

CA V (A-1): sc-398184

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metallo-enzymes that catalyze the reversible hydration of carbon dioxide. CAs are involved in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption, and the formation of aqueous humor, cerebrospinal fluid, saliva, and gastric juice. They show extensive diversity in distribution and in their subcellular localization. The human CA5A gene encodes for the CA V protein which is expressed in the mitochondrial matrix in liver tissues, but can also be detected in many other tissues. In ureagenesis, the CA V protein may be involved in providing bicarbonate to carbamoyl phosphate synthetase.

REFERENCES

1. Dodgson, S.J., et al. 1991. The carbonic anhydrases: cellular physiology and molecular genetics. New York: Plenum.
2. Sly, W.S. and Hu, P.Y. 1995. Human carbonic anhydrases and carbonic anhydrase deficiencies. Annu. Rev. Biochem. 64: 375-401.
3. Nagao, Y., et al. 1996. Genomic organization of the human gene (CA5) and pseudogene for mitochondrial carbonic anhydrase V and their localization to chromosomes 16q and 16p. Genomics 28: 477-484.
4. Duda, D.M., et al. 2005. Human carbonic anhydrase III: structural and kinetic study of catalysis and proton transfer. Biochemistry 44: 10046-10053.
5. Ishii, Y., et al. 2005. Suppression of carbonic anhydrase III mRNA level by an aryl hydrocarbon receptor ligand in primary cultured hepatocytes of rat. Biol. Pharm. Bull. 28: 1087-1090.

CHROMOSOMAL LOCATION

Genetic locus: CA5A (human) mapping to 16q24.2; Car5a (mouse) mapping to 8 E1.

SOURCE

CA V (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 40-69 near the N-terminus of CA V of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CA V (A-1) is available conjugated to agarose (sc-398184 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398184 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398184 PE), fluorescein (sc-398184 FITC), Alexa Fluor® 488 (sc-398184 AF488), Alexa Fluor® 546 (sc-398184 AF546), Alexa Fluor® 594 (sc-398184 AF594) or Alexa Fluor® 647 (sc-398184 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398184 AF680) or Alexa Fluor® 790 (sc-398184 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398184 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

CA V (A-1) is recommended for detection of CA V of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 CA V siRNA (h): sc-60311, CA V siRNA (m): sc-60312, CA V shRNA Plasmid (h): sc-60311-SH, CA V shRNA Plasmid (m): sc-60312-SH, CA V shRNA (h) Lentiviral Particles: sc-60311-V and CA V shRNA (m) Lentiviral Particles: sc-60312-V.

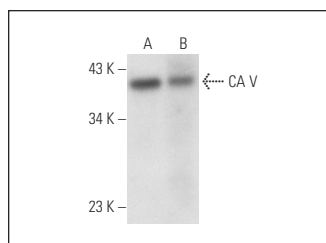
Molecular Weight of CA V: 35 kDa.

Positive Controls: rat liver extract: sc-2395, SJRH30 cell lysate: sc-2287 or human liver extract: sc-363766.

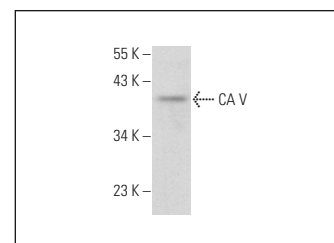
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CA V (A-1): sc-398184. Western blot analysis of CA V expression in human liver (A) and rat liver (B) tissue extracts.



CA V (A-1): sc-398184. Western blot analysis of CA V expression in SJRH30 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 for detailed protocols and support products.