SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-20A siRNA (m): sc-75268

BACKGROUND

High mobility group (HMG) proteins 1 and 2 are ubiquitous non-histone components of chromatin. The binding of HMG proteins to the minor groove of AT-rich DNA sequences induces alterations in the DNA architecture, including DNA bending and unwinding of the helix. While HMG proteins do not stimulate initiation of transcription, they do enhance the binding of other transcription factors, such as Oct-2, members of the NFκB family, ATF-2 and c-Jun, to activate transcription. HMG-20A (high-mobility group 20A), also known as HMGX1 or HMGXB1, is a 347 amino acid protein that localizes to the nucleus and contains one HMG box DNA-binding domain. Expressed ubiquitously, HMG-20A functions as an inhibitor of BRAF35 and, via its association with DNA, plays a role in neuronal differentiation and may also mediate the methylation of Histone H3. Multiple isoforms of HMG-20A exist due to alternative splicing events.

REFERENCES

1. Bustin, M., et al. 1990. Structural features of the HMG chromosomal proteins and their genes. Biochim. Biophys. Acta 1049: 231-243.
2. Sumoy, L., et al. 2000. HMG20A and HMG20B map to human chromosomes 15q24 and 19p13.3 and constitute a distinct class of HMG-box genes with ubiquitous expression. Cytogenet. Cell Genet. 88: 62-67.
3. Dailey, L., et al. 2001. Coevolution of HMG domains and homeodomains and the generation of transcriptional regulation by Sox/POU complexes. J. Cell. Physiol. 186: 315-328.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605534. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Wynder, C., et al. 2005. Recruitment of MLL by HMG-domain protein iBRAF promotes neural differentiation. Nat. Cell Biol. 7: 1113-1117.
6. Hsiao, J.C., et al. 2006. A poxvirus host range protein, CP77, binds to a cellular protein, HMG20A, and regulates its dissociation from the vaccinia virus genome in CHO-K1 cells. J. Virol. 80: 7714-7728.

CHROMOSOMAL LOCATION

Genetic locus: Hmg20a (mouse) mapping to 9 B.

PRODUCT

HMG-20A 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-20A shRNA Plasmid (m): sc-75268-SH and HMG-20A shRNA (m) Lentiviral Particles: sc-75268-V as alternate gene silencing products.

For independent verification of HMG-20A (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-75268A, sc-75268B and sc-75268C.

RESEARCH USE

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

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-20A siRNA (m) is recommended for the inhibition of HMG-20A 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-20A (D-5): sc-393028 is recommended as a control antibody for monitoring of HMG-20A 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-20A gene expression knockdown using RT-PCR Primer: HMG-20A (m)-PR: sc-75268-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.