

CANT1 (14.9): sc-100662

BACKGROUND

CANT1 (calcium activated nucleotidase 1), also known as SHAPY or SCAN-1, is a single-pass type II membrane protein that is expressed throughout the body. Localized to the endoplasmic reticulum (ER) and the Golgi apparatus, CANT1 binds calcium as a cofactor and functions as a calcium-dependent nucleotidase, catalyzing the conversion of a nucleoside diphosphate to a nucleotide and a free phosphate. Although CANT1 has activity toward triphosphates such as UTP and GTP, its enzymatic activity is strongest when UDP and GDP are its substrates. CANT1 functions at an optimal pH of 6.8 and the reactions that it catalyzes are thought to be involved in quality control events in the ER. Two isoforms of CANT1 are expressed due to alternative splicing events.

REFERENCES

1. Failer, B.U., Braun, N. and Zimmermann, H. 2002. Cloning, expression, and functional characterization of a Ca²⁺-dependent endoplasmic reticulum nucleoside diphosphatase. *J. Biol. Chem.* 277: 36978-36986.
2. Smith, T.M., Hicks-Berger, C.A., Kim, S. and Kirley, T.L. 2002. Cloning, expression, and characterization of a soluble calcium-activated nucleotidase, a human enzyme belonging to a new family of extracellular nucleotidases. *Arch. Biochem. Biophys.* 406: 105-115.
3. Matsuda, A., Suzuki, Y., Honda, G., Muramatsu, S., Matsuzaki, O., Nagano, Y., Doi, T., Shimotohno, K., Harada, T., Nishida, E., Hayashi, H. and Sugano, S. 2003. Large-scale identification and characterization of human genes that activate NFκB and MAPK signaling pathways. *Oncogene* 22: 3307-3318.
4. Murphy, D.M., Ivanenkov, V.V. and Kirley, T.L. 2003. Bacterial expression and characterization of a novel, soluble, calcium-binding, and calcium-activated human nucleotidase. *Biochemistry* 42: 2412-2421.
5. Yang, M. and Kirley, T.L. 2004. Site-directed mutagenesis of human soluble calcium-activated nucleotidase 1 (hSCAN-1): identification of residues essential for enzyme activity and the Ca²⁺-induced conformational change. *Biochemistry* 43: 9185-9194.

CHROMOSOMAL LOCATION

Genetic locus: CANT1 (human) mapping to 17q25.3.

SOURCE

CANT1 (14.9) is a mouse monoclonal antibody raised against recombinant CANT1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

CANT1 (14.9) is recommended for detection of CANT1 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CANT1 siRNA (h): sc-94075, CANT1 shRNA Plasmid (h): sc-94075-SH and CANT1 shRNA (h) Lentiviral Particles: sc-94075-V.

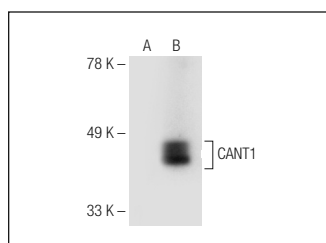
Molecular Weight of CANT1 isoform 1/2: 45/28 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or CANT1 (h): 293T Lysate: sc-117116.

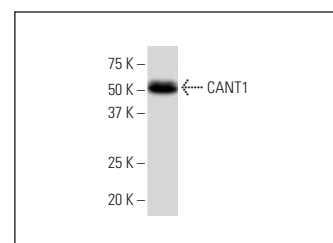
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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).

DATA



CANT1 (14.9): sc-100662. Western blot analysis of CANT1 expression in non-transfected: sc-117752 (A) and human CANT1 transfected: sc-117116 (B) 293T whole cell lysates.



CANT1 (14.9): sc-100662. Western blot analysis of CANT1 expression in A-431 whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.