SANTA CRUZ BIOTECHNOLOGY, INC.

MAML3 siRNA (m): sc-75745

BACKGROUND

MAML3 (mastermind-like protein 3) is a nuclear speckle protein that acts as a transcriptional coactivator for Notch receptors.The Notch signaling pathway influences cell fate by regulating the ability of precursor cells to properly respond to developmental signals. MAML3 is a member of the mastermind-like family of proteins that are human homologs of the *Drosophila melanogaster* mastermind protein. Through its N-terminal region, MAML3 interacts with the ankyrin repeats of the Notch proteins Notch 1, Notch 2, Notch 3 and Notch 4. This interaction leads to formation of a DNA-binding complex with the Notch proteins and RBP-Jκ; a complex that can then induce HES1 gene expression. While the N-terminal domain of MAML3 is essential for proper Notch binding, the C-terminal domain of MAML3 is essential for transcriptional activation. Due to its involvement in cell signaling and transcriptional activation, up-regulation of MAML3 is thought to be involved in oncogenesis.

REFERENCES

1. Wu, L., et al. 2002. Identification of a family of mastermind-like transcriptional coactivators for mammalian notch receptors. Mol. Cell. Biol. 22: 7688-7700.
2. Lin, S.E., et al. 2002. Identification of new human mastermind proteins defines a family that consists of positive regulators for notch signaling. J. Biol. Chem. 277: 50612-50620.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608991. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Wu, L. and Griffin, J.D. 2004. Modulation of Notch signaling by mastermind-like (MAML) transcriptional co-activators and their involvement in tumorigenesis. Semin. Cancer Biol. 14: 348-356.
5. Katoh, M. and Katoh, M. 2006. WNT antagonist, DKK2, is a Notch signaling target in intestinal stem cells: augmentation of a negative regulation system for canonical WNT signaling pathway by the Notch-DKK2 signaling loop in primates. Int. J. Mol. Med. 19: 197-201.

CHROMOSOMAL LOCATION

Genetic locus: Maml3 (mouse) mapping to 3 C.

PRODUCT

MAML3 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 MAML3 shRNA Plasmid (m): sc-75745-SH and MAML3 shRNA (m) Lentiviral Particles: sc-75745-V as alternate gene silencing products.

For independent verification of MAML3 (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-75745A, sc-75745B and sc-75745C.

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

MAML3 siRNA (m) is recommended for the inhibition of MAML3 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 MAML3 gene expression knockdown using RT-PCR Primer: MAML3 (m)-PR: sc-75745-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.