

CAT-4 (P-16): sc-86353

BACKGROUND

As a member of the APC family of transporters, CAT-4 (cationic amino acid transporter 4), also known as solute carrier family 7 member 4, is a 635 amino acid multi-pass membrane protein that is involved in the transport of the cationic amino acids, Arginine, Lysine and Ornithine. This uptake of cationic amino acids is designated "system Y⁺", which is pH insensitive, stereoselective, Na⁺ independent and inhibitable by neural amino acids in the presence of Na⁺. CAT-4 displays high sequence similarity with CAT-1 and CAT-2 and is expressed in testis, placenta and brain. A microdeletion of the chromosomal band near the location of the gene encoding CAT-4 causes velocardiofacial syndrome (also known as DiGeorge syndrome), a disease that is characterized by several clinical findings, including conotruncal cardiac defects, prominent tubular nose and a hypernasal voice. This suggests that CAT-4 may play a role in determining the velocardiofacial phenotype.

REFERENCES

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3. Wolf, S., et al. 2002. Expression of solute carrier 7A4 (SLC7A4) in the plasma membrane is not sufficient to mediate amino acid transport activity. *Biochem. J.* 364: 767-775.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 192430. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Rotoli, B.M., et al. 2005. The transport of cationic amino acids in human airway cells: expression of system y⁺L activity and transepithelial delivery of NOS inhibitors. *FASEB J.* 19: 810-812.
6. Closs, E.J., et al. 2006. Structure and function of cationic amino acid transporters (CATs). *J. Membr. Biol.* 213: 67-77.
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CHROMOSOMAL LOCATION

Genetic locus: SLC7A4 (human) mapping to 22q11.21; Slc7a4 (mouse) mapping to 16 A3.

SOURCE

CAT-4 (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CAT-4 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-86353 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CAT-4 (P-16) is recommended for detection of CAT-4 of mouse, rat and 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)], 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 family members CAT-1 or CAT-2.

CAT-4 (P-16) is also recommended for detection of CAT-4 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for CAT-4 siRNA (h): sc-72804, CAT-4 siRNA (m): sc-142027, CAT-4 shRNA Plasmid (h): sc-72804-SH, CAT-4 shRNA Plasmid (m): sc-142027-SH, CAT-4 shRNA (h) Lentiviral Particles: sc-72804-V and CAT-4 shRNA (m) Lentiviral Particles: sc-142027-V.

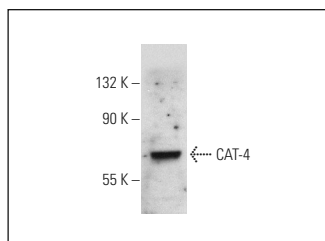
Molecular Weight of CAT-4: 68 kDa.

Positive Controls: LADMAC whole cell lysate: sc-364189.

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-4 (P-16): sc-86353. Western blot analysis of CAT-4 expression in LADMAC whole cell lysate.

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.

PROTOCOLS

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