SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-1/2/3 siRNA (m): sc-270031

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

High mobility group (HMG) proteins 1 and 2 are ubiquitous non-histone components of chromatin. Evidence suggests that the binding of HMG proteins to DNA induces alterations in the DNA architecture including DNA bending and unwinding of the helix. HMG proteins synergize with Oct-2, members of the NFκB family, ATF-2 and c-Jun to activate transcription. Other studies indicate that phosphorylation of HMG protein is required to stimulate the transcriptional activity of the protein. Human HMG-1 and HMG-2 both contain two DNA-binding domains, termed HMG boxes. HMG proteins bind single-stranded DNA but induce conformational changes in double-stranded DNA alone.

REFERENCES

1. Wen, L., et al. 1989. A human placental cDNA clone that encodes nonhistone chromosomal protein HMG-1. Nucleic Acids Res. 17: 1197-1214.
2. Bustin, M., et al. 1990. Structural features of the HMG chromosomal proteins and their genes. Biochim. Biophys. Acta 1049: 231-243.
3. Shirakawa, H. and Yoshida, M. 1992. Structure of a gene coding for human HMG-2 protein. J. Biol. Chem. 267: 6641-6635.
4. Nissen, M.S. and Reeves, R. 1995. Changes in superhelicity are introduced into closed circular DNA by binding of HMG-I(Y). J. Biol. Chem. 270: 4355-4360.
5. Wang, D.Z., et al. 1995. Interleukin 4-inducible phosphorylation of HMG-I(Y) is inhibited by rapamycin. J. Biol. Chem. 270: 22924-22932.
6. Falvo, J.V., et al. 1995. Reversal of intrinsic DNA bends in the IFN-β gene enhancer by transcription factors and the architectural protein HMG-I(Y). Cell 83: 1101-1111.
7. Wood, L.D., et al. 1995. HMG-I(Y) and Sp1 in addition to NFκB regulate transcription of the MGSA/GRO a gene. Nucleic Acids Res. 23: 4210-4219.
8. Love, J.J., et al. 1995. Structural basis for DNA bending by the architectural transcription factor LEF-1. Nature 376: 791-795.

PRODUCT

HMG-1/2/3 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 HMG-1/2/3 shRNA Plasmid (m): sc-270031-SH and HMG-1/2/3 shRNA (m) Lentiviral Particles: sc-270031-V as alternate gene silencing 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

HMG-1/2/3 siRNA (m) is recommended for the inhibition of HMG-1/2/3 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

HMG-2 (D-3): sc-271689 is recommended as a control antibody for monitoring of HMG-1/2/3 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HMG-1/2/3 gene expression knockdown using RT-PCR Primer: HMG-1/2/3 (m)-PR: sc-270031-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. Yu, Z., et al. 2013. Refractoriness of interferon-β signaling through NOD1 pathway in mouse respiratory epithelial cells using the anticancer xanthone compound. World J. Biol. Chem. 4: 18-29.

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.