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Abstract

Concordia's staph study is aimed at characterizing *Staphylococcus aureus* rates of carriage and gene identification. Among the ethnicities tested, Asian/Pacific Islander were the most likely group to be carrying the Toxic Shock Syndrome superantigen among other ethnicities.

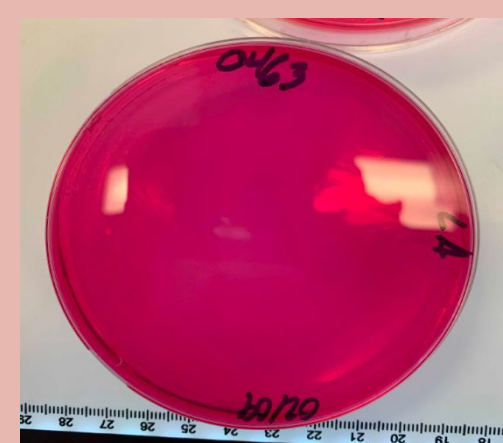
Background

S. aureus is a gram-positive bacterium that is found in 30% of the population and carries superantigens that allows it to manifest itself in the host. One of those superantigens can cause Toxic Shock Syndrome (TSS), which is life threatening if it becomes symptomatic.

Methods

Swabs collected were grown on TSA plates and went through many different tests to confirm strain identification

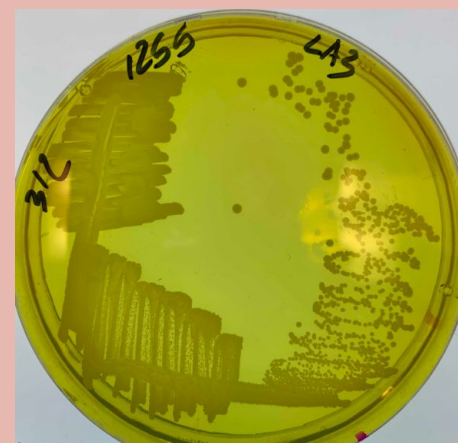
Negative



MSA

Tests if the bacterium is able to grow in a salty environment

Positive



CNA

Tests for hemolysins, proteins and lipids that destroy RBC



Asians/Pacific Islanders showed the greatest probability of having Toxic Shock Syndrome gene among Staph carriers

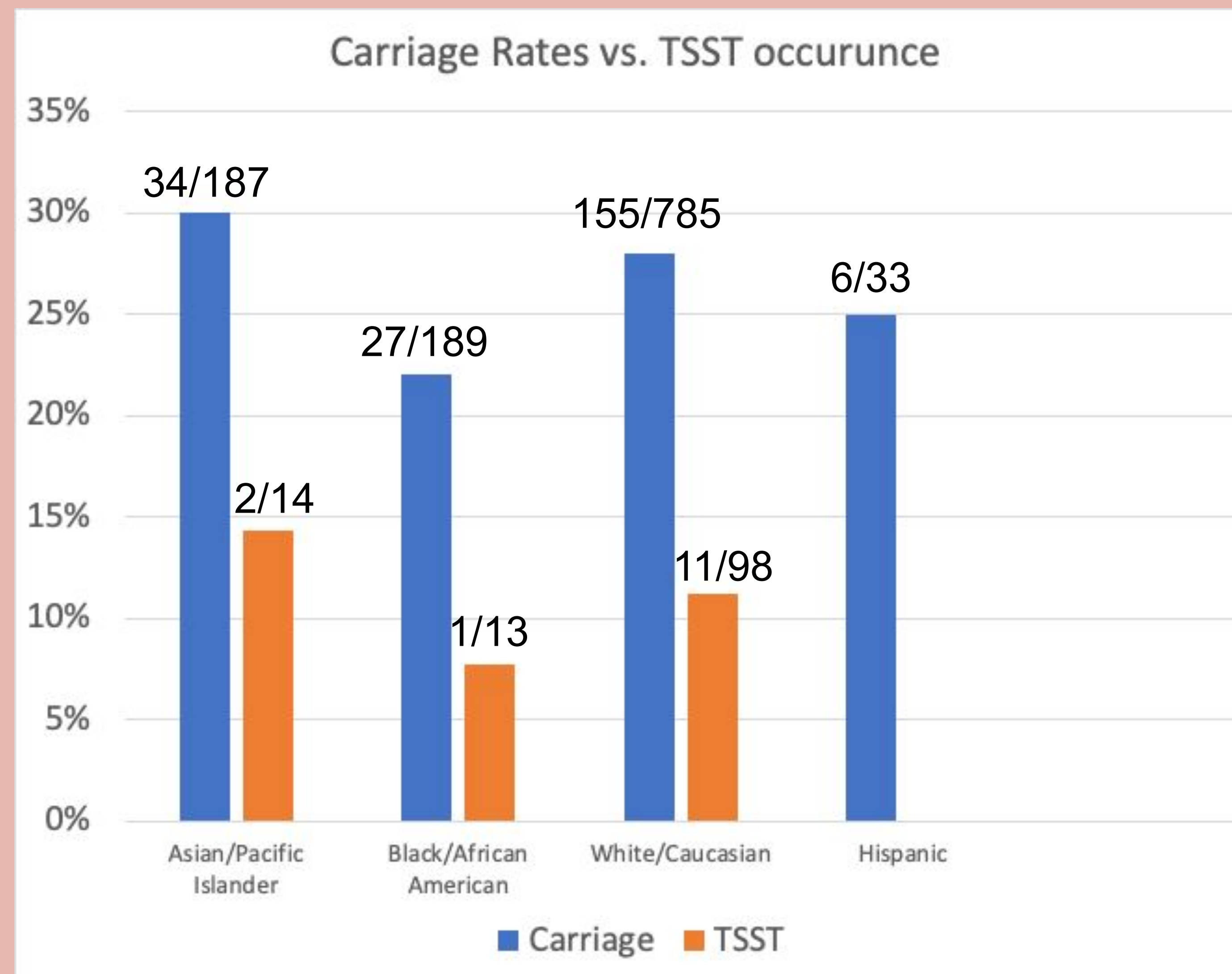
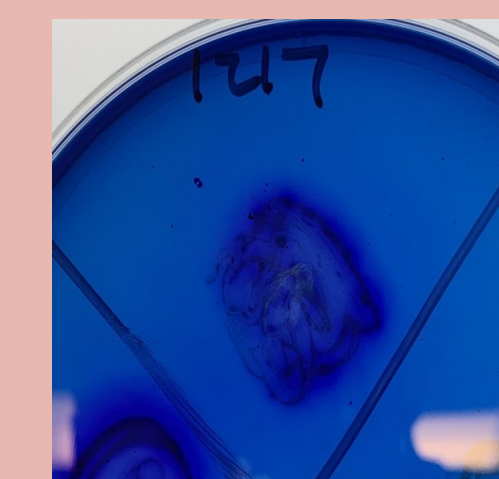
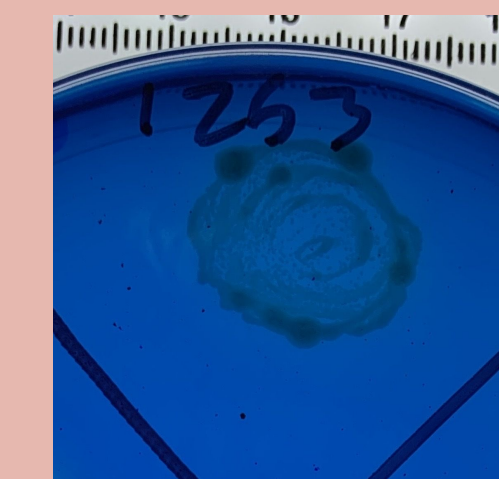


Figure1. Asian/Pacific Islanders showed the highest carriage rates and occurrence of TSST-1 gene in *S. aureus*. Carriage and TSST-1 occurrence were calculated using the Airtable program. White/Caucasian population showed the second highest carriage and TSST-1 gene, followed by Black/African Americans. Hispanic carriage rates and gene sequencing of the *S. aureus* was insufficient to make a conclusion compared to other ethnicities.

DNAse

Tests for an enzyme that catalyzes cleavage of linkages in DNA backbone



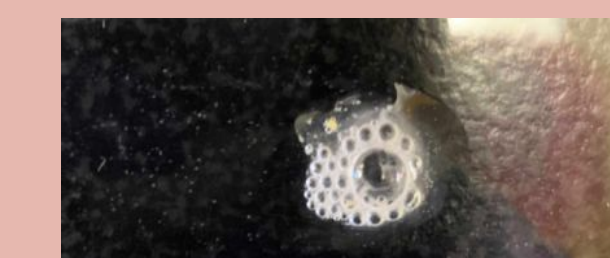
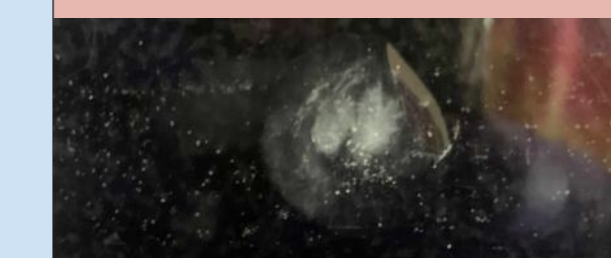
Coagulase

Tests for an enzyme that assists with blood clot formation



Catalase

Tests for presence of enzyme that degrades hydrogen peroxide to protect the bacteria



Results

Positive Negative Undetermined

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References and Acknowledgements

M. A. Strom, D.Y. Hsu, J. I. Silverberg. Prevalence, comorbidities and mortality of toxic shock syndrome in children and adults in the USA. *Microbial Immunol.* **61**, 463-473 (2017).

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