



CA XV (E-15): sc-54771

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 XV, also referred to as carbonate dehydratase XV or Car15, is a glycosylated glycosylphosphatidylinositol-anchored membrane protein expressed ubiquitously at low levels. CA XV is predominantly expressed in kidney, brain and testis. In humans and chimpanzees, it is a non-processed pseudogene. In mouse, CA XV exhibits highest homology with family member CA IV. CA XV contains three glycosylation sites at asparagine residues 189, 201 and 210.

REFERENCES

- Almajan, G.L., Innocenti, A., Puccetti, L., Manole, G., Barbuceanu, S., Saramet, I., Scozzafava, A. and Supuran, C.T. 2005. Carbonic anhydrase inhibitors. Inhibition of the cytosolic and tumor-associated carbonic anhydrase isozymes I, II, and IX with a series of 1,3,4-thiadiazole- and 1,2,4-triazole-thiols. *Bioorg. Med. Chem. Lett.* 15: 2347-2352.
- Shah, G.N., Ulmasov, B., Waheed, A., Becker, T., Makani, S., Svichar, N., Chesler, M. and Sly, W.S. 2005. Carbonic anhydrase IV and XIV knockout mice: roles of the respective carbonic anhydrases in buffering the extracellular space in brain. *Proc. Natl. Acad. Sci. USA* 102: 16771-16776.
- Hilvo, M., Tolvanen, M., Clark, A., Shen, B., Shah, G.N., Waheed, A., Halmi, P., Hänninen, M., Hämäläinen, J.M., Vihinen, M., Sly, W.S. and Parkkila, S. 2005. Characterization of CA XV, a new GPI-anchored form of carbonic anhydrase. *Biochem. J.* 392: 83-92.
- Thiry, A., Dogné, J.M., Masereel, B. and Supuran, C.T. 2006. Targeting tumor-associated carbonic anhydrase IX in cancer therapy. *Trends Pharmacol. Sci.* 27: 566-573.
- Supuran, C.T. 2007. Carbonic anhydrases as drug targets—an overview. *Curr. Top. Med. Chem.* 7: 825-833.
- Hilvo, M., Supuran, C.T. and Parkkila, S. 2007. Characterization and inhibition of the recently discovered carbonic anhydrase isoforms CA XIII, XIV and XV. *Curr. Top. Med. Chem.* 7: 893-899.
- Pan, P.W., Rodriguez, A. and Parkkila, S. 2007. A systematic quantification of carbonic anhydrase transcripts in the mouse digestive system. *BMC Mol. Biol.* 8: 22.
- Supuran, C.T. and Scozzafava, A. 2007. Carbonic anhydrases as targets for medicinal chemistry. *Bioorg. Med. Chem.* 15: 4336-4350.
- Riihonen, R., Supuran, C.T., Parkkila, S., Pastorekova, S., Väänänen, H.K. and Laitala-Leinonen, T. 2007. Membrane-bound carbonic anhydrases in osteoclasts. *Bone* 40: 1021-1031.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: Car15 (mouse) mapping to 16 A3.

SOURCE

CA XV (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CA XV 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-54771 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CA XV (E-15) is recommended for detection of CA XV of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 CA XV siRNA (m): sc-62047.

Molecular Weight of glycosylated CA XV: 32-36 kDa.

Molecular Weight of unglycosylated CA XV: 29 kDa.

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) 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.

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.