3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Peptidoglycan from *Staphylococcus aureus*

Catalog Number **77140**
Storage Temperature –20 °C

Product Description

Many bacteria contain in their cell walls a unique biopolymer, peptidoglycan, which lends rigidity to the cell wall and mechanical strength to the cell. Cell walls of Gram-positive bacteria are largely composed of peptidoglycan, and can contain up to 40 layers of this polymer, which underlies the great mechanical strength of the cell wall. The core structure of peptidoglycan is a carbohydrate backbone of alternating units of *N*-acetylglucosamine (Glc*N*Ac) and *N*-acetyl muramic acid (Mur*N*Ac), linked by β(1→4) bonds. The Mur*N*Ac residues are crosslinked with oligopeptides. A unique aspect of peptidoglycans is that they contain D-amino acids, e.g. D-Ala and D-Glu, the only known biological molecule that contains D-amino acids.[1,2]

The degree of peptide crosslinkage in *S. aureus* peptidoglycan is high, on the order of ~93%. This leads to a relatively high proportion of *S. aureus* peptidoglycan existing as oligomers, and a relatively low percentage as monomers (<10%).[2] Various publications have studied structural features of the *Staphylococcus aureus* cell wall peptidoglycan.[3-7]

Several publications cite use of this specific product in different applications and systems, including mucin gene expression in NCI-H292 cells,[8] culture of macrophages,[9] regulatory T cell migration into neonatal skin,[10] binding assay studies,[11,12] cryo-X-ray photoelectron spectroscopy,[13] and pro-inflammatory cytokine production in human monocytes.[14]

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

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