SANTA CRUZ BIOTECHNOLOGY, INC.

MSH4 siRNA (m): sc-75831

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The Power to Question

BACKGROUND

MSH4 (mutS homolog 4) is a 936 amino acid protein that is expressed specifically in ovary and testis and belongs to the DNA mismatch repair mutS family. Existing as a heterooligomer with MSH5, MSH4 is involved in meiotic recombination and is specifically required for the proper segregation and reciprocal recombination of homologous chromosomes at meiosis. The gene encoding MSH4 maps to human chromosome 1p31.1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

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2. Kneitz, B., et al. 2000. MutS homolog 4 localization to meiotic chromosomes is required for chromosome pairing during meiosis in male and female mice. Genes Dev. 14: 1085-1097.
3. Santucci-Darmanin, S., et al. 2002. The DNA mismatch-repair MLH3 protein interacts with MSH4 in meiotic cells, supporting a role for this MutL homolog in mammalian meiotic recombination. Hum. Mol. Genet. 11: 1697-1706.
4. Her, C., et al. 2003. Human MutS homologue MSH4 physically interacts with von Hippel-Lindau tumor suppressor-binding protein 1. Cancer Res. 63: 865-872.
5. Snowden, T., et al. 2004. hMSH4-hMSH5 recognizes Holliday Junctions and forms a meiosis-specific sliding clamp that embraces homologous chromosomes. Mol. Cell 15: 437-451.
6. Yi, W., et al. 2005. Two variants of MutS homolog hMSH5: prevalence in humans and effects on protein interaction. Biochem. Biophys. Res. Commun. 332: 524-532.

CHROMOSOMAL LOCATION

Genetic locus: Msh4 (mouse) mapping to 3 H3.

PRODUCT

MSH4 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 MSH4 shRNA Plasmid (m): sc-75831-SH and MSH4 shRNA (m) Lentiviral Particles: sc-75831-V as alternate gene silencing products.

For independent verification of MSH4 (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-75831A, sc-75831B and sc-75831C.

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

MSH4 siRNA (m) is recommended for the inhibition of MSH4 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 MSH4 gene expression knockdown using RT-PCR Primer: MSH4 (m)-PR: sc-75831-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.