SANTA CRUZ BIOTECHNOLOGY, INC.

copine 1/3 (A-7): sc-393050

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The copine family is composed of evolutionarily conserved, calcium-dependent membrane-binding proteins. Members of the copine family are involved in signal transduction and membrane trafficking, and are capable of binding phospholipids in a calcium-dependent manner. Copine 1, also known as CPNE1, CPN1 or COPN1, is ubiquitously expressed and 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. Via its VWFA domain, copine 1 directly interacts with the ubiquitin-conjugating enzyme UBC12 and may play a role in the regulation of TNFα-signaling. Copine 2, also known as COPN2 or CPNE2, contains two C2 domains and one C-terminal VWFA domain. Copine 3, also known as CPNE3, CPN3 or COPN3, is ubiquitously expressed and contains two N-terminal C2 domains and one C-terminal VWFA domain. Differing from other members of the copine family, copine 3 may possess some intrinsic kinase activity.

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. Tomsig, J.L. and Creutz, C.E. 2000. Biochemical characterization of copine: a ubiquitous Ca^{2+}-dependent, phospholipid-binding protein. Biochemistry 39: 16163-16175.
3. Jambunathan, N., et al. 2001. A humidity-sensitive *Arabidopsis* copine mutant exhibits precocious cell death and increased disease resistance. Plant Cell 13: 2225-2240.
4. 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.
5. 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.
6. Tomsig, J.L., et al. 2004. Calcium-dependent regulation of tumour necrosis factor-α receptor signalling by copine. Biochem. J. 378: 1089-1094.
7. Damer, C.K., et al. 2005. Copine A, a calcium-dependent membrane-binding protein, transiently localizes to the plasma membrane and intracellular vacuoles in *Dictyostelium*. BMC Cell Biol. 6: 46.
8. Liu, J., et al. 2005. Transgenic expression of the von Willebrand A domain of the BONZAI 1/copine 1 protein triggers a lesion-mimic phenotype in *Arabidopsis*. Planta 221: 85-94.

CHROMOSOMAL LOCATION

Genetic locus: CPNE1 (human) mapping to 20q11.22, CPNE3 (human) mapping to 8q21.3; Cpne1 (mouse) mapping to 2 H1, Cpne3 (mouse) mapping to 4 A3.

SOURCE

copine 1/3 (A-7) is a mouse monoclonal antibody raised against amino acids 266-346 mapping within an internal region of copine I of human origin.

PRODUCT

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

APPLICATIONS

copine 1/3 (A-7) is recommended for detection of copine 1 and copine 3 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), 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); may cross-react with copine 2.

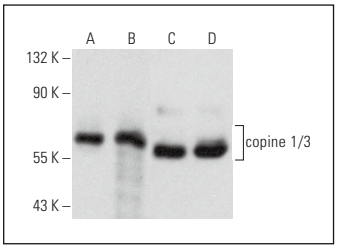
Molecular Weight of copine 1/3: 60 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, U-937 cell lysate: sc-2239 or 3T3-L1 cell lysate: sc-2243.

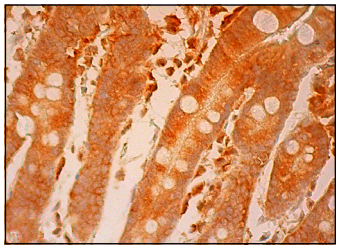
RECOMMENDED SUPPORT REAGENTS

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

DATA



copine 1/3 (A-7): sc-393050. Western blot analysis of copine 1/3 expression in SK-BR-3 (**A**), U-937 (**B**), 3T3-L1 (**C**) and KNRK (**D**) whole cell lysates.



copine 1/3 (A-7): sc-393050. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

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.