

CA XIII (D-8): sc-374517

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metallo-enzymes 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 XIII, also referred to as carbonate dehydratase XIII, is predominantly expressed in spleen, prostate, thymus, ovary, testis, colon and small intestine localizing to the cytoplasm. It exhibits highest homology with family members CA I, CA II and CA III. CA XIII may play a role in embryogenesis. Efficient inhibitors of CA XIII activity are sulfanilyl-sulfonamide type inhibitors.

REFERENCES

1. Lehtonen, J.M., et al. 2004. Carbonic anhydrase inhibitors. Inhibition of cytosolic isozyme XIII with aromatic and heterocyclic sulfonamides: a novel target for the drug design. *Bioorg. Med. Chem. Lett.* 14: 3757-3762.
2. Innocenti, A., et al. 2004. Carbonic anhydrase inhibitors. Inhibition of the newly isolated murine isozyme XIII with anions. *Bioorg. Med. Chem. Lett.* 14: 5435-5439.
3. Lehtonen, J., et al. 2004. Characterization of CA XIII, a novel member of the carbonic anhydrase isozyme family. *J. Biol. Chem.* 279: 2719-2727.
4. Kummola, L., et al. 2005. Expression of a novel carbonic anhydrase, CA XIII, in normal and neoplastic colorectal mucosa. *BMC Cancer* 5: 41.
5. Winum, J.Y., et al. 2006. Carbonic anhydrase inhibitors: clash with Ala 65 as a means for designing inhibitors with low affinity for the ubiquitous isozyme II, exemplified by the crystal structure of the topiramate sulfamide analogue. *J. Med. Chem.* 49: 7024-7031.
6. Pan, P., et al. 2006. Carbonic anhydrase gene expression in CA II-deficient (Car2^{-/-}) and CA IX-deficient (Car9^{-/-}) mice. *J. Physiol.* 571: 319-327.
7. Supuran, C.T., et al. 2007. Carbonic anhydrases as targets for medicinal chemistry. *Bioorg. Med. Chem.* 15: 4336-4350.

CHROMOSOMAL LOCATION

Genetic locus: CA13 (human) mapping to 8q21.2; Car13 (mouse) mapping to 3 A1.

SOURCE

CA XIII (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 31-65 within an internal region of CA XIII of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374517 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CA XIII (D-8) is recommended for detection of CA XIII 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), 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).

Suitable for use as control antibody for CA XIII siRNA (h): sc-62044, CA XIII siRNA (m): sc-62045, CA XIII shRNA Plasmid (h): sc-62044-SH, CA XIII shRNA Plasmid (m): sc-62045-SH, CA XIII shRNA (h) Lentiviral Particles: sc-62044-V and CA XIII shRNA (m) Lentiviral Particles: sc-62045-V.

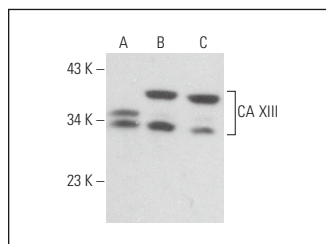
Molecular Weight of CA XIII: 30 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, NTERA-2 cl.D1 whole cell lysate: sc-364181 or Caco-2 cell lysate: sc-2262.

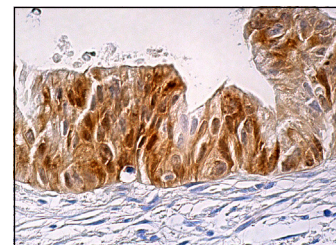
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGλ BP-HRP: sc-516132 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CA XIII (D-8): sc-374517. Western blot analysis of CA XIII expression in Hep G2 (A), NTERA-2 cl.D1 (B) and Caco-2 (C) whole cell lysates. Detection reagent used: m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM.



CA XIII (D-8): sc-374517. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and nuclear staining of glandular cells.

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.