

**STAPHYLOCOCCUS AUREUS “NAGD” VIRULENCE FACTOR IS A PHOSPHO-GLYCOLATE PHOSPHATASE. J. Hill, S. O’Handley\*, Department of Chemistry, [jkh0709@rit.edu](mailto:jkh0709@rit.edu), [sfosch@rit.edu](mailto:sfosch@rit.edu).**

*Staphylococcus aureus* is a common pathogen and a major cause of hospital acquired infection. One of the main problems of *S. aureus* infection is that of multi-drug resistance, thus finding new drug targets is an important area of research. A new virulence factor from *S. aureus* was recently described as a homolog of NAGD UMPase from *E. coli*. We wanted to determine if this virulence factor was in fact an ortholog of NAGD or rather a new member of the nitrophenyl phosphatase family of the haloacid dehalogenase superfamily. We cloned the gene, expressed and purified the protein, and determined its activity. This virulence factor is not an ortholog of NAGD, but rather a phosphoglycolate phosphatase. Recently, a phosphoglycolate phosphatase from *E. coli* has been implicated with a role in DNA repair. If the *S. aureus* phosphoglycolate phosphatase is involved in both DNA repair and virulence, this would be a novel type of virulence factor. Because both DNA repair and virulence are important processes in *S. aureus*, this phosphoglycolate phosphatase virulence factor is a potential novel antibiotic target.