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SANTA CRUZ BIOTECHNOLOGY, INC.

PSAP siRNA (h): sc-44046

BACKGROUND

Prostate specific antigen (PSA), also designated gamma-seminoprotein, seminin, p30 antigen, semenogelase, and kallikrein 3 (KLK3), was first identified as a glycoprotein in human seminal plasma. PSA was determined by sequence similarity to be a member of the kallikrein subfamily of trypsin proteases. PSA is a serine protease that hydrolyzes the major human seminal protein, the seminal plasma mobility inhibitor precursor, or semenogelin I (SPMIP or SgI), which leads to semen liquification. PSA production and expression are highest in normal, benign hyperplastic and cancerous tissues of the prostate, although PSA has also been detected in accessory male sex glands and in breast cancer. PSA has been identified as an aid in the early detection of prostate cancer and is a commonly used tumor marker.

REFERENCES

1. Watt, K.W., et al. 1986. Human prostate-specific antigen: structural and functional similarity with serine proteases. Proc. Natl. Acad. Sci. USA 83: 3166-3170.
2. Schaller, J., et al. 1987. Isolation, characterization and amino-acid sequence of γ-seminoprotein, a glycoprotein from human seminal plasma. Eur. J. Biochem. 170: 111-120.
3. Lundwall, A., et al. 1987. Molecular cloning of human prostate specific antigen cDNA. FEBS Lett. 214: 317-322.
4. Catalona, W.J., et al. 1993. Detection of organ-confined prostate cancer is increased through prostate-specific antigen-based screening. JAMA 270: 948-954.
5. Robert, M., et al. 1996. Purification and characterization of the active precursor of a human sperm motility inhibitor secreted by the seminal vesicles: identity with semenogelin. Biol. Reprod. 55: 813-821.
6. Seregni, E., et al. 1996. Biochemical characteristics and recent biological knowledge on prostate-specific antigen. Tumori 82: 72-77.
7. Robert, M., et al. 1997. Characterization of prostate-specific antigen proteolytic activity on its major physiological substrate, the sperm motility inhibitor precursor/semenogelin I. Biochemistry 36: 3811-3819.
8. Chu, T.M. 1997. Prostate-specific antigen and early detection of prostate cancer. Tumour Biol. 18: 123-134.

CHROMOSOMAL LOCATION

Genetic locus: NPEPPS (human) mapping to 17q21.32.

PRODUCT

PSAP 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 PSAP shRNA Plasmid (h): sc-44046-SH and PSAP shRNA (h) Lentiviral Particles: sc-44046-V as alternate gene silencing products.

For independent verification of PSAP (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-44046A, sc-44046B and sc-44046C.

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

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

PSAP (E-5): sc-390184 is recommended as a control antibody for monitoring of PSAP 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 PSAP gene expression knockdown using RT-PCR Primer: PSAP (h)-PR: sc-44046-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.