SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-1 siRNA (m): sc-37983

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.

CHROMOSOMAL LOCATION

Genetic locus: Hmgb1 (mouse) mapping to 5 G3.

PRODUCT

HMG-1 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 HMG-1 shRNA Plasmid (m): sc-37983-SH and HMG-1 shRNA (m) Lentiviral Particles: sc-37983-V as alternate gene silencing products.

For independent verification of HMG-1 (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-37983A, sc-37983B and sc-37983C.

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 siRNA (m) is recommended for the inhibition of HMG-1 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-1 (HAP46.5): sc-56698 is recommended as a control antibody for monitoring of HMG-1 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 HMG-1 gene expression knockdown using RT-PCR Primer: HMG-1 (m)-PR: sc-37983-PR (20 µl, 548 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hayakawa, K., et al. 2013. High-mobility group box 1 from reactive astrocytes enhances the accumulation of endothelial progenitor cells in damaged white matter. J. Neurochem. 125: 273-280.
2. McClellan, S., et al. 2015. High-mobility group box 1: a novel target for treatment of *Pseudomonas aeruginosa* keratitis. J. Immunol. 194: 1776-1787.
3. Choi, J.Y., et al. 2017. High-mobility group box-1 as an autocrine trophic factor in white matter stroke. Proc. Natl. Acad. Sci. USA 114: E4987-E4995.
4. Ma, S., et al. 2017. A long noncoding RNA, lincRNA-Tnfaip3, acts as a coregulator of NFκB to modulate inflammatory gene transcription in mouse macrophages. FASEB J. 31: 1215-1225.
5. Zhang, P., et al. 2017. HMGB1 mediates *Aspergillus fumigatus*-induced inflammatory response in alveolar macrophages of COPD mice via activating MyD88/NFκB and syk/PI3K signalings. Int. Immunopharmacol. 53: 125-132.
6. Zhang, B., et al. 2017. IL-17A enhances microglial response to OGD by regulating p53 and PI3K/Akt pathways with involvement of ROS/HMGB1. Front. Mol. Neurosci. 10: 271.
7. Wang, Y., et al. 2019. Induction of inflammatory responses in splenocytes by exosomes released from intestinal epithelial cells following *Cryptosporidium parvum* infection. Infect. Immun. 87: e00705-18.
8. Zhou, M., et al. 2019. The modulation of regulatory T cells via HMGB1/PTEN/β-catenin axis in LPS induced acute lung injury. Front. Immunol. 10: 1612.

RESEARCH USE

For research use only, not for use in diagnostic procedures.