CA I (m2): 293T Lysate: sc-118939



The Power to Question

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 $\rm CO_2$ hydration activity) carbonic anhydrase-related proteins. Human CA I (CA1) is encoded by the CA1 gene, which maps to a region on chromosome 8q21.2 that 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

- 1. 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.
- 3. Edwards, Y.H., et al. 1988. Assignment of the gene determining human carbonic anhydrase, CA I, to chromosome 8. Ann. Hum. Genet. 50: 123-129.
- 4. 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. Immunohistolocalization of carbonic anhydrase isozymes (CA I, CA II and CA III) in bovine male reproductive tracts. Okajimas Folia Anat. Jpn. 74: 193-198.
- 6. Asari, M., et al. 2000. Immunohistochemistry of carbonic anhydrase isozymes (CA I, II and III) in canine salivary glands: a distributional and comparative assessment. Anat. Histol. Embryol. 29: 9-12.
- 7. Supuran, C.T., et al. 2000. Carbonic anhydrase inhibitors: synthesis of sulfonamides incorporating 2,4,6-trisubstituted-pyridinium-ethylcarboxamido moieties possessing membrane-impermeability and *in vivo* selectivity for the membrane-bound (CA IV) versus the cytosolic (CA I and CA II) isozymes. J. Enzym. Inhib. 15: 381-401.
- 8. Kivela, A.J., et al. 2001. Differential expression of cytoplasmic carbonic anhydrases, membrane-associated isozymes, CA IX and XII, in normal mucosa of large intestine and in colorectal tumors. Dig. Dis. Sci. 46: 2179-2186.

CHROMOSOMAL LOCATION

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

PRODUCT

CA I (m2): 293T Lysate represents a lysate of mouse CA I transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

CA I (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive CA I antibodies. Recommended use: 10-20 μ I per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3800 fax 831.457.3801 **Europe** +00800 4573 8000 49 6221 4503 0 **www.scbt.com**