

CREB3L3 siRNA (h): sc-72999

BACKGROUND

CREB3L3 (cAMP-responsive element-binding protein 3-like protein 3), also known as CREBH or HYST1481, is a 461 amino acid single-pass type II membrane protein that localizes to the endoplasmic reticulum (ER) and, in response to ER stress, is cleaved and translocated to the nucleus. Expressed exclusively in liver, CREB3L3 functions as a transcription factor that, during ER stress, is thought to activate genes that are involved in both the unfolded protein response and the acute phase response (APR). Additionally, CREB3L3 is underexpressed in hepatocellular carcinoma, suggesting a possible role as a tumor suppressor. CREB3L3 functions as a dimer and contains one leucine zipper domain, a KDEL-like sequence and a bZIP domain, through which it conveys its DNA binding ability. Three isoforms of CREB3L3 exist due to alternative splicing events.

REFERENCES

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2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611998. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Chin, K.T., Zhou, H.J., Wong, C.M., Lee, J.M., Chan, C.P., Qiang, B.Q., Yuan, J.G., Ng, I.O. and Jin, D.Y. 2005. The liver-enriched transcription factor CREBH is a growth suppressor protein underexpressed in hepatocellular carcinoma. *Nucleic Acids Res.* 33: 1859-1873.
4. Zhang, K., Shen, X., Wu, J., Sakaki, K., Saunders, T., Rutkowski, D.T., Back, S.H. and Kaufman, R.J. 2006. Endoplasmic reticulum stress activates cleavage of CREBH to induce a systemic inflammatory response. *Cell* 124: 587-599.
5. Panagopoulos, I., Möller, E., Dahlen, A., Isaksson, M., Mandahl, N., Vlamis-Gardikas, A. and Mertens, F. 2007. Characterization of the native CREB3L2 transcription factor and the FUS/CREB3L2 chimera. *Genes Chromosomes Cancer* 46: 181-191.

CHROMOSOMAL LOCATION

Genetic locus: CREB3L3 (human) mapping to 19p13.3.

PRODUCT

CREB3L3 siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CREB3L3 shRNA Plasmid (h): sc-72999-SH and CREB3L3 shRNA (h) Lentiviral Particles: sc-72999-V as alternate gene silencing products.

For independent verification of CREB3L3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72999A, sc-72999B and sc-72999C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CREB3L3 siRNA (h) is recommended for the inhibition of CREB3L3 expression in human 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 μ M in 66 μ l. 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

CREB3L3 (G-11): sc-377156 is recommended as a control antibody for monitoring of CREB3L3 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 CREB3L3 gene expression knockdown using RT-PCR Primer: CREB3L3 (h)-PR: sc-72999-PR (20 μ l). 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.