**INTRODUCTION**

*Staphylococcus aureus* is a bacteria that is commonly found in the human microbiome. It is an opportunistic pathogen that can cause illness in the host under the right circumstances due to their defining toxins and superantigens. Many strains have developed a resistance to most antibiotics. About 30% of the human population carries *S. aureus*. CSP has been collecting swabs from various participants in an effort to determine the presence or absence of genes and proteins through the use of PCR and Western blot analysis. Based on the genes and proteins present, the virulence of *S. aureus* can be examined along with their capabilities of causing disease. To contribute to the previous data collected, twelve samples were analyzed from state fair attendees. A flow chart was created to identify *S. aureus* in the isolates I was given. Since *S. aureus* is a Gram positive cocci bacteria that is hemolytic, catalase positive, and produces coagulase, tests were performed to find colonies with matching characteristics. Going forward, there should be an increase in the sample size in order to see a more established pattern.

**METHODS**

- MSA plates were used to test their capabilities to ferment mannitol, which *S. aureus* is known to do.
- Next, the isolates were streaked onto CNA to test their hemolytic properties and isolate gram positive bacteria matching known properties of *S. aureus*.
- DNase streaking was then done (to test their ability to produce DNase that hydrolyses DNA). *S. aureus* is DNase positive.
- The last round consisted of catalase (to differentiate staphylococci that produce catalase), coagulase (an enzyme produced by *S. aureus*), and a gram stain (identification of gram positive cocci) in order to confirm the criteria for *S. aureus* were met.

**RESULTS**

- Out of the 12 isolates, 5 were negative for *S. aureus* and 7 were *S. aureus*.

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**RESULTS**

- Approximately 26-27% adults carry *Staphylococcus aureus* in their nasal cavities.