

Research Paper

## DETECTION OF DIFFERENT *STAPHYLOCOCCUS SPP.* ON OUTER SURFACES OF FARM ANIMALS, THEIR OWNERS AND STUDY THEIR GENOTYPIC AND PHENOTYPIC ABILITIES TO RESIST METHICILLIN

Ali A Al-Iedani<sup>1\*</sup> and Mysaa A Jumaa<sup>1</sup>

\*Corresponding Author: **Ali A Al-Iedani**, [aliedny65@yahoo.com](mailto:aliedny65@yahoo.com)

The study aimed to isolate and identify of different *Staphylococcus spp.* from skin and mucus membranes of nose of cattle, sheep and their owners; study the ability of isolates to resist methicillin by using genotypic and phenotypic methods. Two hundred and ten swabs were collected from skin and mucus membranes (80 from cattle; 80 from sheep and 50 from owners). The samples were subjected to conventional microbiological techniques and final identification of thirty isolates was done using Histaph<sup>TM</sup> kit. The identified isolates were tested against 7 antimicrobials, also these isolates were subjected to PCR for detection of *mec A* and *mec C* genes. The *Staphylococcus spp.* isolates which identified in this study were 16 including (*S. schleiferi subsp. Coagulans*); (*S. auricularis*, *S. caseolyticus*, *S. hominis subsp. novobiosepticus* and, *S. pasteuri*); (*S. Cohnii subsp. cohnii*, *S. sciuri* and *S. sciuri subsp. Rodentium*) and (*S. carnosus subsp. utilis*, *S. gallinarum*, *S. haemolyticus*, *S. hominis*, *S. intermedius*, *S. lentus*, *S. vitulus*, and *S. fleurettii*) in percentages 13.33%, 10%, 6.6% and 3.33% respectively. Regarding antimicrobial susceptibility of isolates, the percentages of resistance to antibiotics were 100%, 66.66%, 20%, 20%, 16.7%, 10%, and 3.33% against amoxicillin, penicillin, tetracycline, oxacillin, erythromycin, vancomycin and gentamicin respectively. Concerning *mec* genes, 33.33% of isolates were carried *mec A* gene, while, the *mec C* gene was not detected in isolates. All isolates which carried the *mec A* gene were negative to coagulase. In conclusion, some of *Staphylococcus spp.* present on the outer surfaces of human and animals and possess the *mec A* gene may have the ability to transfer the methicillin resistance to other bacterial species.

**Keywords:** *Staphylococcus spp.*, Skin, Mucus membranes of nose, Methicillin resistant

### INTRODUCTION

*Staphylococci* are ubiquitous Gram-positive

bacteria that represent part of the normal bacterial microflora of the skin and mucosal surfaces of

<sup>1</sup> Department of Microbiology and Parasitology, College of Veterinary Medicine, University of Basrah, Iraq