

HEMK2 siRNA (h): sc-91423

BACKGROUND

HEMK2 (HemK methyltransferase family member 2), also known as N6AMT1 (N-6 adenine-specific DNA methyltransferase 1), MTQ2 or N6AMT, is a 214 amino acid protein that belongs to the methyltransferase superfamily and exists as multiple alternatively spliced isoforms. The gene encoding HEMK2 maps to human chromosome 21, which houses approximately 300 genes and comprises nearly 1.5% of the human genome. Chromosome 21-associated disorders include Alzheimer's disease, amyotrophic lateral sclerosis and, most notably, Down syndrome (also known as trisomy 21).

REFERENCES

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2. Mao, R., et al. 2005. Primary and secondary transcriptional effects in the developing human Down syndrome brain and heart. *Genome Biol.* 6: R107.
3. Robakis, N.K. 2006. The discovery and mapping to chromosome 21 of the Alzheimer's amyloid gene: history revised. *J. Alzheimers Dis.* 10: 453-455.
4. Ait Yahya-Graison, E., et al. 2007. Classification of human chromosome 21 gene-expression variations in Down syndrome: impact on disease phenotypes. *Am. J. Hum. Genet.* 81: 475-491.
5. Peterson, L.F., et al. 2007. Acute myeloid leukemia with the 8q22;21q22 translocation: secondary mutational events and alternative t(8;21) transcripts. *Blood* 110: 799-805.
6. Ryoo, S.R., et al. 2007. DYRK1A-mediated hyperphosphorylation of Tau. A functional link between Down syndrome and Alzheimer's disease. *J. Biol. Chem.* 282: 34850-34857.
7. Figaro, S., et al. 2008. HemK2 protein, encoded on human chromosome 21, methylates translation termination factor eRF1. *FEBS Lett.* 582: 2352-2356.

CHROMOSOMAL LOCATION

Genetic locus: N6AMT1 (human) mapping to 21q21.3.

PRODUCT

HEMK2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HEMK2 shRNA Plasmid (h): sc-91423-SH and HEMK2 shRNA (h) Lentiviral Particles: sc-91423-V as alternate gene silencing products.

For independent verification of HEMK2 (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-91423A, sc-91423B and sc-91423C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

HEMK2 siRNA (h) is recommended for the inhibition of HEMK2 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 μ M in 66 μ l. 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

HEMK2 (1C4): sc-517120 is recommended as a control antibody for monitoring of HEMK2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 HEMK2 gene expression knockdown using RT-PCR Primer: HEMK2 (h)-PR: sc-91423-PR (20 μ l). 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.