SANTA CRUZ BIOTECHNOLOGY, INC.

PSMD3 siRNA (h): sc-93979

BACKGROUND

In eukaryotic cells, 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. PSMD3 (proteasome (prosome, macropain) 26S subunit, non-ATPase, 3), also known as S3, P58 or RPN3, is a 534 amino acid regulatory component of the 26S Proteasome that consists of one PCI domain. PSMD3 is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Yokota, K., et al. 1996. CDNA cloning of p112, the largest regulatory subunit of the human 26S Proteasome, and functional analysis of its yeast homologue, sen3p. Mol. Biol. Cell 7: 853-870.
2. Wang, H.Y. and Liu, S.X. 2002. Investigation on NB4 cell responses to realgar by cDNA microarray. Zhongguo Zhong Yao Za Zhi 27: 600-604.
3. Wang, H., et al. 2003. Gene expression profile changes in NB4 cells induced by realgar. Chin. Med. J. 116: 1074-1077.
4. Thompson, H.G., et al. 2004. Post-translationally modified S12, absent in transformed breast epithelial cells, is not associated with the 26S Proteasome and is induced by proteasome inhibitor. Int. J. Cancer 111: 338-347.
5. Shibahara, T., et al. 2004. Mass spectrometric analysis of expression of ATPase subunits encoded by duplicated genes in the 19S regulatory particle of rice 26S Proteasome. Arch. Biochem. Biophys. 421: 34-41.
6. Tan, Y., et al. 2006. Effects of tumor necrosis factor-α on the 26S Proteasome and 19S regulator in skeletal muscle of severely scalded mice. J. Burn Care Res. 27: 226-233.
7. Wang, Z., et al. 2006. Prostaglandin J2 alters pro-survival and pro-death gene expression patterns and 26S Proteasome assembly in human neuroblastoma cells. J. Biol. Chem. 281: 21377-21386.

CHROMOSOMAL LOCATION

Genetic locus: PSMD3 (human) mapping to 17q21.1.

PRODUCT

PSMD3 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 PSMD3 shRNA Plasmid (h): sc-93979-SH and PSMD3 shRNA (h) Lentiviral Particles: sc-93979-V as alternate gene silencing products.

For independent verification of PSMD3 (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-93979A, sc-93979B and sc-93979C.

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

PSMD3 siRNA (h) is recommended for the inhibition of PSMD3 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

PSMD3 (G-1): sc-393588 is recommended as a control antibody for monitoring of PSMD3 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 PSMD3 gene expression knockdown using RT-PCR Primer: PSMD3 (h)-PR: sc-93979-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.