SANTA CRUZ BIOTECHNOLOGY, INC.

MISP siRNA (m): sc-140517

BACKGROUND

Proper mitotic spindle assembly during cell division and chromosome segregation is crucial for organism development. Incorrect positioning of the mitotic spindle may cause cell death or lead to various debilitating diseases. MISP (mitotic spindle positioning), also known as C19orf21, is a 679 amino acid Actin cytoskeleton and focal adhesions associated protein that is involved in mitotic spindle orientation and mitotic progression. Consisting of multiple Actin-binding sites, MISP is suggested to regulate the distribution of Dynactin at the cell cortex, thereby stabilizing cortical and astral microtubule attachments required for proper mitotic spindle positioning. Dynactin is a multisubunit complex and a required cofactor for most, or all, of the cellular processes powered by the microtubule-based motor cytoplasmic dynein. MISP is encoded by a gene located on human chromosome 19p13.3.

REFERENCES

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2. Stevermann, L. and Liakopoulos, D. 2012. Molecular mechanisms in spindle positioning: structures and new concepts. Curr. Opin. Cell Biol. 24: 816-824.
3. Noatynska, A., Gotta, M. and Meraldi, P. 2012. Mitotic spindle (DIS)orientation and DISease: cause or consequence? J. Cell Biol. 199: 1025-1035.
4. Maier, B., Kirsch, M., Anderhub, S., Zentgraf, H. and Krämer, A. 2013. The novel Actin/focal adhesion-associated protein MISP is involved in mitotic spindle positioning in human cells. Cell Cycle 12: 1457-1471.
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6. Zhu, M., Settele, F., Kotak, S., Sanchez-Pulido, L., Ehret, L., Ponting, C.P., Gönczy, P. and Hoffmann, I. 2013. MISP is a novel Plk1 substrate required for proper spindle orientation and mitotic progression. J. Cell Biol. 200: 773-787.
7. Kumeta, M., Gilmore, J.L., Umeshima, H., Ishikawa, M., Kitajiri, S., Horigome, T., Kengaku, M. and Takeyasu, K. 2014. Caprice/MISP is a novel F-Actin bundling protein critical for Actin-based cytoskeletal reorganizations. Genes Cells 19: 338-349.
8. SWISS-PROT/TrEMBL (Q8IVT2). World Wide Web URL: http://www.uniprot.org/uniprot/Q8IVT2

CHROMOSOMAL LOCATION

Genetic locus: Misp (mouse) mapping to 10 C1.

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.

PRODUCT

MISP 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 MISP shRNA Plasmid (m): sc-140517-SH and MISP shRNA (m) Lentiviral Particles: sc-140517-V as alternate gene silencing products.

For independent verification of MISP (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-140517A, sc-140517B and sc-140517C.

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

MISP siRNA (m) is recommended for the inhibition of MISP 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 MISP gene expression knockdown using RT-PCR Primer: MISP (m)-PR: sc-140517-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.