

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

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.
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.
5. Mahieu, I., et al. 1995. Localisation and characterisation of carbonic anhydrase isozymes (CA I, CA II, CA III and CA IV) in an umbilical vein endothelial cell line (EA-hy926). *Biochem. Soc. Trans.* 23: 308.
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 foscarnet. *Bioorg. Med. Chem. Lett.* 14: 5763-5767.
7. Innocenti, A., et al. 2005. Carbonic anhydrase inhibitors. Inhibition of isozymes I, II, IV, V, and IX with anions isosteric and isoelectronic with sulfate, nitrate, and carbonate. *Bioorg. Med. Chem. Lett.* 15: 567-571.
8. Innocenti, A., et al. 2005. Carbonic anhydrase inhibitors. Interaction of isozymes I, II, IV, V, and IX with carboxylates. *Bioorg. Med. Chem. Lett.* 15: 573-578.
9. Innocenti, A., et al. 2005. Carbonic anhydrase inhibitors. Inhibition of isozymes I, II, IV, V and IX with complex fluorides, chlorides and cyanides. *Bioorg. Med. Chem. Lett.* 15: 1909-1913.

CHROMOSOMAL LOCATION

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

PRODUCT

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

APPLICATIONS

CA III (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CA III antibodies. Recommended use: 10-20 μ l 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.