



genes



Special Issue Reprint

Genomics of Bacterial Metal Resistance

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The importance of understanding metal–microbe interactions underlies a number of social–economic issues in the world. The antimicrobial resistance era has created a need for novel antimicrobials and within this field metal and metalloid ions are promising solutions. Pollution sites, either co-contaminated with metals or with metals as the sole pollutant, contain microbes that are present as key participants, with both of these issues having links to agriculture. Microbes also play key roles in the global geochemical cycle of many elements. Such statements solidify the need to understand metal–microbe interactions. Given that genomics has arguably become the most useful tool in biology, the application of this technology within the field of understanding metal resistance comes as no surprise. Whilst by no means comprehensive, this book provides examples of the applications of genomic approaches in the study of metal–microbe interactions. Here, we present a collection of manuscripts that highlights some present directions in the field. The book starts with a collection of three papers evaluating aspects of the genomics of the archetype metal resistant bacteria, *Cupriavidus metallidurans*. This is followed by four studies that evaluate the mechanisms of metal resistance. The next two papers assess metal resistance in agricultural related situations, including a review on metal resistance in *Listeria*. The book concludes with a review on metal phytoremediation via *Rhizobia* and two subsequent studies of metal biotechnology relevance.



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