

CAT-1 (2B9): sc-293226

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

- 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.
- Albritton, L.M., et al. 1992. The human cationic amino acid transporter (ATRC1): physical and genetic mapping to 13q12-q14. *Genomics* 12: 430-434.
- 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.
- 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.
- 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.
- SWISS-PROT/TrEMBL (P30825). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: SLC7A1 (human) mapping to 13q12.3.

SOURCE

CAT-1 (2B9) is a mouse monoclonal antibody raised against amino acids 431-492 of CAT-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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.

PROTOCOLS

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

APPLICATIONS

CAT-1 (2B9) is recommended for detection of CAT-1 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 CAT-1 siRNA (h): sc-44923, CAT-1 shRNA Plasmid (h): sc-44923-SH and CAT-1 shRNA (h) Lentiviral Particles: sc-44923-V.

Molecular Weight of CAT-1: 70 kDa.

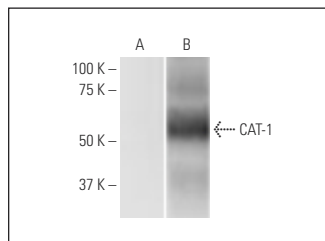
Positive Controls: CAT-1 transfected 293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

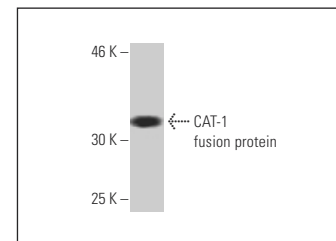
To ensure optimal results, the following support reagents are recommended:

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).

DATA



CAT-1 (2B9): sc-293226. Western blot analysis of CAT-1 expression in non-transfected (A) and CAT-1 transfected (B) 293T whole cell lysates.



CAT-1 (2B9): sc-293226. Western blot analysis of human recombinant CAT-1 fusion protein.

SELECT PRODUCT CITATIONS

- Skóra, B., et al. 2023. Suppression of sonic hedgehog pathway-based proliferation in glioblastoma cells by small-size silver nanoparticles *in vitro*. *Arch. Toxicol.* 97: 2385-2398.

RESEARCH USE

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