

# CAT-3 (T-14): sc-161433

## BACKGROUND

The cationic amino acid transporter (CAT) family of proteins are part of a larger superfamily, the amino acid-polyamine-organocation (APC) superfamily. CAT-3 (cationic amino acid transporter 3), also known as SLC7A3 (solute carrier family 7 (cationic amino acid transporter, y+ system), member 3) or ATRC3, is a 619 amino acid multi-pass membrane protein that belongs to the APC superfamily and CAT family. CAT-3 regulates the uptake of ornithine, lysine and arginine, and is highly expressed in testis, thymus and uterus. CAT-3 is also found at lower levels in brain, salivary gland, mammary gland and fetal spleen, and is subject to post-translational N-glycosylation. The gene encoding CAT-3 maps to human chromosome Xq13.1.

## REFERENCES

- Deves, R., Angelo, S. and Rojas, A.M. 1998. System y+L: the broad scope and cation modulated amino acid transporter. *Exp. Physiol.* 83: 211-220.
- Vekony, N., Wolf, S., Boissel, J.P., Gnauert, K. and Closs, E.I. 2001. Human cationic amino acid transporter hCAT-3 is preferentially expressed in peripheral tissues. *Biochemistry* 40: 12387-12394.
- Gilles, W., Vulcu, S.D., Liewald, J.F., Habermeier, A., Vekony, N., Closs, E.I., Rupp, J. and Nawrath, H. 2005. Monovalent cation conductance in *Xenopus laevis* oocytes expressing hCAT-3. *Biochim. Biophys. Acta* 1668: 234-239.
- Rotmann, A., Vekony, N., Gassner, D., Niegisch, G., Strand, D., Martine, U. and Closs, E.I. 2006. Activation of classical protein kinase C reduces the expression of human cationic amino acid transporter 3 (hCAT-3) in the plasma membrane. *Biochem. J.* 395: 117-123.
- Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 300443. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Bröer, S. 2008. Amino acid transport across mammalian intestinal and renal epithelia. *Physiol. Rev.* 88: 249-286.

## CHROMOSOMAL LOCATION

Genetic locus: Slc7a3 (mouse) mapping to X C3.

## SOURCE

CAT-3 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CAT-3 of mouse 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-161433 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.

## APPLICATIONS

CAT-3 (T-14) is recommended for detection of CAT-3 of mouse and rat 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 CAT family members.

Suitable for use as control antibody for CAT-3 siRNA (m): sc-142026, CAT-3 shRNA Plasmid (m): sc-142026-SH and CAT-3 shRNA (m) Lentiviral Particles: sc-142026-V.

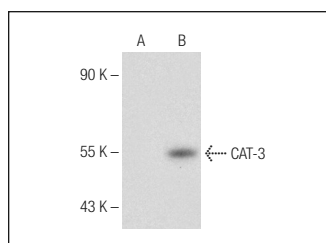
Molecular Weight of CAT-3: 67 kDa.

Positive Controls: CAT-3 (h4): 293T Lysate: sc-158348.

## 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



CAT-3 (T-14): sc-161433. Western blot analysis of CAT-3 expression in non-transfected: sc-117752 (A) and human CAT-3 transfected: sc-158348 (B) 293T whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.