

# CA VII (H-90): sc-67331

## BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metalloenzymes responsible for catalyzing the reversible hydration of carbon dioxide. CAs show extensive diversity in their distribution and subcellular localization. They are involved in a variety of biological processes, including calcification, bone resorption, respiration, acid-base balance and the formation of aqueous humor, saliva, gastric juice and cerebrospinal fluid. CA VII, also known as carbonate dehydratase VII, is a highly conserved mammalian carbonic anhydrase. It localizes to the cytoplasm and is ubiquitously expressed at low levels, but is present at significant levels in brain and salivary glands. CA VII may influence GABAergic excitation in neurons and contribute to the triggering of convulsions common to neurological disorders. Due to the high expression level of CA VII in brain, it may be useful in the development of pharmacologic agents for managing epilepsy and Alzheimer's disease.

## REFERENCES

1. Earnhardt, J.N., et al. 1998. The catalytic properties of murine carbonic anhydrase VII. *Biochemistry* 37: 10837-10845.
2. Ruusuvoori, E., et al. 2004. Carbonic anhydrase isoform VII acts as a molecular switch in the development of synchronous  $\gamma$ -frequency firing of hippocampal CA1 pyramidal cells. *J. Neurosci.* 24: 2699-2707.

## CHROMOSOMAL LOCATION

Genetic locus: CA7 (human) mapping to 16q22.1; Car7 (mouse) mapping to 8 D3.

## SOURCE

CA VII (H-90) is a rabbit polyclonal antibody raised against amino acids 1-90 mapping at the N-terminus of CA VII of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

CA VII (H-90) is recommended for detection of CA VII of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 VII (H-90) is also recommended for detection of CA VII in additional species, including bovine and canine.

Suitable for use as control antibody for CA VII siRNA (h): sc-62036, CA VII siRNA (m): sc-62037, CA VII shRNA Plasmid (h): sc-62036-SH, CA VII shRNA Plasmid (m): sc-62037-SH, CA VII shRNA (h) Lentiviral Particles: sc-62036-V and CA VII shRNA (m) Lentiviral Particles: sc-62037-V.

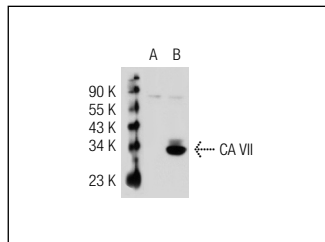
Molecular Weight of CA VII: 30 kDa.

Positive Controls: CA VII (h): 293T Lysate: sc-115027, HeLa whole cell lysate: sc-2200 or HeLa nuclear extract: sc-2120.

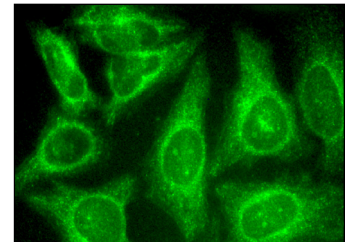
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CA VII (H-90): sc-67331. Western blot analysis of CA VII expression in non-transfected: sc-117752 (A) and human CA VII transfected: sc-115027 (B) 293T whole cell lysates.



CA VII (H-90): sc-67331. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## 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.



Try **CA VII (G-7): sc-166721** or **CA VII (H-4): sc-166783**, our highly recommended monoclonal alternatives to CA VII (H-90).