



Metaxin 1 siRNA (h): sc-88250

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

- Long, G.L., et al. 1996. Structure and organization of the human metaxin gene (MTX) and pseudogene. *Genomics* 33: 177-184.
- 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.
- 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.
- Mootha, V.K., et al. 2003. Integrated analysis of protein composition, tissue diversity, and gene regulation in mouse mitochondria. *Cell* 115: 629-640.
- Da Cruz, S., et al. 2003. Proteomic analysis of the mouse liver mitochondrial inner membrane. *J. Biol. Chem.* 278: 41566-41571.

CHROMOSOMAL LOCATION

Genetic locus: MTX1 (human) mapping to 1q22.

PRODUCT

Metaxin 1 siRNA (h) is a pool of 2 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 Metaxin 1 shRNA Plasmid (h): sc-88250-SH and Metaxin 1 shRNA (h) Lentiviral Particles: sc-88250-V as alternate gene silencing products.

For independent verification of Metaxin 1 (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-88250A and sc-88250B.

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

Metaxin 1 siRNA (h) is recommended for the inhibition of Metaxin 1 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

Metaxin 1 (G-7): sc-514469 is recommended as a control antibody for monitoring of Metaxin 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-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 Metaxin 1 gene expression knockdown using RT-PCR Primer: Metaxin 1 (h)-PR: sc-88250-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Zhao, Y., et al. 2021. Metaxins are core components of mitochondrial transport adaptor complexes. *Nat. Commun.* 12: 83.
- Abudu, Y.P., et al. 2021. SAMM50 acts with p62 in piecemeal basal- and OXPHOS-induced mitophagy of SAM and MICOS components. *J. Cell Biol.* 220: e202009092.
- Coscia, S.M., et al. 2023. Myo19 tethers mitochondria to endoplasmic reticulum-associated actin to promote mitochondrial fission. *J. Cell Sci.* 136: jcs260612.

RESEARCH USE

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