

CA I (A-19): sc-50894

BACKGROUND

Carbonic anhydrases (CAs), also designated carbonate dehydratases or carbonate hydrolyases, form a large family of genes that encode zinc metalloenzymes of great physiologic importance. As catalysts of the reversible hydration of carbon dioxide, these enzymes participate in a variety of biologic processes, including respiration, acid-base balance, bone resorption and calcification, as well as the formation of aqueous humor, cerebrospinal fluid, saliva and gastric acid. Genes in the α -carbonic anhydrase family encode either active carbonic anhydrase isozymes or "acatalytic" (devoid of CO₂ hydration activity) carbonic anhydrase-related proteins. Human CA I (CA1) is encoded by the CA1 gene, which has been assigned to chromosome 8 and harbors a cluster of CA genes. CA I localizes to the cytoplasm and research indicates that a severe deficiency of CA I does not result in any obvious hematological or renal consequences.

REFERENCES

- Hopkinson, D.A., et al. 1975. The detection and differentiation of the products of the human carbonic anhydrase loci, CA I and CA II using fluorogenic substrates. *Ann. Hum. Genet.* 38: 155-162.
- Davis, M.B., et al. 1987. Regional localization of carbonic anhydrase genes CA1 and CA3 on human chromosome 8. *Somat. Cell Mol. Genet.* 13: 173-178.
- Edwards, Y.H., et al. 1988. Assignment of the gene determining human carbonic anhydrase, CA1, to chromosome 8. *Ann. Hum. Genet.* 50 (Pt 2): 123-129.
- Hewett-Emmett, D. and Tashian, R.E. 1996. Functional diversity, conservation, and convergence in the evolution of the α -, β -, and γ -carbonic anhydrase gene families. *Mol. Phylogenet. Evol.* 5: 50-77.
- Ichihara, N., et al. 1998. Immunohistochemical localization of carbonic anhydrase isozymes (CA I, CA II and CA III) in bovine male reproductive tracts. *Okajimas Folia Anat. Jpn.* 74: 193-198.

CHROMOSOMAL LOCATION

Genetic locus: Car1 (mouse) mapping to 3 A1.

SOURCE

CA I (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CA I of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-50894 P, (100 μ g 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 I (A-19) is recommended for detection of CA I of mouse and rat origin by Western Blotting (starting dilution 1:200, 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 I siRNA (m): sc-60308, CA I shRNA Plasmid (m): sc-60308-SH and CA I shRNA (m) Lentiviral Particles: sc-60308-V.

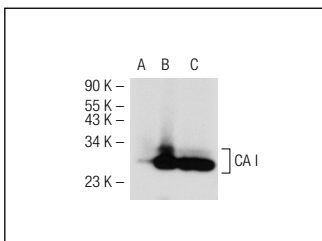
Molecular Weight of CA I: 29 kDa.

Positive Controls: mouse spleen extract: sc-2391, CA I (m): 293T lysate: sc-118938 or rat lingual mucous glands.

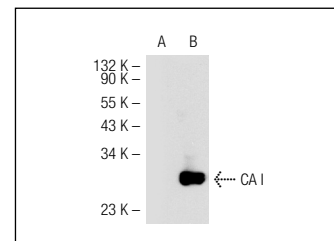
RECOMMENDED SECONDARY REAGENTS

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 I (A-19): sc-50894. Western blot analysis of CA I expression in non-transfected: sc-117752 (A) and mouse CA I transfected: sc-118938 (B) 293T whole cell lysates and mouse spleen tissue extract (C).



CA I (A-19): sc-50894. Western blot analysis of CA I expression in non-transfected: sc-117752 (A) and mouse CA I transfected: sc-118938 (B) 293T whole cell lysates.

RESEARCH USE

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

MONOS
Satisfaction
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Try **CA I (F-5): sc-393490** or **CA I (F-11): sc-393497**, our highly recommended monoclonal alternatives to CA I (A-19).