SANTA CRUZ BIOTECHNOLOGY, INC.

CHP2 siRNA (m): sc-142332

BACKGROUND

CHP2 (Calcineurin B homologous protein 2), also known as hepatocellular carcinoma-associated antigen 520, is a 196 amino acid protein that contains four EF-hand domains and plays a potential role in transmembrane Na^+/H^+ exchange. By binding to and activating NHE-1, CHP2 increases the pH and works to protect cells from serum deprivation-induced death. Though not typically detected in normal tissues, CHP2 is highly expressed in malignantly transformed cells and is therefore considered to be a tumor-associated antigen. Ectopic expression of CHP2 promotes proliferation of HEK293 cells and knockdown of CHP2 mRNA in HepG2 cells inhibits cell proliferation. Like calcineurin B, CHP2 can bind to and stimulate phosphatase activity of calcineurin A and activate the calcineurin/NFAT signaling pathway.

REFERENCES

1. Pang, T., et al. 2002. Expression of calcineurin B homologous protein 2 protects serum deprivation-induced cell death by serum-independent activation of Na^+/H^+ exchanger. J. Biol. Chem. 277: 43771-43777.
2. Inoue, H., et al. 2003. Calcineurin homologous protein isoform 2 (CHP2), Na^+/H^+ exchangers-binding protein, is expressed in intestinal epithelium. Biol. Pharm. Bull. 26: 148-155.
3. Ben Ammar, Y., et al. 2005. Crystallization and preliminary crystallographic analysis of the human calcineurin homologous protein CHP2 bound to the cytoplasmic region of the Na^+/H^+ exchanger NHE1. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 61: 956-958.
4. Ammar, Y.B., et al. 2006. Crystal structure of CHP2 complexed with NHE1-cytosolic region and an implication for pH regulation. EMBO J. 25: 2315-2325.
5. Jin, Q., et al. 2007. Overexpression of CHP2 enhances tumor cell growth, invasion and metastasis in ovarian cancer. In Vivo 21: 593-598.
6. Zaun, H.C., et al. 2008. Calcineurin B homologous protein 3 promotes the biosynthetic maturation, cell surface stability, and optimal transport of the Na^+/H^+ exchanger NHE1 isoform. J. Biol. Chem. 283: 12456-12467.
7. Li, G.D., et al. 2008. CHP2 activates the calcineurin/nuclear factor of activated T cells signaling pathway and enhances the oncogenic potential of HEK293 cells. J. Biol. Chem. 283: 32660-32668.

CHROMOSOMAL LOCATION

Genetic locus: Chp2 (mouse) mapping to 7 F3.

PRODUCT

CHP2 siRNA (m) is a pool of 2 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 CHP2 shRNA Plasmid (m): sc-142332-SH and CHP2 shRNA (m) Lentiviral Particles: sc-142332-V as alternate gene silencing products.

For independent verification of CHP2 (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-142332A and sc-142332B.

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

CHP2 siRNA (m) is recommended for the inhibition of CHP2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CHP2 gene expression knockdown using RT-PCR Primer: CHP2 (m)-PR: sc-142332-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.

PROTOCOLS

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