SANTA CRUZ BIOTECHNOLOGY, INC.

CA IX (H-120): sc-25599

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. 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 9p13.3, 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.

CHROMOSOMAL LOCATION

Genetic locus: CA9 (human) mapping to 9p13.3.

SOURCE

CA IX (H-120) is a rabbit polyclonal antibody raised against amino acids 41-160 of CA IX 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.

APPLICATIONS

CA IX (H-120) is recommended for detection of CA IX 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), immunohistochemistry (including paraffin-embedded sections) (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 IX siRNA (h): sc-29869, CA IX shRNA Plasmid (h): sc-29869-SH and CA IX shRNA (h) Lentiviral Particles: sc-29869-V.

Molecular Weight of CA IX: 58 kDa.

Positive Controls: human stomach extract: sc-363780, ZR-75-1 cell lysate: sc-2241 or DU 145 cell lysate: sc-2268.

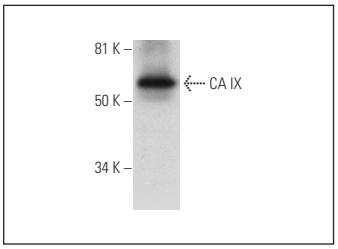
STORAGE

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

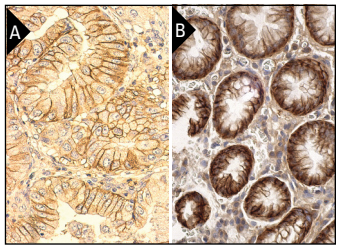
RESEARCH USE

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

DATA



CA IX (H-120): sc-25599. Western blot analysis of CA IX expression in human stomach tissue extract.



CA IX (H-120): sc-25599. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gastric tumor tissue showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Kon-no, H., et al. 2006. Carbonic anhydrase IX expression is associated with tumor progression and a poor prognosis of lung adenocarcinoma. Lung Cancer 54: 409-418.
2. Fujii, S., et al. 2008. Autophagy is activated in pancreatic cancer cells and correlates with poor patient outcome. Cancer Sci. 99: 1813-1819.
3. Ahlskog, J.K., et al. 2009. Human monoclonal antibodies targeting carbonic anhydrase IX for the molecular imaging of hypoxic regions in solid tumours. Br. J. Cancer 101: 645-657.
4. Nakao, M., et al. 2009. Prognostic significance of carbonic anhydrase IX expression by cancer-associated fibroblasts in lung adenocarcinoma. Cancer 115: 2732-2743.
5. Eckert, A.W., et al. 2010. Co-expression of Hif1α and CAIX is associated with poor prognosis in oral squamous cell carcinoma patients. J. Oral Pathol. Med. 39: 313-317.
6. Buanne, P., et al. 2013. Characterization of carbonic anhydrase IX interactome reveals proteins assisting its nuclear localization in hypoxic cells. J. Proteome Res. 12: 282-292.
7. Wang, Y., et al. 2013. A cell-penetrating peptide suppresses the hypoxia inducible factor-1 function by binding to the helix-loop-helix domain of the aryl hydrocarbon receptor nuclear translocator. Chem. Biol. Interact. 203: 401-411.