

CA II (H-70): sc-25596

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metallo-enzymes 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-p12, 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: CA2 (human) mapping to 8q21.2; Car2 (mouse) mapping to 3 A1.

SOURCE

CA II (H-70) is a rabbit polyclonal antibody raised against amino acids 191-260 of CA II 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 II (H-70) is recommended for detection of CA II of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CA II (H-70) is also recommended for detection of CA II in additional species, including equine, canine and bovine.

Suitable for use as control antibody for CA II siRNA (h): sc-29865, CA II siRNA (m): sc-29866, CA II shRNA Plasmid (h): sc-29865-SH, CA II shRNA Plasmid (m): sc-29866-SH, CA II shRNA (h) Lentiviral Particles: sc-29865-V and CA II shRNA (m) Lentiviral Particles: sc-29866-V.

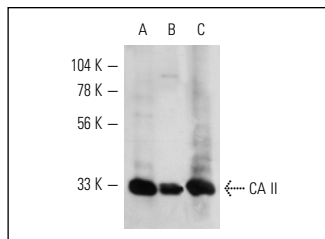
Molecular Weight of CA II: 29 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, HEL 92.1.7 cell lysate: sc-2270 or rat kidney extract.

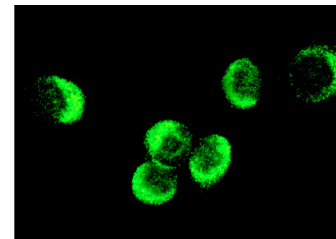
STORAGE

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

DATA



CA II (H-70): sc-25596. Western blot analysis of CA II expression in Caki-1 (A) and HEL 92.1.7 (B) whole cell lysates and rat kidney tissue extract (C).



CA II (H-70): sc-25596. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Mallory, J.C., et al. 2005. A novel group of genes regulates susceptibility to antineoplastic drugs in highly tumorigenic breast cancer cells. *Mol. Pharmacol.* 68: 1747-1756.
- David, D., et al. 2006. β -amyloid treatment of two complementary P301L tau-expressing Alzheimer's disease models reveals similar deregulated cellular processes. *Proteomics* 6: 6566-6577.
- Alvarez, B.V., et al. 2007. Blindness caused by deficiency in AE3 chloride/bicarbonate exchanger. *PLoS ONE* 2: e839.
- Mau, M., et al. 2009. Evidence for the presence of carbonic anhydrase 29-kDa isoenzyme in salivary secretions of three ruminating species and the gelada baboon. *Arch. Oral Biol.* 54: 354-360.
- Tanaka, A. 2009. Identification of the specific binding proteins of bioactive small compound using affinity resins. *Methods Mol. Biol.* 577: 181-195.
- Kitami, S., et al. 2010. IL-17A suppresses the expression of bone resorption-related proteinases and osteoclast differentiation via IL-17RA or IL-17RC receptors in RAW 264.7 cells. *Biochimie* 92: 398-404.
- Mau, M., et al. 2010. Carbonic anhydrase II is secreted from bovine parotid glands. *Histol. Histopathol.* 25: 321-329.
- Kheterpal, I., et al. 2011. Proteome of human subcutaneous adipose tissue stromal vascular fraction cells versus mature adipocytes based on DIGE. *J. Proteome Res.* 10: 1519-1527.
- Zhang, F., et al. 2011. Interleukin-17A induces cathepsin K and MMP-9 expression in osteoclasts via celecoxib-blocked prostaglandin E2 in osteoblasts. *Biochimie* 93: 296-305.

RESEARCH USE

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