SANTA CRUZ BIOTECHNOLOGY, INC.

CHP siRNA (m): sc-142330

BACKGROUND

CHP (calcineurin homologous protein), also known as calcium-binding protein p22 and calcineurin B homolog, is a 195 amino acid protein that shares significant sequence similarity to calmodulin and PP2B-Aβ, a calmodulin-regulated protein phosphatase. Required for constituitive membrane traffic, CHP functions as a monomer and is expressed in fetal eye, muscle, kidney, liver, lung, speen and thymus. Decreased phosphorylation of CHP is assoicated with an increase in exchange activity. Overexpression of CHP inhibits GTPase-stimulated NHE-1 activity, impairs nuclear translocation and transcriptional activity of NFAT and inhibits phosphatase acivity of calcineurin in a dose-dependent manner.

REFERENCES

1. Lin, X., et al. 1996. A calcineurin homologous protein inhibits GTPase-stimulated Na-H exchange. Proc. Natl. Acad. Sci. USA 93: 12631-12636.
2. Lin, X., et al. 1999. Inhibition of calcineurin phosphatase activity by a calcineurin B homologous protein. J. Biol. Chem. 274: 36125-36131.
3. Pang, T., et al. 2001. Calcineurin homologous protein as an essential cofactor for Na^+/H^+ exchangers. J. Biol. Chem. 276: 17367-17372.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606988. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Shimizu, T., et al. 2006. Regulation mechanism of Na^+ H^+ exchanger by novel calcium binding proteins. Tanpakushitsu Kakusan Koso 51: 363-369.
6. Mishima, M., et al. 2007. Solution structure of the cytoplasmic region of Na^+/H^+ exchanger 1 complexed with essential cofactor calcineurin B homologous protein 1. J. Biol. Chem. 282: 2741-2751.
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.
8. Di Sole, F., et al. 2009. The calcineurin homologous protein-1 increases Na^+/H^+ -exchanger 3 trafficking via ezrin phosphorylation. J. Am. Soc. Nephrol. 20: 1776-1786.

CHROMOSOMAL LOCATION

Genetic locus: Chp1 (mouse) mapping to 2 E5.

PRODUCT

CHP siRNA (m) is a target-specific 19-25 nt siRNA 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 CHP shRNA Plasmid (m): sc-142330-SH and CHP shRNA (m) Lentiviral Particles: sc-142330-V as alternate gene silencing products.

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

CHP siRNA (m) is recommended for the inhibition of CHP 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 CHP gene expression knockdown using RT-PCR Primer: CHP (m)-PR: sc-142330-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yang, Y., et al. 2012. Wogonin induced calreticulin/annexin A1 exposure dictates the immunogenicity of cancer cells in a PERK/Akt dependent manner. PLoS ONE 7: e50811.

RESEARCH USE

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