

University of Groningen

## A proteogenomic view on antibiotic resistance in pathogenic *Enterobacter* species

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**Propositions accompanying the thesis**  
**“A proteogenomic view on antibiotic resistance in**  
**pathogenic *Enterobacter* species”**

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1.  $\beta$ -lactam antibiotics are globally used to cure bacterial infections, but their efficacy is threatened by horizontal transfer of  $\beta$ -lactamase genes.  
Chapter 2
2. Genomic islands play essential roles in the evolution of ‘superbugs’, because they facilitate the spread of genes relating to antibiotic resistance, virulence and metabolic functions.  
Chapter 2
3. Web-based bioinformatic tools to identify antibiotic resistance genes are applicable both in clinical and basic microbiological investigations.  
Chapters 2, 4 and 5
4. Annotated bacterial whole-genome sequences serve as useful scaffolds to predict various cellular processes and, combined with proteomics analyses, they help to understand the bacterial perception of and responses to drugs.  
Chapter 3
5. Slowing down metabolism is one of the ways by which bacteria can cope with antibiotics.  
Chapter 3
6. Studies on the bacterial responses to antibiotics provide not only mechanistic insights on how bacteria cope with these drugs, but they also provide an outlook on future development of antibiotic resistance.  
Chapter 3
7. The *E. cloacae* complex is widespread, diverse and versatile, and includes emerging pathogens.  
Chapter 4
8. The study of plasmid-mediated resistance to different classes of antibiotics is of critical importance, because of the propensity of plasmids to disseminate resistance genes.  
Chapter 5
9. If we wish to keep tracking the underlying effects of biological processes, we traverse various fields, leading to chemistry and physics. Given the finite time we have, we limit ourselves to the boundaries of these fields.  
Dr. Diwaker Jha
10. I dream to lighten up the rural Nepal and capture the happiness reflected on the faces of people when they see light for the first time. Kishor Rimal
11. When you asked me about the possibility to find fur boxes, at first, I thought about animal fur 😊  
working with Stefano Grasso on Chapter 3
12. Good communication is important.
13. Nobody cares if you can’t dance well. Just get up and dance. Great dancers are great because of their passion  
Martha Graham