

LYZ 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

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Reactome database release: 76

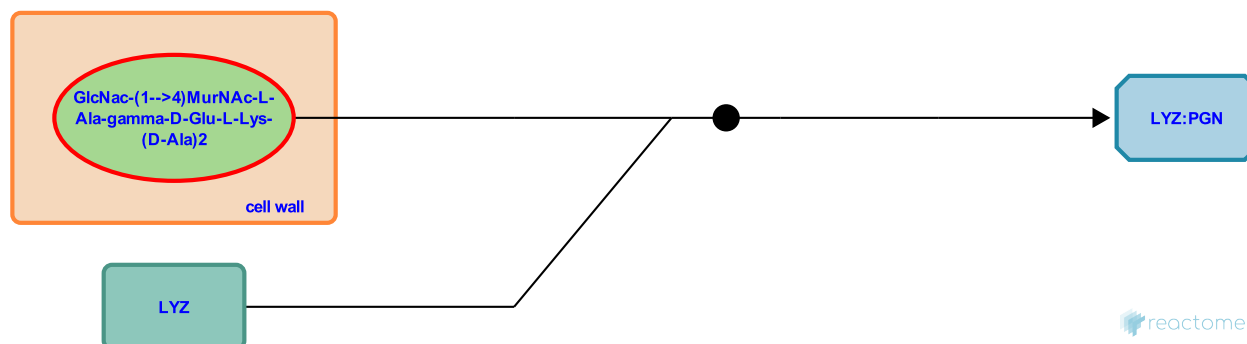
This document contains 1 reaction ([see Table of Contents](#))

LYZ binds bacterial peptidoglycan ↗

Stable identifier: R-HSA-8862300

Type: binding

Compartments: extracellular region, cell wall



Human lysozyme (LYZ), also known as 1,4-beta-N-acetylmuramidase C, is found in human secretions such as tears, milk, mucus and saliva (Surna A et al. 2009; Minami J et al. 2015; Sahin O et al. 2016; Masschalck B & Michiels CW. 2003). LYZ functions primarily as a bacteriolytic agent by catalyzing hydrolysis of (1->4)-beta-linkages between N-acetylmuramic acid and N-acetyl-D-glucosamine residues in the bacterial cell wall peptidoglycan (Schindler M et al. 1977; Surna A et al. 2009). Nonenzymatic bactericidal activity of LYZ has been documented as well and is generally associated with the cationic properties of LYZ (Ito Y et al. 1997; Nash JA et al. 2006). LYZ acts against both Gram-positive and Gram-negative bacteria such as *Peptostreptococcus micros*, *Eubacterium nodatum*, *Eikenella corrodens*, *Fusobacterium periodontium* and *Campylobacter rectus* (Laible & Germaine 1985, Surna A et al. 2009; Tenovuo J 2002).

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Editions

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