

Abstract

Staphylococcus aureus is one of the most common causes of bacterial infection in human. The bacterium is equipped by the broad spectrum of virulence factors, including modulators of immune response and also invasion factors able to destroy human cells and tissues. *S. aureus* is also able to asymptotically colonize healthy individuals. Precise regulation of virulence factor expression is crucial for *S. aureus* survival. The aim of this thesis is to describe in detail molecular mechanisms regulating *S. aureus* virulence factor expression. Among these mechanisms belongs quorum sensing dependent *agr* system, sigma B general stress response, Sar family of transcription factors and metabolism-dependent regulators CodY and CcpA.

Keywords:

S. aureus, virulence, quorum sensing, *agr* system, *sar*, sigma B, CodY, alpha-hemolysin.