SANTA CRUZ BIOTECHNOLOGY, INC.

Imp3 siRNA (h): sc-89917

BACKGROUND

Imp3, also known as BRMS2, C15orf12 or MRPS4, is a 184 amino acid protein that contains one S4 RNA-binding domain and is the mammalian homolog of the yeast Imp3 protein. Localized to the nucleus, Imp3 exists as a component of a heterotrimeric complex consisting of MPP10, Imp3 and Imp4 and, in this complex, plays a key role in early cleavage events during pre-18S ribosomal processing. The gene encoding Imp3 maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome. Angelman syndrome, Prader-Willi syndrome, Tay-Sachs disease and Marfan syndrome are all associated with defects in chromosome 15-localized genes.

REFERENCES

1. Baserga, S.J., et al. 1997. Mpp10p, a new protein component of the U3 snoRNP required for processing of 18S rRNA precursors. Nucleic Acids Symp. Ser. 36: 64-67.
2. Lee, S.J., et al. 1997. Functional separation of pre-rRNA processing steps revealed by truncation of the U3 small nucleolar ribonucleoprotein component, Mpp10. Proc. Natl. Acad. Sci. USA 94: 13536-13541.
3. Lee, S.J., et al. 1999. Imp3p and Imp4p, two specific components of the U3 small nucleolar ribonucleoprotein that are essential for pre-18S rRNA processing. Mol. Cell. Biol. 19: 5441-5452.
4. Granneman, S., et al. 2003. The human Imp3 and Imp4 proteins form a ternary complex with hMpp10, which only interacts with the U3 snoRNA in 60-80S ribonucleoprotein complexes. Nucleic Acids Res. 31: 1877-1887.

CHROMOSOMAL LOCATION

Genetic locus: IMP3 (human) mapping to 15q24.2.

PRODUCT

Imp3 siRNA (h) 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 Imp3 shRNA Plasmid (h): sc-89917-SH and Imp3 shRNA (h) Lentiviral Particles: sc-89917-V as alternate gene silencing products.

For independent verification of Imp3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89917A, sc-89917B and sc-89917C.

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

Imp3 siRNA (h) is recommended for the inhibition of Imp3 expression in human 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

Imp3 (AT32E9): sc-517409 is recommended as a control antibody for monitoring of Imp3 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 Imp3 gene expression knockdown using RT-PCR Primer: Imp3 (h)-PR: sc-89917-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Samanta, S., et al. 2012. Regulation of IMP3 by EGFR signaling and repression by ERβ: implications for triple-negative breast cancer. Oncogene 31: 4689-4697.

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.