

CA III (N-13): sc-50716

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 CA2 gene, which maps to chromosome 8q22, encodes CA II, a cytoplasmic protein that has the highest turnover rate and widest tissue distribution of any known human CA isozyme. The human CA4 gene, which maps to chromosome 17q23, encodes CA IV, a membrane-anchored isozyme that is expressed on the luminal surfaces of pulmonary capillaries and proximal renal tubules. The human CA9, CA12 and CA14 genes, which map to chromosomes 9p13-p12, 15q22 and 1q21, respectively, encode transmembrane proteins that have unique patterns of tissue-specific expression. CA IX is specifically expressed in clear-cell renal carcinomas, whereas CA XII is highly expressed in normal tissues, such as kidney, colon and pancreas. Human CA XIV is also expressed in normal tissues, such as brain, but differs from CA XII in its expression pattern.

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.
2. Edwards, Y.H., et al. 1988. The gene for human muscle specific carbonic anhydrase (CA III) is assigned to chromosome 8. *Ann. Hum. Genet.* 50: 41-47.
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.

CHROMOSOMAL LOCATION

Genetic locus: CA3 (human) mapping to 8q21.2.

SOURCE

CA III (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CA III 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-50716 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CA III (N-13) is recommended for detection of CA III 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).

CA III (N-13) is also recommended for detection of CA III in additional species, including bovine.

Suitable for use as control antibody for CA III siRNA (h): sc-60309, CA III shRNA Plasmid (h): sc-60309-SH and CA III shRNA (h) Lentiviral Particles: sc-60309-V.

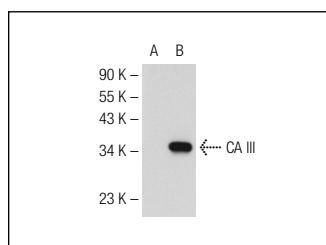
Molecular Weight of CA III: 28 kDa.

Positive Controls: CA III (h): 293T Lysate: sc-158315.

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



CA III (N-13): sc-50716. Western blot analysis of CA III expression in non-transfected: sc-117752 (A) and human CA III transfected: sc-158315 (B) 293T whole cell lysates.

RESEARCH USE

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

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Try **CA III (F-10): sc-373729** or **CA III (B-2): sc-398369**, our highly recommended monoclonal alternatives to CA III (N-13).