SANTA CRUZ BIOTECHNOLOGY, INC.

IMP5 siRNA (h): sc-93786

BACKGROUND

Intramembrane proteolysis is now widely recognized as an important physiological pathway required for reverse signaling and membrane protein degradation. Aspartyl intramembrane cleaving proteases of the GXGD-type play an important regulatory role in health and disease. Signal peptide peptidase (SPP) and SPP-like (SPPL) peptidases, such as SPPL2a, SPPL2b, IMP5, and SPPL3, belong to the family of GXGD aspartic proteases. The putative catalytic domains of SPP and SPPLs are embedded in membranes in an orientation predisposed to cleave type II oriented transmembrane proteins. IMP5 (intramembrane protease 5), also known as SPPL2c (signal peptide peptidase-like 2C), is a 690 amino acid multi-pass membrane protein that may act as an intramembrane protease. IMP5 also belongs to the peptidase A22B family and two isoforms are produced by alternative splicing events.

REFERENCES

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4. Friedmann, E., et al. 2004. Consensus analysis of signal peptide peptidase and homologous human aspartic proteases reveals opposite topology of catalytic domains compared with presenilins. J. Biol. Chem. 279: 50790-50798.
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6. Friedmann, E., et al. 2006. SPPL2a and SPPL2b promote intramembrane proteolysis of TNFα in activated dendritic cells to trigger IL-12 production. Nat. Cell Biol. 8: 843-848.
7. Fluhrer, R., et al. 2006. A γ-secretase-like intramembrane cleavage of TNFα by the GxGD aspartyl protease SPPL2b. Nat. Cell Biol. 8: 894-896.
8. Fluhrer, R. and Haass, C. 2007. Signal peptide peptidases and γ-secretase: cousins of the same protease family? Neurodegener. Dis. 4: 112-116.
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CHROMOSOMAL LOCATION

Genetic locus: SPPL2C (human) mapping to 17q21.31.

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

IMP5 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 IMP5 shRNA Plasmid (h): sc-93786-SH and IMP5 shRNA (h) Lentiviral Particles: sc-93786-V as alternate gene silencing products.

For independent verification of IMP5 (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-93786A, sc-93786B and sc-93786C.

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

IMP5 siRNA (h) is recommended for the inhibition of IMP5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IMP5 gene expression knockdown using RT-PCR Primer: IMP5 (h)-PR: sc-93786-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.