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SANTA CRUZ BIOTECHNOLOGY, INC.

MASTL siRNA (m): sc-149290

BACKGROUND

MASTL (microtubule associated serine/threonine kinase-like), also known as GW, THC2 or serine/threonine-protein kinase greatwall, is an 879 amino acid serine/threonine kinase regulates mitosis entry and maintenance. Localizing to cytoplasm, nucleus and cytoskeleton, MASTL belongs to the AGC Ser/Thr protein kinase family and protein kinase superfamily. MASTL undergoes alternative splicing events to produce three isoforms and is phosphorylated post-translationally by Cdc2 p34. The gene encoding MASTL maps to human chromosome 10, which comprises approximately 4.5% of total DNA in cells and encodes nearly 1,200 genes. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromatic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

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2. Wang, B., et al. 2008. Evaluation of the low-specificity protease elastase for large-scale phosphoproteome analysis. Anal. Chem. 80: 9526-9533.
3. Cantin, G.T., et al. 2008. Combining protein-based IMAC, peptide-based IMAC, and MudPIT for efficient phosphoproteomic analysis. J. Proteome Res. 7: 1346-1351.
4. Daub, H., et al. 2008. Kinase-selective enrichment enables quantitative phosphoproteomics of the kinome across the cell cycle. Mol. Cell 31: 438-448.
5. Vigneron, S., et al. 2009. Greatwall maintains mitosis through regulation of PP2A. EMBO J. 28: 2786-2793.
6. Castilho, P.V., et al. 2009. The M phase kinase Greatwall (Gwl) promotes inactivation of PP2A/B55δ, a phosphatase directed against CDK phosphosites. Mol. Biol. Cell 20: 4777-4789.
7. Voets, E., et al. 2010. MASTL is the human orthologue of Greatwall kinase that facilitates mitotic entry, anaphase and cytokinesis. Cell Cycle 9: 3591-3601.

CHROMOSOMAL LOCATION

Genetic locus: Mastl (mouse) mapping to 2 A3.

PRODUCT

MASTL siRNA (m) is a target-specific 19-25 nt siRNA 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 MASTL shRNA Plasmid (m): sc-149290-SH and MASTL shRNA (m) Lentiviral Particles: sc-149290-V as alternate gene silencing products.

For independent verification of MASTL (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-149290A, sc-149290B and sc-149290C.

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

MASTL siRNA (m) is recommended for the inhibition of MASTL 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 MASTL gene expression knockdown using RT-PCR Primer: MASTL (m)-PR: sc-149290-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.