

CA VII (G-15): sc-54737

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

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2. Ruusuvaari, E., Li, H., Huttu, K., Palva, J.M., Smirnov, S., Rivera, C., Kaila, K. and Voipio, J. 2004. Carbonic anhydrase isoform VII acts as a molecular switch in the development of synchronous γ -frequency firing of hippocampal CA1 pyramidal cells. *J. Neurosci.* 24: 2699-2707.
3. Vullo, D., Voipio, J., Innocenti, A., Rivera, C., Ranki, H., Scozzafava, A., Kaila, K. and Supuran, C.T. 2005. Carbonic anhydrase inhibitors. Inhibition of the human cytosolic isozyme VII with aromatic and heterocyclic sulfonamides. *Bioorg. Med. Chem. Lett.* 15: 971-976.
4. Halmi, P., Parkkila, S. and Honkaniemi, J. 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.

CHROMOSOMAL LOCATION

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

SOURCE

CA VII (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CA VII of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-54737 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CA VII (G-15) is recommended for detection of CA VII of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 (G-15) is also recommended for detection of CA VII in additional species, including canine and bovine.

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.

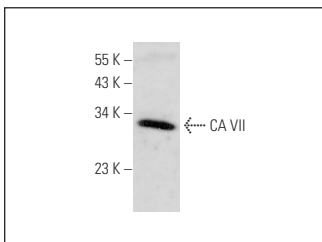
Molecular Weight of CA VII: 30 kDa.

Positive Controls: human bladder extract: sc-363751, HeLa nuclear extract: sc-2120 or 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CA VII (G-15): sc-54737. Western blot analysis of CA VII expression in human bladder tissue extract.

RESEARCH USE

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

MONOS
Satisfaction
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Try **CA VII (G-7): sc-166721** or **CA VII (H-4): sc-166783**, our highly recommended monoclonal alternatives to CA VII (G-15).