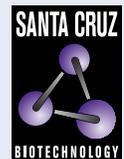


CA III (G-5): sc-398912



The Power to Question

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metalloenzymes 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. CA III (carbonic anhydrase III), also known as Car3 or CA3, is a 260 amino acid cytoplasmic protein that is specifically expressed in muscle. Belonging to the α -carbonic anhydrase family, CA III is activated by proton donors such as imidazole and dipeptide histidylhistidine, and is inhibited by coumarins and sulfonamide derivatives such as acetazolamide.

REFERENCES

1. Heath, R., et al. 1985. Evaluation of carrier detection of Duchenne muscular dystrophy using carbonic anhydrase III and creatine kinase. *Am. J. Med. Genet.* 21: 291-296.
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3. Beechey, C., et al. 1990. Mapping of mouse carbonic anhydrase-3, Car-3: another locus in the homologous region of mouse chromosome 3 and human chromosome 8. *Genomics* 6: 692-696.
4. Igarashi, S., et al. 1992. Comparison of the distribution of carbonic anhydrase isozymes (CA-I, CA-II, CA-III) in the rat gastrointestinal tract. *J. Vet. Med. Sci.* 54: 535-539.
5. Mahieu, I., et al. 1995. Localisation an II, CA III and CA IV) in an umbilical vein endothelial cell line (EA-hy926). *Biochem. Soc. Trans.* 23: 308S.
6. Rusconi, S., et al. 2004. Carbonic anhydrase inhibitors. Interaction of isozymes I, II, IV, V, and IX with phosphates, carbamoyl phosphate, and the phosphonate antiviral drug fosfarnet. *Bioorg. Med. Chem. Lett.* 14: 5763-5767.

CHROMOSOMAL LOCATION

Genetic locus: CA3 (human) mapping to 8q21.2; Car3 (mouse) mapping to 3 A1.

SOURCE

CA III (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 17-33 at the N-terminus of CA III of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398912 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CA III (G-5) is recommended for detection of CA III of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 III siRNA (h): sc-60309, CA III siRNA (m): sc-60310, CA III shRNA Plasmid (h): sc-60309-SH, CA III shRNA Plasmid (m): sc-60310-SH, CA III shRNA (h) Lentiviral Particles: sc-60309-V and CA III shRNA (m) Lentiviral Particles: sc-60310-V.

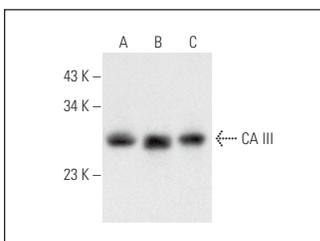
Molecular Weight of CA III: 28 kDa.

Positive Controls: human skeletal muscle extract: sc-363776, rat skeletal muscle extract: sc-364810 or mouse skeletal muscle extract: sc-364250.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 III (G-5): sc-398912. Western blot analysis of CA III expression in human skeletal muscle (A), rat skeletal muscle (B) and mouse skeletal muscle (C) tissue extracts.

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.