

Flavone Reduces the Production of Virulence Factors in *Staphylococcus aureus*

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Staphylococcus aureus is a leading cause of nosocomial infections due to its resistance to diverse antibiotics. This bacterium produces a large number of extracellular virulence factors that are closely associated with specific diseases. In this study, twelve plant flavonoids were investigated to identify a novel anti-virulence compound against *S. aureus*. Flavone, a backbone compound of flavonoids, at subinhibitory concentration markedly reduced the production of staphyloxanthin and α -hemolysin. This staphyloxanthin reduction rendered the *S. aureus* cells 100 times more vulnerable to hydrogen peroxide in the presence of flavone. In addition, flavone significantly decreased the hemolysis of human red blood by *S. aureus* and the transcriptional level of α -hemolysin gene hla and a global regulator gene sae in *S. aureus* cells. This finding supported the potential of flavone as a potential as an antivirulence agent and provides a starting point in the design of potent drugs against antibiotic-resistant *S. aureus*.