SANTA CRUZ BIOTECHNOLOGY, INC.

CA IX (N-19): sc-17253

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 8q21.2, 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, 15q22.2 and 1q21.2, 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; Car9 (mouse) mapping to 4 B1.

SOURCE

CA IX (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-17253 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CA IX (N-19) is recommended for detection of CA IX of human and, to a lesser extent, mouse and rat 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 siRNA (m): sc-29870, CA IX shRNA Plasmid (h): sc-29869-SH, CA IX shRNA Plasmid (m): sc-29870-SH, CA IX shRNA (h) Lentiviral Particles: sc-29869-V and CA IX shRNA (m) Lentiviral Particles: sc-29870-V.

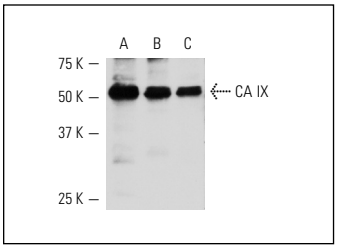
Molecular Weight of CA IX: 58 kDa.

Positive Controls: CA IX (h3): 293 Lysate: sc-158316, HeLa + PMA cell lysate: sc-2258 or HeLa whole cell lysate: sc-2200.

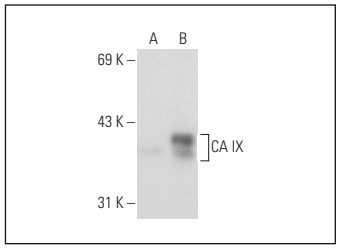
STORAGE

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

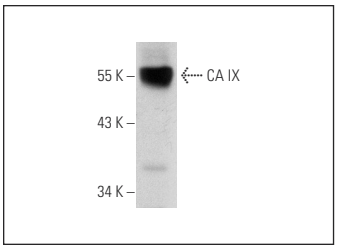
DATA



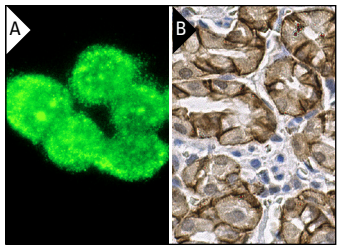
CA IX (N-19): sc-17253. Western blot analysis of CA IX expression in HeLa + PMA (**A**), F9 (**B**) and LS1034 (**C**) whole cell lysates.



CA IX (N-19): sc-17253. Western blot analysis of CA IX expression in non-transfected: sc-110760 (**A**) and human CA IX transfected: sc-158316 (**B**) 293 whole cell lysates.



CA IX (N-19): sc-17253. Western blot analysis of CA IX expression in HeLa whole cell lysate.



CA IX (N-19): sc-17253. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing membrane and weak nuclear 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. Funes, J.M., et al. 2007. Transformation of human mesenchymal stem cells increases their dependency on oxidative phosphorylation for energy production. Proc. Natl. Acad. Sci. USA 104: 6223-6228.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.