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SANTA CRUZ BIOTECHNOLOGY, INC.

PSMC4 siRNA (m): sc-45852

BACKGROUND

In eukaryotic cells, selective breakdown of cellular proteins is ensured by their ubiquitination and subsequent degradation by the 26S proteasome. At specific stages of development, embryo- and tissue-specific components of the 26S proteasome are formed, which are responsible for proteolysis. These components of the 26S proteasome include Rpn10α through Rpn10ε, or, alternatively, pUb-R2 through pUb-R5, and can be generated by a single Rpn10 gene by developmentally regulated alternative splicing. Gankyrin and p44S10 are proteasome regulatory particles that are expressed in heart, liver, skeletal muscle and pancreas. Proteasome component C2 (PROS-30), also designated Macropain subunit C2, is a 30 kDa prosomal protein involved in a non-lysosomal ATP/ubiquitin-dependent proteolytic pathway. PSMC4 (26S protease regulatory subunit 6B) is involved in the ATP-dependent degradation of ubiquitinated proteins. PSMC4 interacts with with gankyrin, a liver oncoprotein as well as with a liver-specific member of the nuclear hormone receptor superfamily.

REFERENCES

1. Dubiel, W., et al. 1994. Tat-binding protein 7 is a subunit of the 26S protease. Biol. Chem. Hoppe-Seyler 375: 237-240.
2. Tanahashi, N., et al. 1998. Chromosomal localization and immunological analysis of a family of human 26S proteasomal ATPases. Biochem. Biophys. Res. Commun. 243: 229-232.
3. Sakao, Y., et al. 2000. Mouse proteasomal ATPases PSMC3 and PSMC4: genomic organization and gene targeting. Genomics 67: 1-7.
4. Rhodes, D.R., et al. 2004. Large-scale meta-analysis of cancer microarray data identifies common transcriptional profiles of neoplastic transformation and progression. Proc. Natl. Acad. Sci. USA 101: 9309-9314.
5. Szabo, A., et al. 2004. Statistical modeling for selecting housekeeper genes. Genome Biol. 5: R59.

CHROMOSOMAL LOCATION

Genetic locus: Psmc4 (mouse) mapping to 7 A3.

PRODUCT

PSMC4 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 PSMC4 shRNA Plasmid (m): sc-45852-SH and PSMC4 shRNA (m) Lentiviral Particles: sc-45852-V as alternate gene silencing products.

For independent verification of PSMC4 (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-45852A, sc-45852B and sc-45852C.

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

PSMC4 siRNA (m) is recommended for the inhibition of PSMC4 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

PSMC4 (G-4): sc-166115 is recommended as a control antibody for monitoring of PSMC4 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 PSMC4 gene expression knockdown using RT-PCR Primer: PSMC4 (m)-PR: sc-45852-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.