SANTA CRUZ BIOTECHNOLOGY, INC.

CA V siRNA (m): sc-60312

BACKGROUND

Carbonic anhydrases (CAs) are members of a large family of zinc metalloenzymes that catalyze the reversible hydration of carbon dioxide. CAs are involved in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption and the formation of aqueous humor, cerebrospinal fluid, saliva and gastric juice. They show extensive diversity in distribution and in their subcellular localization. The human CA5A gene encodes for the CA V protein which is expressed in the mitochondrial matrix in liver tissues, but can also be detected in many other tissues. In ureagenesis, the CA V protein may be involved in providing bicarbonate to carbamoyl phosphate synthetase.

REFERENCES

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3. Nagao, Y., et al. 1996. Genomic organization of the human gene (CA5) and pseudogene for mitochondrial carbonic anhydrase V and their localization to chromosomes 16q and 16p. Genomics 28: 477-484.
4. Duda, D.M., et al. 2005. Human carbonic anhydrase III: structural and kinetic study of catalysis and proton transfer. Biochemistry 44: 10046-10053.
5. Ishii, Y., et al. 2005. Suppression of carbonic anhydrase III mRNA level by an aryl hydrocarbon receptor ligand in primary cultured hepatocytes of rat. Biol. Pharm. Bull. 28: 1087-1090.
6. Liu, Y.G., et al. 2005. Isolation, sequence analysis and expression profile of a novel swine gene differentially expressed in the Longissimus dorsi muscle tissues from LandracexLarge white cross-combination. Acta Biochim. Biophys. Sin. 37: 186-191.
7. Masquelet, A.C., et al. 2005. The anatomy lesson of Dr Tulp. J. Hand Surg. Br. 30: 379-381.

CHROMOSOMAL LOCATION

Genetic locus: Car5a (mouse) mapping to 8 E1.

PRODUCT

CA V siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CA V shRNA Plasmid (m): sc-60312-SH and CA V shRNA (m) Lentiviral Particles: sc-60312-V as alternate gene silencing products.

For independent verification of CA V (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60312A, sc-60312B and sc-60312C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CA V siRNA (m) is recommended for the inhibition of CA V expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CA V (A-1): sc-398184 is recommended as a control antibody for monitoring of CA V gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CA V gene expression knockdown using RT-PCR Primer: CA V (m)-PR: sc-60312-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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