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- Trockeneiszuschlag
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SANTA CRUZ BIOTECHNOLOGY, INC.

MPST siRNA (m): sc-149542

BACKGROUND

MPST (mercaptopyruvate sulfurtransferase), also known as MST or TST2, is a 297 amino acid protein that localizes to the cytoplasm and contains two rhodanese domains. Existing as a monomer or as a dilsulfide-linked homodimer, MPST functions to catalyze the transfer of a sulfur ion to select thiol compounds, such as cyanide, and is thought to be involved in cyanide detoxification and cysteine degradation. MPST deficiency may be associated with the pathogenesis of the rare disorder mercaptolactate-cysteine disulfiduria (MCDU). The gene encoding MPST maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, neurofibromatosis type 2, autism and schizophrenia.

REFERENCES

1. Pallini, R., et al. 1991. Cloning and sequence analysis of the human liver rhodanese: comparison with the bovine and chicken enzymes. Biochem. Biophys. Res. Commun. 180: 887-893.
2. Aita, N., et al. 1997. Cloning and expression of human liver rhodanese cDNA. Biochem. Biophys. Res. Commun. 231: 56-60.
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4. Billaut-Laden, I., et al. 2006. Evidence for a functional genetic polymorphism of the human mercaptopyruvate sulfurtransferase (MPST), a cyanide detoxification enzyme. Toxicol. Lett. 165: 101-111.
5. Shibuya, N., et al. 2008. 3-Mercaptopyruvate sulfurtransferase produces hydrogen sulfide and bound sulfane sulfur in the brain. Antioxid. Redox Signal. 11: 703-714.
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CHROMOSOMAL LOCATION

Genetic locus: Mpst (mouse) mapping to 15 E1.

PRODUCT

MPST siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MPST shRNA Plasmid (m): sc-149542-SH and MPST shRNA (m) Lentiviral Particles: sc-149542-V as alternate gene silencing products.

For independent verification of MPST (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-149542A and sc-149542B.

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

MPST siRNA (m) is recommended for the inhibition of MPST 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

MPST (D-8): sc-374326 is recommended as a control antibody for monitoring of MPST 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 MPST gene expression knockdown using RT-PCR Primer: MPST (m)-PR: sc-149542-PR (20 µl, 552 bp). 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.