SANTA CRUZ BIOTECHNOLOGY, INC.

copine 4 (D-13): sc-102457

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The Power to Question

BACKGROUND

Copine 4, also known as CPNE4, CPN4 or COPN4, is a 557 amino acid member of the copine family of evolutionarily conserved, soluble, calcium-dependent, membrane-binding proteins. Members of the copine family are involved in signal transduction and membrane trafficking. *Arabidopsis thaliana* mutants lacking copine proteins exhibit reduced cell number and smaller cell size, effects which may be due to a defect in vesicle fusion or transport. Copine 4 contains two N-terminal C2 domains and one C-terminal VWFA (von Willebrand factor A) domain, which is also referred to as the A domain or the core domain. As is characteristic of the copine family, copine 4 functions in membrane trafficking and is capable of binding phospholipids in a calcium-dependent manner. There are two isoforms of copine 4 that exist as a result of alternative splicing events.

REFERENCES

1. Creutz, C.E., et al. 1998. The copines, a novel class of C2 domain-containing, calcium-dependent, phospholipid-binding proteins conserved from Paramecium to humans. J. Biol. Chem. 273: 1393-1402.
2. Caudell, E.G., et al. 2000. Characterization of human copine III as a phosphoprotein with associated kinase activity. Biochemistry 39: 13034-13043.
3. Tomsig, J.L., et al. 2000. Biochemical characterization of copine: a ubiquitous Ca^{2+}-dependent, phospholipid-binding protein. Biochemistry 39: 16163-16175.
4. Tomsig, J.L., et al. 2002. Copines: a ubiquitous family of Ca^{2+}-dependent phospholipid-binding proteins. Cell. Mol. Life Sci. 59: 1467-1477.
5. Church, D.L., et al. 2003. The promotion of gonadal cell divisions by the *Caenorhabditis elegans* TRPM cation channel GON-2 is antagonized by GEM-4 copine. Genetics 165: 563-574.
6. Tomsig, J.L., et al. 2003. Identification of targets for calcium signaling through the copine family of proteins. Characterization of a coiled-coil copine-binding motif. J. Biol. Chem. 278: 10048-10054.
7. Cowland, J.B., et al. 2003. Tissue expression of copines and isolation of copines I and III from the cytosol of human neutrophils. J. Leukoc. Biol. 74: 379-388.
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CHROMOSOMAL LOCATION

Genetic locus: CPNE4 (human) mapping to 3q22.1; Cpne4 (mouse) mapping to 9 F1.

SOURCE

copine 4 (D-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of copine 4 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-102457 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

copine 4 (D-13) is recommended for detection of copine 4 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)], 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); non cross-reactive with other members of copine family.

copine 4 (D-13) is also recommended for detection of copine 4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for copine 4 siRNA (h): sc-78305, copine 4 siRNA (m): sc-142505, copine 4 shRNA Plasmid (h): sc-78305-SH, copine 4 shRNA Plasmid (m): sc-142505-SH, copine 4 shRNA (h) Lentiviral Particles: sc-78305-V and copine 4 shRNA (m) Lentiviral Particles: sc-142505-V.

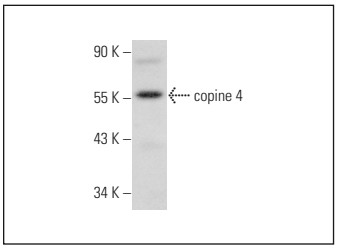
Molecular Weight of copine 4: 62 kDa.

Positive Controls: Daudi cell lysate: sc-2415.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), 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). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



copine 4 (D-13): sc-102457. Western blot analysis of copine 4 expression in Daudi whole cell lysate.

RESEARCH USE

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