

PGRP-I β (186C426): sc-52945

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 anti-bacterial neutrophil proteins. PGRP-L halts bacterial growth by acting as an alanine amidase, an enzyme that hydrolyzes the amide bond of bacterial peptidoglycan. PGRP-I α and PGRP-I β are also members of the PGRP family that help to recognize bacteria by binding to peptidoglycan and Gram-positive bacteria, but they do not have amidase activity. These two PGRPs are expressed in the esophagus and, to a lesser extent, in the tonsils and thymus. PGRP-I α and PGRP-I β are transmembrane proteins of 341 and 373 amino acids, respectively, and they have at least three highly conserved C-terminal PGRP domains either in the extracellular or in the cytoplasmic (or in both) regions.

REFERENCES

- Liu, C., Xu, Z., Gupta, D. and Dziarski, R. 2001. Peptidoglycan recognition proteins: a novel family of four human innate immunity pattern recognition molecules. *J. Biol. Chem.* 276: 34686-34694.
- Wang, Z.M., Li, X., Cocklin, R.R., Wang, M., Wang, M., Fukase, K., Inamura, S., Kusumoto, S., Gupta, D. and Dziarski, R. 2003. Human peptidoglycan recognition protein-L is an N-acetylmuramoyl-L-alanine amidase. *J. Biol. Chem.* 278: 49044-49052.
- Guan, R., Malchiodi, E.L., Wang, Q., Schuck, P. and Mariuzza, R.A. 2004. Crystal structure of the C-terminal peptidoglycan-binding domain of human peptidoglycan recognition protein I α . *J. Biol. Chem.* 279: 31873-31882.
- Natori, S. 2004. Overview: Innate immunity and peptidoglycan recognition protein. *Tanpakushitsu Kakusan Koso* 49: 1156-1160.
- Fournier, B. and Philpott, D.J. 2005. Recognition of *Staphylococcus aureus* by the innate immune system. *Clin. Microbiol. Rev.* 18: 521-540.
- Kumar, S., Roychowdhury, A., Ember, B., Wang, Q., Guan, R., Mariuzza, R.A. and Boons, G.J. 2005. Selective recognition of synthetic lysine and meso-diaminopimelic acid-type peptidoglycan fragments by human peptidoglycan recognition proteins I α and S. *J. Biol. Chem.* 280: 37005-37012.
- Uehara, A., Sugawara, Y., Kurata, S., Fujimoto, Y., Fukase, K., Kusumoto, S., Satta, Y., Sasano, T., Sugawara, S. and Takada, H. 2005. Chemically synthesized pathogen-associated molecular patterns increase the expression of peptidoglycan recognition proteins via toll-like receptors, NOD1 and NOD2 in human oral epithelial cells. *Cell. Microbiol.* 7: 675-686.
- Wang, H., Gupta, D., Li, X. and Dziarski, R. 2005. Peptidoglycan recognition protein 2 (N-acetylmuramoyl-L-Ala amidase) is induced in keratinocytes by bacteria through the p38 kinase pathway. *Infect. Immun.* 73: 7216-7225.
- Guan, R., Brown, P.H., Swaminathan, C.P., Roychowdhury, A., Boons, G.J. and Mariuzza, R.A. 2006. Crystal structure of human peptidoglycan recognition protein I α bound to a muramyl pentapeptide from Gram-positive bacteria. *Protein Sci.* 15: 1199-1206.

RESEARCH USE

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

CHROMOSOMAL LOCATION

Genetic locus: PGLYRP4 (human) mapping to 1q21; Pglyrp4 (mouse) mapping to 3 F1.

SOURCE

PGRP-I β (186C426) is a mouse monoclonal antibody raised against amino acids 95-110 of PGRP-I β of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PGRP-I β (186C426) is recommended for detection of PGRP-I β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for PGRP-I β siRNA (h): sc-62785 and PGRP-I β siRNA (m): sc-62786; and as shRNA Plasmid control antibody for PGRP-I β shRNA Plasmid (h): sc-62785-SH and PGRP-I β shRNA Plasmid (m): sc-62786-SH.

Molecular Weight of PGRP-I β : 38/46 kDa.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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