SANTA CRUZ BIOTECHNOLOGY, INC.

CGBP siRNA (m): sc-35056

BACKGROUND

The human genome contains discrete clusters of unmethylated CpG dinucleotides, called CpG islands, which contribute to the modulation of gene expression by binding transcription factors. Human CpG binding protein (CGBP), detected in K-562 cells, is a widely expressed member of CpG binding proteins that requires the CpG dinucleotide to bind DNA. CGBP binds specifically to unmethylated CpG motifs and functions as a transcriptional activator. The CXXC domain of CGBP is conserved in DNA methyltransferase, human trithorax, and methyl-CpG binding protein (MBP), and is involved in DNA-binding. CGBP also contains several domains implicated in protein-protein interactions, such as a coiled-coil domain, and two PHD finger domains, the function of which remains to be determined.

REFERENCES

1. Pfeifer, G.P., et al. 1990. *In vivo* footprint and methylation analysis by PCR-aided genomic sequencing: comparison of active and inactive X chromosomal DNA at the CpG island and promoter of human PGK-1. Genes Dev. 4: 1277-1287.
2. Somma, M.P., et al. 1991. The housekeeping promoter from the mouse CpG island HTF9 contains multiple protein-binding elements that are functionally redundant. Nucleic Acids Res. 19: 2817-2824.
3. Ma, Q., et al. 1993. Analysis of the murine ALL-1 gene reveals conserved domains with human ALL-1 and identifies a motif shared with DNA methyltransferase. Proc. Natl. Acad. Sci. USA 90: 6350-6354.
4. Bestor, T.H., et al. 1994. DNA methyltransferases. Curr. Opin. Cell Biol. 6: 380-389.
5. Macleod, D., et al. 1998. An alternative promoter in the mouse major histocompatibility complex class III-A gene: implications for the origin of CpG islands. Mol. Cell. Biol. 18: 4433-4443.
6. Shin Voo, K., et al. 2000. Cloning of a mammalian trancriptional activator that binds unmethylated CpG motifs and shares a CXXC domain with DNA methyltransferase, human trithorax, and methyl-CpG binding domain protein-1. Mol. Cell. Biol. 20: 2108-2121.

CHROMOSOMAL LOCATION

Genetic locus: Cxxc1 (mouse) mapping to 18 E2.

PRODUCT

CGBP siRNA (m) 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 CGBP shRNA Plasmid (m): sc-35056-SH and CGBP shRNA (m) Lentiviral Particles: sc-35056-V as alternate gene silencing products.

For independent verification of CGBP (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-35056A, sc-35056B and sc-35056C.

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

CGBP shRNA Plasmid (m) is recommended for the inhibition of CGBP 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.

GENE EXPRESSION MONITORING

CGBP (35): sc-136419 is recommended as a control antibody for monitoring of CGBP 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 CGBP gene expression knockdown using RT-PCR Primer: CGBP (m)-PR: sc-35056-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.