SANTA CRUZ BIOTECHNOLOGY, INC.

CNBP siRNA (h): sc-60419

BACKGROUND

Cellular nucleic acid binding protein (CNBP) is a highly conserved RNA-binding protein that plays a fundamental biological role in eukaryotic cells by increasing heterologous protein production. CNBP localizes to the nucleus of cells and functions in the brain, specifically in the anterior visceral endoderm and, subsequently, in the anterior definitive endoderm, anterior neuroectoderm, anterior mesendoderm, headfolds and forebrain. CNBP is necessary for the forebrain induction and specification, and mutations in the CNBP gene lead to severe forebrain truncation as well as various craniofacial defects due to a lack of proper morphogenetic movements of the anterior visceral endoderm during the pre-gastrulation stage. Overexpression of CNBP activates cell proliferation and stimulates the activity of the c-Myc promoter.

REFERENCES

1. Lusis, A.J., et al. 1991. Mapping of the gene for CNBP, a finger protein, to human chromosome 3q13.3-q24. Genomics 8: 411-444.
2. Yasuda, J., et al. 1995. Cloning and characterization of rat cellular nucleic acid binding protein (CNBP) cDNA. DNA Res. 2: 45-49.
3. Pellizzoni, L., et al. 1998. Involve-ment of the *Xenopus laevis* Ro60 autoantigen in the alternative interaction of La and CNBP proteins with the 5'UTR of L4 ribosomal protein mRNA. J. Mol. Biol. 281: 593-608.
4. De Dominicis, A., et al. 2000. cDNA cloning and developmental expression of cellular nucleic acid-binding protein (CNBP) gene in *Xenopus laevis*. Gene 241: 35-43.
5. Mamo, W., et al. 2000. Protection induced in mice vaccinated with recombinant collagen-binding protein (CNBP) and α-toxoid against intramammary infection with *Staphylococcus aureus*. Microbiol. Immunol. 44: 381-384.
6. Schlatter, S. and Fussenegger, M. 2002. Novel CNBP- and La-based translation control systems for mammalian cells. Biotechnol. Bioeng. 81: 1-12.
7. Chen, W., et al. 2003. The zinc-finger protein CNBP is required for forebrain formation in the mouse. Development 130: 1367-1379.
8. Liu, J.X. and Gui, J.F. 2005. Expression pattern and developmental behaviour of cellular nucleic acid-binding protein (CNBP) during folliculogenesis and oogenesis in fish. Gene 356: 181-192.

CHROMOSOMAL LOCATION

Genetic locus: CNBP (human) mapping to 3q21.3.

PRODUCT

CNBP 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 CNBP shRNA Plasmid (h): sc-60419-SH and CNBP shRNA (h) Lentiviral Particles: sc-60419-V as alternate gene silencing products.

For independent verification of CNBP (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-60419A, sc-60419B and sc-60419C.

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

CNBP siRNA (h) is recommended for the inhibition of CNBP 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.

GENE EXPRESSION MONITORING

CNBP (H-7): sc-515387 is recommended as a control antibody for monitoring of CNBP 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 CNBP gene expression knockdown using RT-PCR Primer: CNBP (h)-PR: sc-60419-PR (20 µl, 446 bp). 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.