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Screening *Staphylococcus aureus* Transposon Mutants for Altered Nuclease Activity

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Poster Presentation P45

SCREENING *STAPHYLOCOCCUS AUREUS* TRANSPOSON MUTANTS FOR ALTERED NUCLEASE ACTIVITY

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Recent studies show that extracellular DNA (eDNA) and nuclease play integral and antagonistic roles in *Staphylococcus aureus* biofilms. Release of eDNA into the biofilm matrix as a result of cell lysis takes place during initial attachment and development, while an increase in nuclease activity occurs during dispersal and decomposition. While studies demonstrate that the *cidA* and *lrg* operons help to control cell lysis and genomic DNA release, the genetic regulation of nuclease activity remains undefined. This study used transposon mutageneis to create *S. aureus* mutants, and developed a fluorescent nuclease assay to screen these mutants for altered nuclease activity. By performing arbitrary PCR and DNA sequencing on the mutants that exhibited considerable increases or decreases in activity, we uncovered several genes potentially involved in the regulation of nuclease activity. With further investigation we hope that these genes provide insight not only into the regulation and activity of *S. aureus* nuclease, but also its role in the detachment of biofilms.