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SANTA CRUZ BIOTECHNOLOGY, INC.

PSMD7 siRNA (m): sc-152562

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 multisubunit 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. PSMD7 (proteasome (prosome, macropain) 26S subunit, non-ATPase 7), also referred to as P40, S12 or MOV34, is a regulatory subunit of the 26S Proteasome which is involved in the ATP-dependent degradation of ubiquitinated proteins. PSMD7 contains a proteolytically resistant MPN domain. MPN domain family members comprise subunits of the proteasome, COP9-signalosome and eIF3 (translation initiation factor 3) complexes. PSMD7 interacts with HIV-1 Vpr and together they function as a cellular factor linked to the G_2/M phase transition of the mammalian cell cycle.

REFERENCES

1. Gridley, T., et al. 1990. Molecular analysis of the Mov 34 mutation: transcript disrupted by proviral integration in mice is conserved in *Drosophila*. Development 109: 235-242.
2. Gridley, T., et al. 1991. The murine Mov-34 gene: full-length cDNA and genomic organization. Genomics 11: 501-507.
3. Deveraux, Q., et al. 1994. A 26S protease subunit that binds ubiquitin conjugates. J. Biol. Chem. 269: 7059-7061.
4. Deveraux, Q., et al. 1995. Molecular cloning and expression of a 26S Protease subunit enriched in dileucine repeats. J. Biol. Chem. 270: 23726-23729.
5. Dubiel, W., et al. 1995. Molecular cloning and expression of subunit 12: a non-MCP and non-ATPase subunit of the 26 S protease. FEBS Lett. 363: 97-100.
6. Mahalingam, S., et al. 1998. HIV-1 Vpr interacts with a human 34-kDa mov34 homologue, a cellular factor linked to the G_2/M phase transition of the mammalian cell cycle. Proc. Natl. Acad. Sci. USA 95: 3419-3424.
7. Ta, M., et al. 2000. Mov34 protein from mouse brain interacts with the 3' noncoding region of Japanese encephalitis virus. J. Virol. 74: 5108-5115.

CHROMOSOMAL LOCATION

Genetic locus: Psmd7 (mouse) mapping to 8 D3.

PRODUCT

PSMD7 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 PSMD7 shRNA Plasmid (m): sc-152562-SH and PSMD7 shRNA (m) Lentiviral Particles: sc-152562-V as alternate gene silencing products.

For independent verification of PSMD7 (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-152562A, sc-152562B and sc-152562C.

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

PSMD7 siRNA (m) is recommended for the inhibition of PSMD7 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

PSMD7 (F-2): sc-390705 is recommended as a control antibody for monitoring of PSMD7 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 PSMD7 gene expression knockdown using RT-PCR Primer: PSMD7 (m)-PR: sc-152562-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.