

CAT-2 (S-13): sc-87038

BACKGROUND

As a member of the APC family of transporters, CAT-2 (low affinity cationic amino acid transporter 2), also known as solute carrier family 7 member 2, is a 658 amino acid multi-pass membrane protein that is involved in the transport of cationic amino acids, such as arginine, lysine and ornithine. Since intracellular arginine is metabolized by nitric oxide (NO) synthase and arginase pathways, CAT-2 is specifically recognized for its role in the regulation of L-arginine. The NO synthase pathway requires extracellular arginine uptake to allow for sustained NO production by NOS₂, and CAT-2 has been found to be induced in many NOS₂-positive cell types. CAT-2 is also thought to play a role in the immune response by limiting arginase activity in important effector cells, such as macrophages and fibroblasts. There are two named isoforms of CAT-2, designated CAT-2A and CAT-2B, which are produced as a result of alternative splicing events.

REFERENCES

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- Lauteala, T., et al. 1997. Human cationic amino acid transporter gene hCAT-2 is assigned to 8p22 but is not the causative gene in lysinuric protein intolerance. *Hum. Genet.* 100: 80-83.
- Nawrath, H., et al. 2000. Voltage dependence of L-arginine transport by hCAT-2A and hCAT-2B expressed in oocytes from *Xenopus laevis*. *Am. J. Physiol., Cell Physiol.* 279: C1336-C1344.
- Nicholson, B., et al. 2001. Sustained nitric oxide production in macrophages requires the arginine transporter CAT-2. *J. Biol. Chem.* 276: 15881-15885.
- Rotmann, A., et al. 2004. Intracellular accumulation of L-Arg, kinetics of transport, and potassium leak conductance in oocytes from *Xenopus laevis* expressing hCAT-1, hCAT-2A, and hCAT-2B. *Biochim. Biophys. Acta* 1660: 138-143.

CHROMOSOMAL LOCATION

Genetic locus: SLC7A2 (human) mapping to 8p22.

SOURCE

CAT-2 (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of CAT-2 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-87038 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CAT-2 (S-13) is recommended for detection of CAT-2 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)], 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).

Suitable for use as control antibody for CAT-2 siRNA (h): sc-77441, CAT-2 shRNA Plasmid (h): sc-77441-SH and CAT-2 shRNA (h) Lentiviral Particles: sc-77441-V.

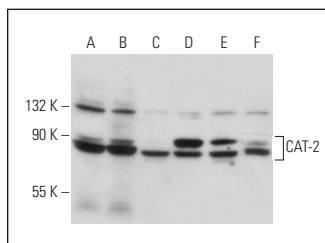
Molecular Weight of CAT-2: 72 kDa.

Positive Controls: ES-2 cell lysate: sc-24674, Hep G2 cell lysate: sc-2227 or A-673 cell lysate: sc-2414.

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-2 (S-13): sc-87038. Western blot analysis of CAT-2 expression in ES-2 (A), HL60 (B), Hep G2 (C), OV-90 (D), JAR (E) and A-673 (F) whole cell lysates.

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.