SANTA CRUZ BIOTECHNOLOGY, INC.

acrogranin siRNA (h): sc-39261

BACKGROUND

Acrogranin (also designated PC cell-derived growth factor (PCDGF), epithelin/granulin precursor or paragranulin) is a glycosylated protein originally purified from the highly tumorigenic, Insulin-independent mouse teratoma PC cell line. Acrogranin is a cysteine-rich molecule whose expression is essential for tumorigenicity in teratoma cells. Acrogranin is expressed in estrogen receptor-positive (ER^+) human mammary MDA-MB-468 epithelial cells, human breast cancer MCF7 cells and human estrogen-responsive T-47D cells. Secreted acrogranin acts as an autocrine growth factor for breast carcinoma cells and overexpression may play an important role in human breast cancer. Acrogranin stimulates the growth of PC cells as well as 3T3 fibroblasts.

REFERENCES

1. Zhou, J., et al. 1993. Purification of an autocrine growth factor homologous with mouse epithelin precursor from a highly tumorigenic cell line. J. Biol. Chem. 268: 10863-10869.
2. Baba, T., et al. 1993. Acrogranin, an acrosomal cysteine-rich glycoprotein, is the precursor of the growth-modulating peptides, granulins, and epithelins, and is expressed in somatic as well as male germ cells. Mol. Reprod. Dev. 34: 233-243.
3. Xia, X. and Serrero, G. 1998. Identification of cell surface binding sites for PC-cell-derived growth factor, PCDGF, (epithelin/granulin precursor) on epithelial cells and fibroblasts. Biochem. Biophys. Res. Commun. 245: 539-543.

CHROMOSOMAL LOCATION

Genetic locus: GRN (human) mapping to 17q21.31.

PRODUCT

acrogranin 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 acrogranin shRNA Plasmid (h): sc-39261-SH and acrogranin shRNA (h) Lentiviral Particles: sc-39261-V as alternate gene silencing products.

For independent verification of acrogranin (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-39261A, sc-39261B and sc-39261C.

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

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

acrogranin (C-11): sc-377036 is recommended as a control antibody for monitoring of acrogranin 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 acrogranin gene expression knockdown using RT-PCR Primer: acrogranin (h)-PR: sc-39261-PR (20 µl, 434 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, Y., et al. 2007. Inhibition of PC cell-derived growth factor (PCDGF)/granulin-epithelin precursor (GEP) decreased cell proliferation and invasion through downregulation of cyclin D and CDK4 and inactivation of MMP-2. BMC Cancer 7: 22.
2. Li, H., et al. 2014. Circulating PGRN is significantly associated with systemic Insulin sensitivity and autophagic activity in metabolic syndrome. Endocrinology 155: 3493-3507.
3. Neill, T., et al. 2016. EphA2 is a functional receptor for the growth factor progranulin. J. Cell Biol. 215: 687-703.
4. Miyagawa, T., et al. 2018. Progranulin overproduction due to constitutively activated c-Abl/PKC-δ/Fli1 pathway contributes to the resistance of dermal fibroblasts to the anti-fibrotic effect of tumor necrosis factor-α in localized scleroderma. J. Dermatol. Sci. 92: 207-214.

RESEARCH USE

For research use only, not for use in diagnostic procedures.