



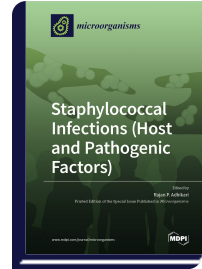
Special Issue Reprint

Staphylococcal Infections (Host and Pathogenic Factors)

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Although 30% of the healthy human population is colonized with various *Staphylococcus* species, some staphylococcal strains, referred to as opportunistic pathogens, can cause minor to life-threatening diseases. The pathogenicity of these bacteria depends on their virulence factors and the robustness of the regulatory networks expressing these virulence factors. Virulence factors of pathogenic *Staphylococcus* spp. consist of numerous toxins, enterotoxins (some of which act as superantigens), enzymes, and proteins (cytoplasmic, extracellular, and surface) that are regulated by two-component (TC) and quorum-sensing (QS) regulatory networks. To enter this niche, some other *Staphylococcus* species, such as *Staphylococcus simulans*, produce a potent endopeptidase called lysostaphin, which can inhibit the growth of pathogenic *S. aureus*. Some other *Staphylococcus* species produce autolysins and cationic peptides to win the intra- and inter-species competition. The outcome of this microbial invasion depends not only on pathogenic factors but also on the host's internal and external defense mechanisms, including a healthy skin microbiome. A healthy skin microbiome population can prevent colonization by other major pathogens. As normal host microflora, these commensals establish a complex relationship with the host as well as the surrounding microbial communities. This Special Issue of *Microorganisms* is focused on studies and recent advancements in our understanding of staphylococcal virulence mechanisms that enable *Staphylococcus* spp. either to successfully establish themselves as a colonizer or to overcome the host's defense system to cause infection along with our effort to make an anti-staphylococcal vaccine.



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