Cairo University
Faculty of Veterinary Medicine
Microbiology Department

"Phenotypic and Genotypic characterization of *Staphylococcus* species"

A Thesis presented by

Noha Elsayed Aref Abd El-Megeed Abd El-Dayem

B.V.Sc. (1995)
M.V.Sc. (2011)

For the degree of PhD thesis.
In Veterinary Medical Science,
(Bacteriology, Immunology and Mycology)

Under the Supervision of

Prof. Dr. Jakeen Kamal Abdel-Haleem El-Jakee

Prof. of Microbiology and Vice Dean for graduate studies
and research affairs, Faculty of Veterinary Medicine,
Cairo University, Egypt

Dr. Ahmed Samir

Ass. Prof. of Microbiology Department,
Faculty of Veterinary Medicine, Cairo University, Egypt

Dr. Alaa Mohamed Gomaa Bayoumi

Chief Researcher and Head of Mastitis and Neonates disease Department,
Animal Reproduction Research Institute

Dr. Samah Fekry Mohamed

Chief Researcher, Biotechnology Research unit,
Animal Reproduction Research Institute

2017

Supervision committee

Prof. Dr. Jakeen kamal Abdel-Haleem El-Jakee
Prof. of Microbiology and Vice Dean for graduate studies and research affairs
Faculty of Veterinary Medicine, Cairo University, Egypt.

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Animal Reproduction Research Institute (ARRI).

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Chief Researcher, Biotechnology Research unit
Animal Reproduction Research Institute (ARRI).

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Name: Noha El Sayed Aref Abd El Megeed Abd Eldayem.
Date of birth: 5 / 1 / 1972
Place of birth: Giza
Degree: PhD in Veterinary Medical Sciences.
Specialization: Microbiology "Bacteriology, Immunology and Mycology"
Supervisors:

Prof. Dr. Jakeen kamal Abdel-Haleem El-Jakee
Prof. of Microbiology and Vice Dean for graduate studies and research affairs
Faculty of Veterinary Medicine, Cairo University, Egypt.

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Ass. Prof. of Microbiology Department
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Animal Reproduction Research Institute (ARRI).

Dr. Samah Fekry Mohamed
Chief Researcher, Biotechnology Research unit
Animal Reproduction Research Institute (ARRI).

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Abstract

In the present investigation, The confirmation of 45 strains of coagulase negative Staphylococcus isolates was studied among mastitic cows, buffaloes. 23 from cow milk and 22 from buffalo milk. In addition to 18 *S.aureus* isolates, 11from cow milk and 7 from buffalo milk. *S.aureus* was isolated from the examined cow and buffaloes samples in pure culture (61.1 and 38.9 % respectively). CNS were isolated from the examined cow and buffaloes pure cultures was 51.1 and 48.9 % respectively. Identification of isolates was achieved by using convetional identification methods, the API staph ID test (BioMerieux) and PCR amplification. 14 *S. xylosus*. 12 *S. hominis.* 7 *S. lugdunensis.* 6 *S. cohnii*, 4 *S. saprophyticus*, 1 *S. simulans*, 1 *S. lentus* strains were confirmed. All B lactamase CNS producers (100%) detected from the examined buffaloe milk samples were resistant to penicillin. While 72.7% of B lactamase CNS producers detected from the examined cows were resistant to it. Most of CNS isolates were sensitive to neomycin, gentamicin, florfenicol and erythromycin. Mean while the examined isolates were resistant to cloxacillin, amoxycillin, ampicillin, penicillin and oxacillin. 52.2% and 18.2% CNS isolated from cows and buffaloes respectively were toxin (A) producers, while 4.35% and 4.5% respectively were toxin (A+D) producers, And 4.35% isolated from cows were toxin A+C+D and 4.5% isolated from buffaloes were toxin A+C producers. Sodium Dodecyl Sulfate-Poly Acrylamide Gel Electrophoresis (SDS-PAGE) showed the protein profile analysis of 41 CNS strains. It obvious that protein profile of CNS strains is separated into 1-12 fractions. The proportion of similarity in the samples that were separated ranged between 88% and 97%

Key word: Coagulase negative staphylococci (CNS)- Bovine Mastitis- Gel Electrophoresis -Toxin.

Acknowledgment

First of all, I greatly indebted in all my work and success to our gracious Allah.

No word can express my high appreciation, deep gratitude and sincere thanks to Prof. ***Dr. Jakeen Kamal abd El-Haleem El-Jakee,*** *Prof. of Microbiology and Vice Dean for graduate studies and research affairs, Faculty of Veterinary Medicine, Cairo University, Egypt for her valuable and keen supervision, ideal guidance, great support, constructive criticism and continual encouragement throughout the course of this study.*

I would like to thank ***Dr. Ahmed Samir*** *Ass. Prof. of Microbiology Department, Faculty of Veterinary Medicine, Cairo University, Egypt, for his supervision, for his support, providing the facilities throughout the course of this work.*

I am greatly indebted to ***Dr. Alaa Mohamed Gomaa Bayoumi*** *Head of Mastitis and Neonates disease Department, Animal Reproduction Research Institute, for his supervision, encouragement and great help and advice throughout the work.*

I also would like to present all thanks to ***Dr. Samah Fekry*** *Mohamed Chief Researcher in Biotechnology Research Unit, Animal Reproduction Research Institute, for her supervision, cooperation, sincere guidance and help in performing the PCR assay.*

I express my thankes to ***Dr. Ibrahim Gad*** *head of Animal Reproduction Research Institute for his supportive attitude and sustained encouragement.*

I am also grateful to ***Dr. Inas M. Gamal*** *and* ***Dr. Noha abdelkhalek*** *in Animal Reproduction Research Institute for their kindness effective and great help during this work.*

CONTENTS

LIST OF ABBREVIATIONS

ACME	**Arginine catabolic mobile elements**
α hemolysis	**Alpha hemolysis**
AFLP	**Amplified fragment length polymorphism**
API	**Analytical Profile Index**
β hemolysis	**beta hemolysis**
β-lactamase	**beta-lactamase**
blaZ genes	**β-lactam-resistant gene**
CNS	**Coagulase negative staphylococci**
Coa	**Coagulase**
CPS	**Coagulase positive staphylococci**
EU	**European Union**
IBM	**Individual bulk milk**
IMI	**Intramammary infection**
***mecA* gene**	**Methicillin resistant gene A**
MIC	**Minimum inhibitory concentration**
MR-CNS	**Methicillin resistant Coagulase negative staphylococci**
MRSA	**Methicillin resistant S. aureus**
NBG	**No bacterial growth**
NCCLS	**National Committees for clinical laboratory standards**
PCR	**polymerase chain reaction**
PFGE	**pulsed field gel electrophoresis**
rDNA	**Ribosomal Deoxyribonucleic acid**
RFLP	**Restriction fragment length polymorphism**
rRNA	**Ribosomal Ribonucleic acid**
SCC	**Staphylococcal cassette chromosome**
SCM	**Subclinical mastitis**
SDS-PAGE	**Sodium Dodecyl Sulfate -PolyAcrylamide Gel Electrophoresis**
SEs	**Staphylococcal enterotoxins**
SFP	**Staphylococcal food poisoning**

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