Evolutionary adaptability of β-lactamase: a study of inhibitor susceptibility in various model systems

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Stellingen

Behorende bij het proefschrift

Evolutionary adaptability of β-lactamase

A study of inhibitor susceptibility in various model systems

1. BlaC is readily able to acquire mutations that make it less susceptible to sulbactam.

   (Chapter 2)
2. Residue 132 of BlaC is crucial to the conformation of the loop that covers the active site.

   (Chapter 2)
3. Asp179 is essential for other class A β-lactamases but not for BlaC.

   (Chapter 3)
4. An increase in active protein in the cell does not compensate for the avibactam susceptibility of BlaC G132S due to the reversible nature of the interaction between this inhibitor and the enzyme.

   (Chapter 4)
5. Combatting antibiotic resistance starts with education and awareness.
6. Measuring epistasis on the cellular level rather than on the protein level better reflects the effect on evolutionary pathways.

   (Gonzalez and Ostermeier 2019)
7. Negative epistasis is a rate-limiting factor in protein evolution.
8. Expanding research to other model systems is both exciting and terrifying.
9. Mental illness should be regarded in the same way as physical illness.
10. A regular yoga practice is beneficial for everybody.

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