SANTA CRUZ BIOTECHNOLOGY, INC.

Metaxin 1 siRNA (m): sc-149375

BACKGROUND

Metaxin 1, also known as Mtx or Gcap6, is a 317 amino acid member of the Metaxin protein family. Localized to the mitochondrion outer membrane, Metaxin 1 is involved in the transport of proteins into the mitochondrion. Metaxin 1 is also believed to be essential for embryonic development. Metaxin 1 has been found to interact with other Metaxin family members, including Metaxin 2. Although ubiquitously expressed, highest levels of Metaxin 1 are present in kidney. The gene that encodes Metaxin 1 maps to human chromosome 1, which is the largest human chromosome, spanning about 260 million base pairs and making up 8% of the human genome.

REFERENCES

1. Long, G.L., et al. 1996. Structure and organization of the human metaxin gene (MTX) and pseudogene. Genomics 33: 177-184.
2. Collins, M. and Bornstein, P. 1996. SP1-binding elements, within the common metaxin-thrombospondin 3 intergenic region, participate in the regulation of the metaxin gene. Nucleic Acids Res. 24: 3661-3669.
3. Armstrong, L.C., et al. 1997. Metaxin is a component of a preprotein import complex in the outer membrane of the mammalian mitochondrion. J. Biol. Chem. 272: 6510-6518.
4. Mootha, V.K., et al. 2003. Integrated analysis of protein composition, tissue diversity, and gene regulation in mouse mitochondria. Cell 115: 629-640.
5. Da Cruz, S., et al. 2003. Proteomic analysis of the mouse liver mitochondrial inner membrane. J. Biol. Chem. 278: 41566-41571.
6. Zambrowicz, B.P., et al. 2003. Wnk1 kinase deficiency lowers blood pressure in mice: a gene-trap screen to identify potential targets for therapeutic intervention. Proc. Natl. Acad. Sci. USA 100: 14109-14114.
7. Karim, S.A., et al. 2004. A physical map of the genomic region on mouse chromosome 3 containing the hindshaker (hsh) mutation. Genomics 83: 225-230.
8. Pagliarini, D.J., et al. 2008. A mitochondrial protein compendium elucidates complex I disease biology. Cell 134: 112-123.

CHROMOSOMAL LOCATION

Genetic locus: Mtx1 (mouse) mapping to 3 F1.

PRODUCT

Metaxin 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 Metaxin 1 shRNA Plasmid (m): sc-149375-SH and Metaxin 1 shRNA (m) Lentiviral Particles: sc-149375-V as alternate gene silencing products.

For independent verification of Metaxin 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-149375A, sc-149375B and sc-149375C.

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

Metaxin 1 siRNA (m) is recommended for the inhibition of Metaxin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Metaxin 1 gene expression knockdown using RT-PCR Primer: Metaxin 1 (m)-PR: sc-149375-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.