

Isolation Methods and Epidemiological studies of Staphylococcus

Fountain G Andersson*

Department of Microbiology, University of Rochester, Rochester, USA

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Staphylococci can cause numerous types of disease. Staphylococci aureus causes skin injuries (bubbles, eye sores) and confined abscesses in different sites. *S aureus* causes infections like osteomyelitis and endocarditis and several genuine skin diseases for example furunculosis. Staphylococcus are a class of bacterial microorganisms and pathogens of man and different vertebrates. On the basis of their ability to clot blood plasma, Staphylococcus are divided into two groups [1]. These are the coagulase-positive staphylococci, comprise the most pathogenic *S aureus*. The coagulase-negative staphylococci (CNS) are currently known to include more than 30 different species.

The Staphylococci is isolated by spreading the material from a blood culture on solid media such as media like blood agar, tryptic soy agar or may use heart infusion agar. In some cases these specimens may contaminate with other different microorganisms can be plated on agar containing sodium chloride 7.5%, which allows the halo-tolerant staphylococci to grow. Gram stain is the best strain to identify the colonies in the plate and tests made for catalase and coagulase production, allowing the coagulase-positive *S aureus* to be identified quickly [2,3]. Many molecular new methods have been used to the epidemiological analysis of *S aureus* in the laboratory studies, particularly, methicillin-resistant strains (MRSA). Now a days plasmid analysis has been extensively used for better results, but the disadvantage is that plasmids can easily be lost their properties and thus inherently unreliable.

Staphylococcus aureus is a pathogen with virulent nature and is responsible for the cause of different infections such as nosocomial, hospital and community-acquired infections. For treating Staphylococcus related infections are biggest challenges in medical field because many Staphylococcus aureus strains have developed resistance against various antibiotics. In humans, Staphylococcus aureus it can be present in the upper respiratory tract, gut mucosa, and upper layer of the skin as a normal microbiota [4,5]. However, *S. aureus* can cause disease under certain host and environmental conditions, it is act as a pathobiont. Staphylococcus aureus is a cause of surgical, device-related, and pleuropulmonary infections, which can result into life-threatening infective endocarditis and also sepsis in some cases. The mortality rate of *S. aureus* invasive infections was extremely high in the pre-antibiotic era.

According to the environmental conditions *S. aureus* has the power to regulate the expression of virulence factors in line with the environmental conditions during which it's found through a worldwide regulation system referred to as accent gene. *S. aureus* makes it terribly difficult to develop full-coverage therapies and vaccines.

With a whole-genome sequencing approach, we tend to reconstructed the phylogenies of the clones within the cohort, defined celebrated clones and variants, screened for resistance and virulence genes, and tested for the presence of an endemic. it's necessary to more our understanding of the genotypical and constitution options of assorted ST72 clones across the world to assess current and future therapeutic choices, to facilitate fast molecular designation, and to permit effective measures to be devised to scale back their fast dissemination.

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*Corresponding author: Fountain G Andersson, Department of Microbiology, University of Rochester, Rochester, USA, E-mail: Gandersson.f@rochester.edu

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