRNA (h) Lentiviral Particles: sc-62076-V and CAPS-1 shRNA (m) Lentiviral Particles: sc-62077-V.

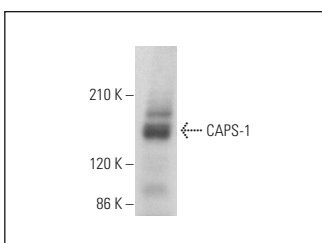
Molecular Weight of CAPS-1: 153 kDa.

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

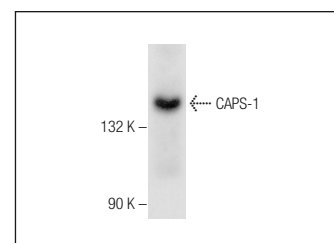
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



CAPS-1 (G-12): sc-377279. Western blot analysis of CAPS-1 expression in mouse brain tissue extract.



CAPS-1 (G-12): sc-377279. Western blot analysis of CAPS-1 expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

1. Zhou, H., et al. 2019. Structural and functional analysis of the CAPS SNARE-binding domain required for the SNARE complex formation and exocytosis. *Cell Rep.* 26: 3347-3359.e6.
2. Weng, S., et al. 2020. CAPS1 suppresses tumorigenesis in cholangiocarcinoma. *Dig. Dis. Sci.* 65: 1053-1063.

RESEARCH USE

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

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