SANTA CRUZ BIOTECHNOLOGY, INC.

CREBL2 siRNA (h): sc-96241

BACKGROUND

Cyclic AMP-regulated gene expression frequently involves a DNA element designated the cAMP-regulated enhancer (CRE). Many transcription factors bind to this element, including the protein CREB, which is activated as a result of phosphorylation by protein kinase A. It has been shown that protein kinase A-mediated CREB phosphorylation results in its binding to a nuclear protein designated CBP (for CREB-binding protein). These findings suggest that CBP has many of the properties expected of a CREB co-activator. Containing a region with 41% homology to CREB-binding protein (CBP), CREBL2 (cAMP-responsive element-binding protein-like 2) is a 120 amino acid nuclear protein that belongs to the bZIP family and ATF subfamily. A potential tumor suppressor, CREBL2 regulates the cell cycle and contains one bZIP domain with which it binds DNA. CREBL2 undergoes post-translational phosphorylation by AMPK.

REFERENCES

1. Chrivia, J.C., et al. 1993. Phosphorylated CREB binds specifically to the nuclear protein CBP. Nature 365: 855-859.
2. Arany, Z., et al. 1994. E1A-associated p300 and CREB-associated CBP belong to a conserved family of coactivators. Cell 77: 799-800.
3. Kwok, R.P., et al. 1994. Nuclear protein CBP is a coactivator for the transcription factor CREB. Nature 370: 223-226.
4. Hoornaert, I., et al. 1998. CREBL2, a novel transcript from the chromosome 12 region flanked by ETV6 and CDKN1B. Genomics 51: 154-157.
5. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 603476. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Karamouzis, M.V., et al. 2007. Roles of CREB-binding protein (CBP)/p300 in respiratory epithelium tumorigenesis. Cell Res. 17: 324-332.
7. Miyabayashi, T., et al. 2007. Wnt/β-catenin/CBP signaling maintains long-term murine embryonic stem cell pluripotency. Proc. Natl. Acad. Sci. USA 104: 5668-5673.
8. Thomson, D.M., et al. 2008. AMP-activated protein kinase phosphorylates transcription factors of the CREB family. J. Appl. Physiol. 104: 429-438.

CHROMOSOMAL LOCATION

Genetic locus: CREBL2 (human) mapping to 12p13.2.

PRODUCT

CREBL2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CREBL2 shRNA Plasmid (h): sc-96241-SH and CREBL2 shRNA (h) Lentiviral Particles: sc-96241-V as alternate gene silencing products.

For independent verification of CREBL2 (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-96241A, sc-96241B and sc-96241C.

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

CREBL2 siRNA (h) is recommended for the inhibition of CREBL2 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 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 CREBL2 gene expression knockdown using RT-PCR Primer: CREBL2 (h)-PR: sc-96241-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.