SANTA CRUZ BIOTECHNOLOGY, INC.

HPA1 siRNA (h): sc-40685

BACKGROUND

Heparanases (HPA) degrade heparan sulfate side chains of heparan sulfate proteoglycans (HSPGs) in the extracellular matrix and play an important role in the extravasation of blood-borne tumor cells and inflammatory leukocytes. HPA1 dismantles the subendothelial basal membrane and facilitates the metastasis of blood-borne tumor cells. Furthermore, HPA1 induces angiogenesis and likely promotes the vascularization of tumors. Upon degradation, HPAs free growth factors and cytokines that stimulate cell proliferation and chemotaxis. Fibroblasts endocytose extracellular HPA1 for cytoplasmic accumulation *in vitro*. Proteolytic processing at the cell surface of a precursor begets an active form of HPA1.

REFERENCES

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2. Bashkin, P., et al. 1989. Basic fibroblast growth factor binds to sunendothelial extracellular matrix and is released by heparitinase and heparin-like molecules. Biochemistry 28: 1737-1743.
3. Vlodasvsky, I., et al. 1990. Extracellular matrix-resident growth factors and enzyme: possible involvement in tumor metatstasis and angiogenesis. Cancer Metastasis Rev. 9: 203-226.
4. Vlodavsky, I., et al. 1992. Expression of heparanase by platelets and circulating cells of the immune system: possible involvement in diapedesis and extravasation. Invasion Metastasis 12: 112-127.
5. Baker, E., et al. 1999. Human HPA endoglycosidase heparanase. Map position 4q21.3. Chromosome Res. 7: 319.
6. Dempsey, L.A., et al. 2000. Heparanase, a potential regulator of cell-matrix interactions. Trends Biochem. Sci. 25: 349-351.
7. Vlodavsky, I., and Goldshmidt, O. 2001. Properties and function of heparanase in cancer metastasis and angiogenesis. Haemostasis 31: 60-63.
8. Nadav, L., et al. 2002. Activation, processing and trafficking of extracellular heparanase by primary human fibroblasts. J. Cell Sci. 115:2179-2187.

CHROMOSOMAL LOCATION

Genetic locus: HPSE (human) mapping to 4q21.23.

PRODUCT

HPA1 siRNA (h) is a target-specific 19-25 nt siRNA 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 HPA1 shRNA Plasmid (h): sc-40685-SH and HPA1 shRNA (h) Lentiviral Particles: sc-40685-V as alternate gene silencing products.

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

HPA1 siRNA (h) is recommended for the inhibition of HPA1 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

HPA1 (E-10): sc-515935 is recommended as a control antibody for monitoring of HPA1 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 HPA1 gene expression knockdown using RT-PCR Primer: HPA1 (h)-PR: sc-40685-PR (20 µl, 467 bp). 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.