

# CA VIII (B-5): sc-166069

## 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 VIII, also referred to as carbonic anhydrase-related protein VIII (CA-RP VIII), is a member of the carbonic anhydrase family that lacks the Zn-binding motif essential for carbonic anhydrase activity. For this reason, CA VIII does not exhibit catalytic activity but instead may be important in synaptic vesicle formation and transport. In addition, CA VIII may be involved in the invasiveness of non-small cell lung carcinomas and may also play a role in the growth of colon cancer cells.

## REFERENCES

1. Bataller, L., et al. 2004. Carbonic anhydrase-related protein VIII: autoantigen in paraneoplastic cerebellar degeneration. *Ann. Neurol.* 56: 575-579.
2. Morimoto, K., et al. 2005. Overexpression of carbonic anhydrase-related protein XI promotes proliferation and invasion of gastrointestinal stromal tumors. *Virchows Arch.* 447: 66-73.
3. Halmi, P., et al. 2005. Expression of carbonic anhydrases II, IV, VII, VIII and XII in rat brain after kainic acid induced status epilepticus. *Neurochem. Int.* 48: 24-30.
4. Jiao, Y., et al. 2005. Carbonic anhydrase-related protein VIII deficiency is associated with a distinctive lifelong gait disorder in waddles mice. *Genetics* 171: 1239-1246.
5. Ishihara, T., et al. 2006. Carbonic anhydrase-related protein VIII increases invasiveness of non-small cell lung adenocarcinoma. *Virchows Arch.* 448: 830-837.
6. Yan, J., et al. 2007. Effects of carbonic anhydrase VIII deficiency on cerebellar gene expression profiles in the wdl mouse. *Neurosci. Lett.* 413: 196-201.

## CHROMOSOMAL LOCATION

Genetic locus: CA8 (human) mapping to 8q12.1; Car8 (mouse) mapping to 4 A1.

## SOURCE

CA VIII (B-5) is a mouse monoclonal antibody raised against amino acids 1-100 mapping at the N-terminus of CA VIII of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

CA VIII (B-5) is recommended for detection of CA VIII of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for CA VIII siRNA (h): sc-62038, CA VIII siRNA (m): sc-62039, CA VIII shRNA Plasmid (h): sc-62038-SH, CA VIII shRNA Plasmid (m): sc-62039-SH, CA VIII shRNA (h) Lentiviral Particles: sc-62038-V and CA VIII shRNA (m) Lentiviral Particles: sc-62039-V.

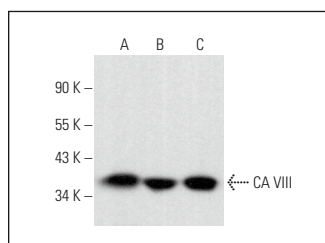
Molecular Weight of CA VIII: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, rat brain extract: sc-2392 or HEL 92.1.7 cell lysate: sc-2270.

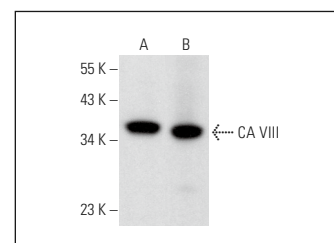
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



CA VIII (B-5): sc-166069. Western blot analysis of CA VIII expression in K-562 (A), Jurkat (B) and HEL 92.1.7 (C) whole cell lysates.



CA VIII (B-5): sc-166069. Western blot analysis of CA VIII expression in K-562 whole cell lysate (A) and rat brain tissue extract (B).

## SELECT PRODUCT CITATIONS

1. Gao, M., et al. 2013. An altered expression of genes involved in the regulation of ion channels in atrial myocytes is correlated with the risk of atrial fibrillation in patients with heart failure. *Exp. Ther. Med.* 5: 1239-1243.

## 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) for detailed protocols and support products.