

CA XIII (G-11): sc-376753

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 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 sulfanyl-sulfonamide type inhibitors.

REFERENCES

- 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.
- 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.
- Lehtonen, J., et al. 2004. Characterization of CA XIII, a novel member of the carbonic anhydrase isozyme family. *J. Biol. Chem.* 279: 2719-2727.
- Kummola, L., et al. 2005. Expression of a novel carbonic anhydrase, CA XIII, in normal and neoplastic colorectal mucosa. *BMC Cancer* 5: 41.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

CA XIII (G-11) is a mouse monoclonal antibody raised against amino acids 32-81 mapping near the N-terminus of CA XIII of human origin.

PRODUCT

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

CA XIII (G-11) is available conjugated to agarose (sc-376753 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376753 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376753 PE), fluorescein (sc-376753 FITC), Alexa Fluor[®] 488 (sc-376753 AF488), Alexa Fluor[®] 546 (sc-376753 AF546), Alexa Fluor[®] 594 (sc-376753 AF594) or Alexa Fluor[®] 647 (sc-376753 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376753 AF680) or Alexa Fluor[®] 790 (sc-376753 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CA XIII (G-11) 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) 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.

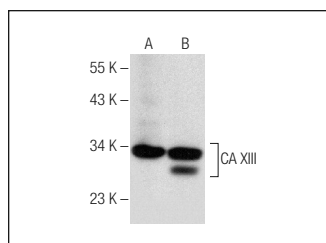
Molecular Weight of CA XIII: 30 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, COLO 205 whole cell lysate: sc-364177 or WiDr cell lysate: sc-24779.

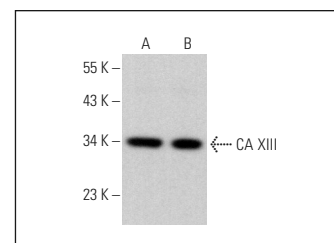
RECOMMENDED SUPPORT REAGENTS

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 XIII (G-11): sc-376753. Western blot analysis of CA XIII expression in WiDr (A) and Hep G2 (B) whole cell lysates.



CA XIII (G-11): sc-376753. Western blot analysis of CA XIII expression in COLO 205 (A) and Caco-2 (B) whole cell lysates.

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 for detailed protocols and support products.