SANTA CRUZ BIOTECHNOLOGY, INC.

CAT-1 (C-12): sc-33087

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cationic amino acid transporter (CAT) family of proteins are part of a larger superfamily, the amino acid-polyamine-organocation (APC) superfamily. High-affinity cationic amino acid transporter-1 (CAT-1), also designated ecotropic retroviral leukemia receptor homolog, ATRC1 or REC1L, is a ubiquitously expressed integral membrane protein. In non-hepatic tissues, CAT-1 acts as a high-affinity, low capacity permease that is important in cationic amino acid transport. CAT-1 is also a potential ecotropic retroviral leukemia receptor. SLC7A1, the gene encoding for the CAT-1 protein, maps to chromosome 13q12.3.

REFERENCES

1. Yoshimoto, T., et al. 1991. Molecular cloning and characterization of a novel human gene homologous to the murine ecotropic retroviral receptor. Virology 185: 10-17.
2. Albritton, L.M., et al. 1992. The human cationic amino acid transporter (ATRC1): physical and genetic mapping to 13q12-q14. Genomics 12: 430-434.
3. Kamath, S.G., et al. 1999. Identification of three cationic amino acid transporters in placental trophoblast: cloning, expression, and characterization of hCAT-1. J. Membr. Biol. 171: 55-62.
4. Zani, B.G., et al. 2005. Transport of extracellular l-arginine via cationic amino acid transporter is required during *in vivo* endothelial nitric oxide production. Am. J. Physiol. Heart Circ. Physiol. 289: H1381-H1390.
5. Li, C., et al. 2005. Interaction of the endothelial nitric oxide synthase with the CAT-1 arginine transporter enhances NO release by a mechanism not involving arginine transport. Biochem. J. 386: 567-574.

CHROMOSOMAL LOCATION

Genetic locus: SLC7A1 (human) mapping to 13q12.3; Slc7a1 (mouse) mapping to 5 G3.

SOURCE

CAT-1 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CAT-1 of human origin.

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-33087 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

CAT-1 (C-12) is recommended for detection of Cationic Amino acid Transporter-1 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

CAT-1 (C-12) is also recommended for detection of Cationic Amino acid Transporter-1 in additional species, including equine and porcine.

Suitable for use as control antibody for CAT-1 siRNA (h): sc-44923, CAT-1 siRNA (m): sc-44924, CAT-1 shRNA Plasmid (h): sc-44923-SH, CAT-1 shRNA Plasmid (m): sc-44924-SH, CAT-1 shRNA (h) Lentiviral Particles: sc-44923-V and CAT-1 shRNA (m) Lentiviral Particles: sc-44924-V.

Molecular Weight of CAT-1: 70 kDa.

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) 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.

SELECT PRODUCT CITATIONS

1. Li, J., et al. 2009. Coordinated regulation of dimethylarginine dimethylaminohydrolase-1 and cationic amino acid transporter-1 by farnesoid X receptor in mouse liver and kidney and its implication in the control of blood levels of asymmetric dimethylarginine. J. Pharmacol. Exp. Ther. 331: 234-243.
2. North, M.L., et al. 2009. Functionally important role for arginase 1 in the airways hyperresponsiveness of asthma. Am. J. Physiol. Lung Cell. Mol. Physiol. 296: L911-L20.

PROTOCOLS

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