SANTA CRUZ BIOTECHNOLOGY, INC.

PGRP-S siRNA (m): sc-62791

BACKGROUND

Peptidoglycan recognition proteins (PGRPs) are molecules that recognize peptidoglycan, a large component in bacterial cell walls. In insects, PGRPs activate antimicrobial pathways, and in mammals PGRPs function as antibacterial neutrophil proteins. PGRP-L halts bacterial growth by acting as an alanine amidase, an enzyme that hydrolyzes the amide bond of bacterial peptidoglycan. PGRP-Iα and PGRP-Iβ are also members of the PGRP family that help recognize bacteria by binding to peptidoglycan and Gram-positive bacteria, but they do not have amidase activity. PGRP-S participates in intracellular killing of Gram-positive bacteria by stimulating two antimicrobial defense systems, the prophenoloxidase cascade and the antimicrobial peptides through Toll receptors.

REFERENCES

1. Liu, C., et al. 2001. Peptidoglycan recognition proteins: a novel family of four human innate immunity pattern recognition molecules. J. Biol. Chem. 276: 34686-34694.
2. Dziarski, R., et al. 2003. Defect in neutrophil killing and increased susceptibility to infection with nonpathogenic Gram-positive bacteria in peptidoglycan recognition protein-S (PGRP-S)-deficient mice. Blood 102: 689-697.
3. Kibardin, A.V., et al. 2003. Expression analysis of proteins encoded by genes of the tag7/tagL (PGRP-S,L) family in human peripheral blood cells. Genetika 39: 244-249.
4. Lo, D., et al. 2003. Peptidoglycan recognition protein expression in mouse Peyer's Patch follicle associated epithelium suggests functional specialization. Cell. Immunol. 224: 8-16.
5. Wang, Z.M., et al. 2003. Human peptidoglycan recognition protein-L is an N-acetylmuramoyl-L-alanine amidase. J. Biol. Chem. 278: 49044-49052.
6. Cho, J.H., et al. 2005. Human peptidoglycan recognition protein S is an effector of neutrophil-mediated innate immunity. Blood 106: 2551-2558.
7. Guan, R., et al. 2005. Crystal structure of human peptidoglycan recognition protein S (PGRP-S) at 1.70 A resolution. J. Mol. Biol. 347: 683-691.

CHROMOSOMAL LOCATION

Genetic locus: Pglyrp1 (mouse) mapping to 7 A3.

PRODUCT

PGRP-S 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 PGRP-S shRNA Plasmid (m): sc-62791-SH and PGRP-S shRNA (m) Lentiviral Particles: sc-62791-V as alternate gene silencing products.

For independent verification of PGRP-S (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-62791A, sc-62791B and sc-62791C.

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

PGRP-S siRNA (m) is recommended for the inhibition of PGRP-S 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

PGRP-S (G-1): sc-365304 is recommended as a control antibody for monitoring of PGRP-S 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 PGRP-S gene expression knockdown using RT-PCR Primer: PGRP-S (m)-PR: sc-62791-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.