

**M1-Molecular and Cellular Biology (MCB)
Internship Proposal Form
Chemistry-Biology Department**

(Deadline Wednesday 20th October 2016)

Laboratory Address and Affiliation

Institut de Biologie Structurale
71 Av. des Martyrs, 38044 Grenoble, France

Laboratory/Team Research area (Keyword)

Pneumococcus group
Bacterial cell wall, antibiotic resistance

Summary of the Proposed Internship Project (10 lines)

Title: *In vitro* synthesis of bacterial cell wall

DESCRIPTION:

Peptidoglycan is the main constituent of the bacterial cell wall. Peptidoglycan is a giant polymer of glycan chains cross-linked by peptide bridges. It is assembled at the cell surface by enzymes that are the targets of penicillin.

In the context of a study of peptidoglycan synthesis, the student will synthesize the precursor of peptidoglycan assembly called lipid II. Lipid II is a disaccharide-pentapeptide linked to undecaprenyl pyrophosphate.

Protocols are available but will need to be adapted to the host laboratory.

Methodologies and/or Techniques to be used

Bacterial cultures. Preparation of cellular membranes. Extractions. Thin layer chromatography.

Person to contact:

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Additional information

The project is well adapted to a short M1 internship. The project may be pursued in M2 and thesis using Lipid II and recombinant enzymes to reconstruct peptidoglycan and study penicillin resistance