Structural characterization of bacterial proteins involved in antibiotic resistance and peptidoglycan biosynthesis

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Propositions accompanying the thesis

Structural characterization of bacterial proteins involved in antibiotic resistance and peptidoglycan biosynthesis.

1. The use of acid/base mutants to obtain covalent intermediates leads to artefacts in the conformation of the adduct. (Chapter 3)

2. The Ambler residues Ser70 and Ser130 are crucial for substrate binding by β-lactamases. (Chapter 4, and Helfand *et al.*, 2003)

3. Despite the structural similarity to Alr, YlmE is not an alanine racemase. (Chapters 6 and 7)

4. YlmE is an RNA-binding protein, and its activity is required for proper sporulation of *Streptomyces coelicolor*. (Chapter 6)

5. RNA species that are yet unknown play key roles in the regulation of cellular processes. (Cech and Steitz, 2014; Kirchner and Ignatova, 2014)

6. There is a conserved functionality of COG0325 proteins that is essential for cell division in bacteria and for neuronal activity in mammals. (Darin *et al.*, 2016; Plecko *et al.*, 2017)

7. The actual need of new antibiotics is debatable. (Rolain *et al.*, 2016)

8. Proteins in crystals are much more dynamic than the word *crystal* suggests.

9. In life, motivation counts more than intelligence.

10. After making Europe, we will have to make Europeans [After Massimo d'Azeglio (1798-1866)]