SANTA CRUZ BIOTECHNOLOGY, INC.

PSMC2 siRNA (h): sc-76273

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. PSMC2 (Proteasome 26S subunit ATPase 2), also known as S7 or MSS1, is a 433 amino acid member of the AAA ATPase family. Localized to both the nucleus and the cytoplasm, PSMC2 functions as a chaperone-like subunit of the 19S regulatory complex where it participates in proteasome events throughout the cell. Additionally, PSMC2 is thought to interact with several basal transcription factors and, via this interaction, may play a role in transcriptional regulation. In response to HIV-1 infection, PSMC2 can positively modulate HIV-1 Tat-mediated transactivation, thereby mediating the interaction between the transcription complex and the viral protein.

REFERENCES

1. Shibuya, H., et al. 1992. New human gene encoding a positive modulator of HIV Tat-mediated transactivation. Nature 357: 700-702.
2. Chen, Y., et al. 1997. HEC binds to the seventh regulatory subunit of the 26 S Proteasome and modulates the proteolysis of mitotic cyclins. J. Biol. Chem. 272: 24081-24087.
3. Yanagi, S., et al. 2000. Tissue and cell distribution of a mammalian proteasomal ATPase, MSS1, and its complex formation with the basal transcription factors. Biochem. Biophys. Res. Commun. 279: 568-573.
4. Conticello, S.G., et al. 2003. The Vif protein of HIV triggers degradation of the human antiretroviral DNA deaminase APOBEC3G. Curr. Biol. 13: 2009-2013.
5. Mueller, T.D., et al. 2003. Structural determinants for the binding of ubiquitin-like domains to the proteasome. EMBO J. 22: 4634-4645.

CHROMOSOMAL LOCATION

Genetic locus: PSMC2 (human) mapping to 7q22.1.

PRODUCT

PSMC2 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 PSMC2 shRNA Plasmid (h): sc-76273-SH and PSMC2 shRNA (h) Lentiviral Particles: sc-76273-V as alternate gene silencing products.

For independent verification of PSMC2 (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-76273A, sc-76273B and sc-76273C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

PSMC2 siRNA (h) is recommended for the inhibition of PSMC2 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

PSMC2 (C-1): sc-166972 is recommended as a control antibody for monitoring of PSMC2 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 PSMC2 gene expression knockdown using RT-PCR Primer: PSMC2 (h)-PR: sc-76273-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.