

# CA XII (N-20): sc-16453

## 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 and bone resorption, as well as 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, 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, 15q22.2 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: CA12 (human) mapping to 15q22.2; Car12 (mouse) mapping to 9 C.

## SOURCE

CA XII (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CA XII of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16453 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CA XII (N-20) is recommended for detection of CA XII of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

CA XII (N-20) is also recommended for detection of CA XII in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for CA XII siRNA (h): sc-41463, CA XII siRNA (m): sc-41464, CA XII shRNA Plasmid (h): sc-41463-SH, CA XII shRNA Plasmid (m): sc-41464-SH, CA XII shRNA (h) Lentiviral Particles: sc-41463-V, CA XII shRNA (m) Lentiviral Particles: sc-41464-V.

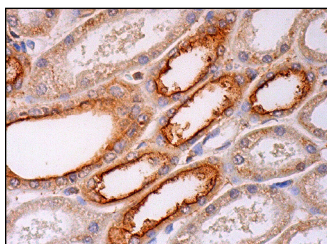
Molecular Weight of CA XII: 43/44 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



CA XII (N-20): sc-16453. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing apical membrane and cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS

1. Croke, A., et al. 2012. Involvement of carbonic anhydrases in the ocular hypotensive effect of melatonin analogue 5-MCA-NAT. J. Pineal Res. 52: 265-270.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Satisfaction  
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Try **CA XII (D-2): sc-374314** or **CA XII (A-3): sc-374313**, our highly recommended monoclonal alternatives to CA XII (N-20).