SANTA CRUZ BIOTECHNOLOGY, INC.

GAPR-1 siRNA (h): sc-92741

BACKGROUND

Cysteine-rich secretory proteins (CRISPs) represent a family of evolutionarily conserved proteins that may play a role in the innate immune system and are transcriptionally regulated by androgens in several tissues. GAPR-1 (Golgi-associated plant pathogenesis-related protein 1), also known as GLIPR2, is a 154 amino acid lipid anchor protein belonging to the CRISP family. GAPR-1 also shares similarity with the pathogenesis-related protein (PR) superfamily, and may play an important role in the immune system. Existing as a homodimer, GAPR-1 is highly expressed in lung and peripheral leukocytes with minor expression in liver and kidney. Containing a conserved sperm-coating protein (SCP) domain, GAPR-1 binds to negatively charged lipids and may be involved in the differentiation of epithelial cells into mesenchymal cells. Increased expression of GAPR-1 in kidney may contribute to the development of fibrosis.

REFERENCES

1. Eisenberg, I., et al. 2002. Cloning and characterization of a human novel gene C9orf19 encoding a conserved putative protein with an SCP-like extracellular protein domain. Gene 293: 141-148.
2. Eberle, H.B., et al. 2002. Identification and characterization of a novel human plant pathogenesis-related protein that localizes to lipid-enriched microdomains in the Golgi complex. J. Cell Sci. 115: 827-838.
3. Groves, M.R., et al. 2004. Crystallization of a Golgi-associated PR-1-related protein (GAPR-1) that localizes to lipid-enriched microdomains. Acta Crystallogr. D Biol. Crystallogr. 60: 730-732.
4. Serrano, R.L., et al. 2004. Structural analysis of the human Golgi-associated plant pathogenesis related protein GAPR-1 implicates dimerization as a regulatory mechanism. J. Mol. Biol. 339: 173-183.
5. Baxter, R.M., et al. 2007. The plant pathogenesis related protein GLIPR-2 is highly expressed in fibrotic kidney and promotes epithelial to mesenchymal transition *in vitro*. Matrix Biol. 26: 20-29.
6. Vadnais, M.L., et al. 2008. Molecular cloning and expression of the CRISP family of proteins in the boar. Biol. Reprod. 79: 1129-1134.

CHROMOSOMAL LOCATION

Genetic locus: GLIPR2 (human) mapping to 9p13.3.

PRODUCT

GAPR-1 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 GAPR-1 shRNA Plasmid (h): sc-92741-SH and GAPR-1 shRNA (h) Lentiviral Particles: sc-92741-V as alternate gene silencing products.

For independent verification of GAPR-1 (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-92741A, sc-92741B and sc-92741C.

RESEARCH USE

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

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

GAPR-1 siRNA (h) is recommended for the inhibition of GAPR-1 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

GAPR-1 (G-1): sc-398529 is recommended as a control antibody for monitoring of GAPR-1 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 GAPR-1 gene expression knockdown using RT-PCR Primer: GAPR-1 (h)-PR: sc-92741-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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