REG3A, REG3G binds bacterial peptidoglycan

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references


Reactome database release: 83

This document contains 1 reaction (see Table of Contents)
REG3A, REG3G binds bacterial peptidoglycan

Stable identifier: R-HSA-6801808

Type: binding

Compartments: extracellular region, cell wall

Regenerating islet-derived 3 (REG3) proteins belong to the family of C-type lectins (Cash HL et al. 2006a,b; Lehotzky RE et al. 2010). REG3A and REG3G are induced and expressed in the intestine where they function as antibacterial peptides by targeting the peptidoglycan moieties of bacteria. NMR spectroscopy revealed that human REG3A lectin recognized the peptidoglycan carbohydrate backbone in a calcium-independent manner via a conserved “EPN” motif that is critical for bacterial killing (Lehotzky RE et al. 2010). The antibacterial activities of REG3 proteins are restricted to Gram-positive bacteria and are tightly controlled by an inhibitory N-terminal pro-segment that is removed by trypsin in vivo (Cash HL et al. 2006; Mukherjee S et al. 2009; Medveczky P et al. 2009).

Literature references


Editions

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