SANTA CRUZ BIOTECHNOLOGY, INC.

Hus1B siRNA (h): sc-62482

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The Power to Question

BACKGROUND

Hus1B (checkpoint protein Hus1B) is a 276 amino acid protein encoded by the human gene HUS1B. Hus1B is a paralog of the human cell cycle checkpoint gene HUS1. Hus1B is expressed variably in many human tissues, and the tissue-specific levels observed parallel those for Hus1. A Hus1-Rad1-Rad9 protein complex is thought to form a proliferating cell nuclear antigen (PCNA)-like structure, important for cell cycle checkpoint function. However, Hus1B directly interacts with Rad1, but not Rad9 or Hus1, whereas Hus1 can bind Rad1, Rad9, and another molecule of Hus1, suggesting that Hus1B cannot simply substitute for Hus1 in the complex. Hus1B is less conserved evolutionarily than Hus1 and overexpression of Hus1B, but not Hus1, in human cells induces clonogenic cell death. It is believed that Hus1B and Hus1 have distinct but related roles in regulating cell cycle checkpoints and genomic integrity.

REFERENCES

1. Weiss, R.S., Enoch, T. and Leder, P. 2000. Inactivation of mouse Hus1 results in genomic instability and impaired responses to genotoxic stress. Genes Dev. 14: 1886-1898.
2. Hang, H., Zhang, Y., Wang, C. and Lieberman, H.B. 2002. Identification and characterization of a paralog of human cell cycle checkpoint gene HUS1. Genomics 79: 487-492.
3. Weiss, R.S., Leder, P. and Vaziri, C. 2003. Critical role for mouse Hus1 in an S-phase DNA damage cell cycle checkpoint. Mol. Cell. Biol. 23: 791-803.
4. Hopkins, K.M., Wang, X., Berlin, A., Hang, H., Thaker, H.M. and Lieberman, H.B. 2003. Expression of mammalian paralogues of HRAD9 and Mrad9 checkpoint control genes in normal and cancerous testicular tissue. Cancer Res. 63: 5291-5298.
5. Levitt, P.S., Liu, H., Manning, C. and Weiss, R.S. 2005. Conditional inactivation of the mouse Hus1 cell cycle checkpoint gene. Genomics 86: 212-224.
6. Friedrich-Heineken, E., Toueille, M., Tännler, B., Bürki, C., Ferrari, E., Hottiger, M.O. and Hübscher, U. 2005. The two DNA clamps Rad9/Rad1/Hus1 complex and proliferating cell nuclear antigen differentially regulate flap endonuclease 1 activity. J. Mol. Biol. 353: 980-989.

CHROMOSOMAL LOCATION

Genetic locus: HUS1B (human) mapping to 6p25.3.

PRODUCT

Hus1B 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 Hus1B shRNA Plasmid (h): sc-62482-SH and Hus1B shRNA (h) Lentiviral Particles: sc-62482-V as alternate gene silencing products.

For independent verification of Hus1B (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-62482A, sc-62482B and sc-62482C.

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

Hus1B siRNA (h) is recommended for the inhibition of Hus1B 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Hus1B gene expression knockdown using RT-PCR Primer: Hus1B (h)-PR: sc-62482-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.