



# antibiotics



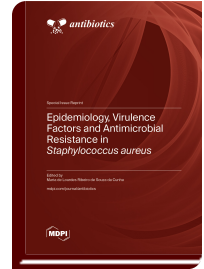
*Special Issue Reprint*

## **Epidemiology, Virulence Factors and Antimicrobial Resistance in *Staphylococcus aureus***

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Methicillin-resistant *Staphylococcus aureus* (MRSA) is a leading cause of healthcare-associated MRSA ((HA)-MRSA) infections, and its prevalence is also increasing in community-associated MRSA ((CA)-MRSA) infections. Studies on the prevalence of asymptomatic *S. aureus* and MRSA carriage are important since colonization is a possible precursor stage of invasive disease. The variety of *S. aureus* species causing infections is largely due to the wide variety of virulence factors encoded by these bacteria, which favor the invasion of different tissues and the evasion of the host's immune system. Genetically diverse, the epidemiology of MRSA is primarily characterized by the serial emergence of epidemic strains. The constant monitoring of these profiles of resistance to antimicrobials, as well as the knowledge of the prevalent and circulating clonal profiles in hospitals, is extremely important for the direction of empirical therapies. Currently, newly developed drugs can treat these resistant staphylococci, but there are already reports of reduced sensitivity to them. Successful treatment remains challenging and requires the evaluation of both novel antimicrobials and adjunctive aspects of care and source control. This Reprint includes contributions that further our understanding of basic and clinical *S. aureus* research regarding epidemiology, transmission, genetic diversity, virulence factors, surveillance and treatment, and brings together the expertise and enthusiasm of an international group of contributors to research in this field.



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