SANTA CRUZ BIOTECHNOLOGY, INC.

CA X (H-50): sc-67332

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metalloenzymes responsible for catalyzing the reversible hydration of carbon dioxide. CAs show extensive diversity in their distribution and subcellular localization. They are involved in a variety of biological processes, including calcification, bone resorption, respiration, acid-base balance and the formation of aqueous humor, saliva, gastric juice and cerebrospinal fluid. CA X, also referred to as carbonic anhydrase-related protein X (CA-RP X) or cerebral protein 15, is a member of the carbonic anhydrase family that lacks two of the three Zn-binding motifs essential for carbonic anhydrase activity. For this reason, CA X does not exhibit catalytic activity. It is expressed primarily in brain and kidney and may play a role in brain development.

REFERENCES

1. Lovejoy, D.A., et al. 1999. Evolutionarily conserved, "acatalytic" carbonic anhydrase-related protein XI contains a sequence motif present in the neuropeptide sauvagine: the human CA-RP XI gene (CA11) is embedded between the secretor gene cluster and the DBP gene at 19q13.3. Genomics 54: 484-493.
2. Okamoto, N., et al. 2001. cDNA sequence of human carbonic anhydrase-related protein, CA-RP X: mRNA expressions of CA-RP X and XI in human brain. Biochim. Biophys. Acta 1518: 311-316.
3. Taniuchi, K., et al. 2002. Developmental expression of carbonic anhydrase-related proteins VIII, X, and XI in the human brain. Neuroscience 112: 93-99.
4. Taniuchi, K., et al. 2003. cDNA cloning and developmental expression of murine carbonic anhydrase-related proteins VIII, X, and XI. Brain Res. Mol. Brain Res. 109: 207-215.
5. Vullo, D., et al. 2004. Designing of novel carbonic anhydrase inhibitors and activators. Curr. Med. Chem. Cardiovasc. Hematol. Agents 2: 51-70.
6. Pastorekova, S., et al. 2004. Carbonic anhydrases: current state of the art, therapeutic applications and future prospects. J. Enzyme Inhib. Med. Chem. 19: 199-229.
7. Gulcin, I., et al. 2004. *In vitro* and *in vivo* effects of dantrolene on carbonic anhydrase enzyme activities. Biol. Pharm. Bull. 27: 613-616.
8. Ohradanova, A., et al. 2007. Reconstitution of carbonic anhydrase activity of the cell surface binding protein of vaccinia virus. Biochem. J. 407: 61-67.

CHROMOSOMAL LOCATION

Genetic locus: CA10 (human) mapping to 17q21.33; Car10 (mouse) mapping to 11 D.

SOURCE

CA X (H-50) is a rabbit polyclonal antibody raised against amino acids 1-50 mapping at the N-terminus of CA X of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CA X (H-50) is recommended for detection of CA X of mouse 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).

CA X (H-50) is also recommended for detection of CA X in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for CA X siRNA (h): sc-62040, CA X siRNA (m): sc-62041, CA X shRNA Plasmid (h): sc-62040-SH, CA X shRNA Plasmid (m): sc-62041-SH, CA X shRNA (h) Lentiviral Particles: sc-62040-V and CA X shRNA (m) Lentiviral Particles: sc-62041-V.

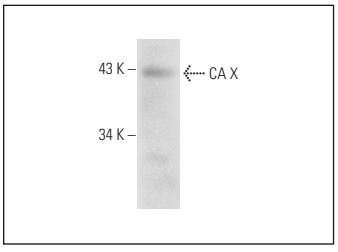
Molecular Weight of CA X: 38 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CA X (H-50): sc-67332. Western blot analysis of CA X expression in CCRF-CEM 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.