SANTA CRUZ BIOTECHNOLOGY, INC.

PSMD11 siRNA (m): sc-76278

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The Power to Question

BACKGROUND

In eukaryotic cells, the selective breakdown of cellular proteins is ensured by their ubiquitination and subsequent degradation by the 26S proteasome. The 26S proteasome is a protease complex that selectively breaks down proteins that have been modified by polyubiquitin chains. It is made up of two multi-subunit complexes: the 20S proteasome chamber, which serves as the proteolytic core of the complex, and two 19S regulatory particles, which recognize and unfold ubiquitinated proteins. PSMD11 (proteasome (prosome, macropain) 26S subunit, non-ATPase, 11), also known as S9, Rpn6 or p44.5, is a 422 amino acid protein that contains one PCI domain and functions as a regulatory subunit of the 26S proteasome, playing a role in the ATP-dependent degradation of ubiquitinated proteins. The gene encoding PSMD11 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Kanayama, H.O., et al. 1992. Demonstration that a human 26S proteolytic complex consists of a proteasome and multiple associated protein components and hydrolyzes ATP and ubiquitin-ligated proteins by closely linked mechanisms. Eur. J. Biochem. 206: 567-578.
2. Coux, O., et al. 1996. Structure and functions of the 20S and 26S proteasomes. Annu. Rev. Biochem. 65: 801-847.
3. Hoffman, L., et al. 1997. Molecular cloning and expression of subunit 9 of the 26S proteasome. FEBS Lett. 404: 179-184.
4. Saito, A., et al. 1997. cDNA cloning and functional analysis of p44.5 and p55, two regulatory subunits of the 26S proteasome. Gene 203: 241-250.
5. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604449. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Fong, A., et al. 2002. S9, a 19 S proteasome subunit interacting with ubiquitinated NFκB2/p100. J. Biol. Chem. 277: 40697-40702.
7. Urso, M.L., et al. 2007. Alterations in mRNA expression and protein products following spinal cord injury in humans. J. Physiol. 579: 877-892.

CHROMOSOMAL LOCATION

Genetic locus: Psmd11 (mouse) mapping to 11 B5.

PRODUCT

PSMD11 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 PSMD11 shRNA Plasmid (m): sc-76278-SH and PSMD11 shRNA (m) Lentiviral Particles: sc-76278-V as alternate gene silencing products.

For independent verification of PSMD11 (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-76278A, sc-76278B and sc-76278C.

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

PSMD11 siRNA (m) is recommended for the inhibition of PSMD11 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.

GENE EXPRESSION MONITORING

PSMD11 (AT2C7): sc-517422 is recommended as a control antibody for monitoring of PSMD11 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 PSMD11 gene expression knockdown using RT-PCR Primer: PSMD11 (m)-PR: sc-76278-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.