Non-pathogenic *Neisseria sicca* ATCC 29256 undergoes natural transformation

Mark P. Sirianno and Paul M. Duffin, Division of Natural Sciences and Mathematics, Transylvania University, Lexington, KY 40508

Natural transformation is a widespread mechanism of horizontal gene transfer in bacteria and a major driver of evolution which promotes the increasing prevalence of antibiotic resistance. The obligate human pathogen, *Neisseria gonorrhoeae,* undergoes natural transformation frequently which has led to antibiotic resistant strains which fail clinical treatment. Several related non-pathogenic *Neisseria* species reside in the human nasopharynx, contribute to the normal human microbiome, and are likely genetically linked to *N. gonorrhoeae*. Although much research has focused on the pathogenic species, little is known regarding the genetics of the commensal (non-pathogenic) *Neisseria* species. Here, we conduct Minimum Inhibitory Concentration (MIC) assays, isolate two resistant mutants, and demonstrate transformation in *Neisseria sicca* ATCC 29256, a sequenced commensal strain previously thought to be refractory to transformation. Importantly, our work has established protocols and reagents needed for further study of *N. sicca* and supports the notion that genetic exchange between the pathogenic and non-pathogenic *Neisseria* occurs in the nasopharynx. This inter-species genetic transfer likely contributes to the evolution of virulence determinants and resistance to antibiotics.