

SPPL2b siRNA (m): sc-153780

BACKGROUND

SPPL2b (signal peptide peptidase-like 2b), also known as PSL1 or IMP4 (intramembrane protease 4), is a 592 amino acid multi-pass membrane protein that contains one protease associated domain and belongs to the GXGD family of aspartic proteases. Localized to the membrane of the Golgi apparatus and to lysosomes, endosomes and the plasma membrane, SPPL2b functions as an intramembrane protease that specifically cleaves the transmembrane domain of TNF α . Once cleaved, TNF α releases its intracellular domain, thus triggering the immunity-related expression of cytokines (also known as interleukins) which are used in various pathways throughout the body. SPPL2b also interacts with and catalyzes the intramembrane proteolysis of ITM2B (integral membrane protein 2B), a protein that, when mutated, is associated with dementia. Four isoforms of SPPL2b exist due to alternative splicing events.

REFERENCES

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4. Krawitz, P., et al. 2005. Differential localization and identification of a critical aspartate suggest non-redundant proteolytic functions of the presenilin homologues SPPL2b and SPPL3. *J. Biol. Chem.* 280: 39515-39523.
5. Nyborg, A.C., et al. 2006. Intramembrane proteolytic cleavage by human signal peptide peptidase like 3 and malaria signal peptide peptidase. *FASEB J.* 20: 1671-1679.
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7. Fluhrer, R., et al. 2006. A γ -secretase-like intramembrane cleavage of TNF α by the GXGD aspartyl protease SPPL2b. *Nat. Cell Biol.* 8: 894-896.
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CHROMOSOMAL LOCATION

Genetic locus: Sppl2b (mouse) mapping to 10 C1.

PRODUCT

SPPL2b 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPPL2b shRNA Plasmid (m): sc-153780-SH and SPPL2b shRNA (m) Lentiviral Particles: sc-153780-V as alternate gene silencing products.

For independent verification of SPPL2b (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-153780A, sc-153780B and sc-153780C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SPPL2b siRNA (m) is recommended for the inhibition of SPPL2b 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 μ M in 66 μ l. 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 SPPL2b gene expression knockdown using RT-PCR Primer: SPPL2b (m)-PR: sc-153780-PR (20 μ l). 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.