

CAPS-1 (4): sc-136402

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

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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.
5. Sadakata, T., et al. 2006. Differential distributions of the Ca²⁺-dependent activator protein for secretion family proteins (CAPS-2 and CAPS-1) in the mouse brain. *J. Comp. Neurol.* 495: 735-753.
6. Sadakata, T. and Furuichi, T. 2006. Identification and mRNA expression of Ogdh, QP-C, and two predicted genes in the postnatal mouse brain. *Neurosci. Lett.* 405: 217-222.
7. Sadakata, T., et al. 2007. Tissue distribution of Ca²⁺-dependent activator protein for secretion family members CAPS-1 and CAPS-2 in mice. *J. Histochem. Cytochem.* 55: 301-311.
8. Sadakata, T., et al. 2007. Impaired cerebellar development and function in mice lacking CAPS-2, a protein involved in neurotrophin release. *J. Neurosci.* 27: 2472-2482.
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CHROMOSOMAL LOCATION

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

SOURCE

CAPS-1 (4) is a mouse monoclonal antibody raised against amino acids 237-426 of CAPS-1 of rat 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.

APPLICATIONS

CAPS-1 (4) is recommended for detection of CAPS-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

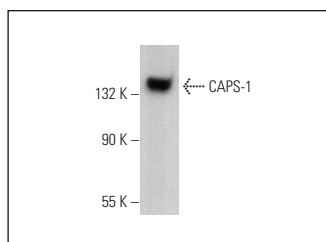
Molecular Weight of CAPS-1: 145 kDa.

Positive Controls: rat brain extract: sc-2392 or rat cerebellum extract: sc-2398.

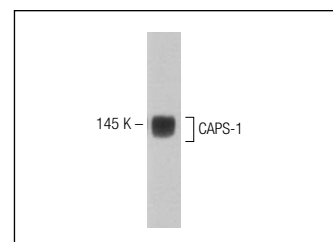
RECOMMENDED SUPPORT REAGENTS

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, 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).

DATA



CAPS-1 (4): sc-136402. Western blot analysis of CAPS-1 expression in rat cerebellum tissue extract.



CAPS-1 (4): sc-136402. Western blot analysis of CAPS-1 expression in rat brain 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 for detailed protocols and support products.