



Cairo University

Faculty of Veterinary Medicine  
Department of Microbiology

*B-lactamase production among Staphylococcus aureus isolates from human and bovine mastitis milk; potential man to animal cross infection.*

A thesis Presented by

**Sara Gamal Sayed Hassan**

(B.V.Sc., – 2011, Assiut University)

For The Degree of M.V.Sc.in Veterinary Medical Science  
Microbiology ( Bacteriology,Immunology and Mycology)

Under supervision of

**Prof. Dr. Wagih Armanious Gad El Said**

Professor of Microbiology  
Faculty of Veterinary Medicine  
Cairo University

**Prof.Dr. Sabry Darwish Morgan**

Professor of Milk Hygiene and Control  
Faculty of Veterinary Medicine  
Cairo University

**DR. Ahmed Samir Mohamed**

Assistant Professor of Microbiology  
Faculty of Veterinary Medicine  
Cairo University

(2016)

Cairo University  
Faculty of Veterinary Medicine  
Department of Microbiology

## Approval Sheet

This is to approve that the dissertation presented by

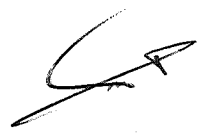
**Sara Gamal Sayed Hassan**

For M.V.Sc.Degree (Bacteriology, Immunology and Mycology)  
has been approved by the examining committee.

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to animal cross infection.*

Prof. Dr. Mohamed Nabel Hassan 

Professor of Microbiology, Faculty of Veterinary Medicine, Zagazig,  
University .

Prof. Dr. Khalid Farook El-Amry 

Professor of Microbiology, Faculty of Veterinary Medicine, Cairo  
University.

Prof. Dr. Wagih Armanious Gad El Said 

Professor of Microbiology, Faculty of Veterinary Medicine, Cairo  
University. (Supervisor)

Prof. DR. Sabry Darwish Morgan 

Professor of Milk Hygiene and Control, Faculty of Veterinary Medicine,  
Cairo University (Supervisor)

Dr. Ahmed Samir Mohamed 

Assistant Professor of Microbiology, Faculty of Veterinary Medicine,  
Cairo University. (Supervisor)

/ / 2016



**Faculty of Veterinary Medicine**  
Microbiology Department

**Supervision Sheet**

**Prof. Dr. WAGIH ARMANIOUS GAD EL SAID**  
Professor of Microbiology.

**Faculty of Veterinary Medicine.**

**Cairo University.**

**PROF. Dr. SABRY DARWISH MORGAN**

**Professor of Milk Hygiene and Control.**

**Faculty of Veterinary Medicine.**

**Cairo University (Supervisor)**

**PROF. Dr. AHMED S. MOHAMED**

**Ass. Prof. of Microbiology, and immunology.**

**Faculty of Veterinary Medicine.**

**Cairo University (Supervisor)**

**(2016)**



**Faculty of veterinary medicine**

**Department of Microbiology- Cairo University**

**Name: Sara Gamal Sayed Hassan**

**Nationality: Egyptian**

**Degree: Master in Veterinary Medicine Science**

**Specialty: Bacteriology, immunology and Mycology**

**Supervisors:**

**Prof. Dr. Wagih Armanious Gad El Said**

Professor of Microbiology, Faculty of Veterinary Medicine, Cairo University.

**Prof. Dr. Sabry Darwish Morgan**

Professor of Milk Hygiene and control Faculty of Vet. Medicine, Cairo University.

**Dr. Ahmed Samir Mohamed**

Ass. Prof. of Microbiology, Faculty of Vet. Medicine, Cairo University.

**Title of Thesis B-lactamase production among *Staphylococcus aureus* isolates from human and bovine mastitis milk: potential man to animal cross infection.**

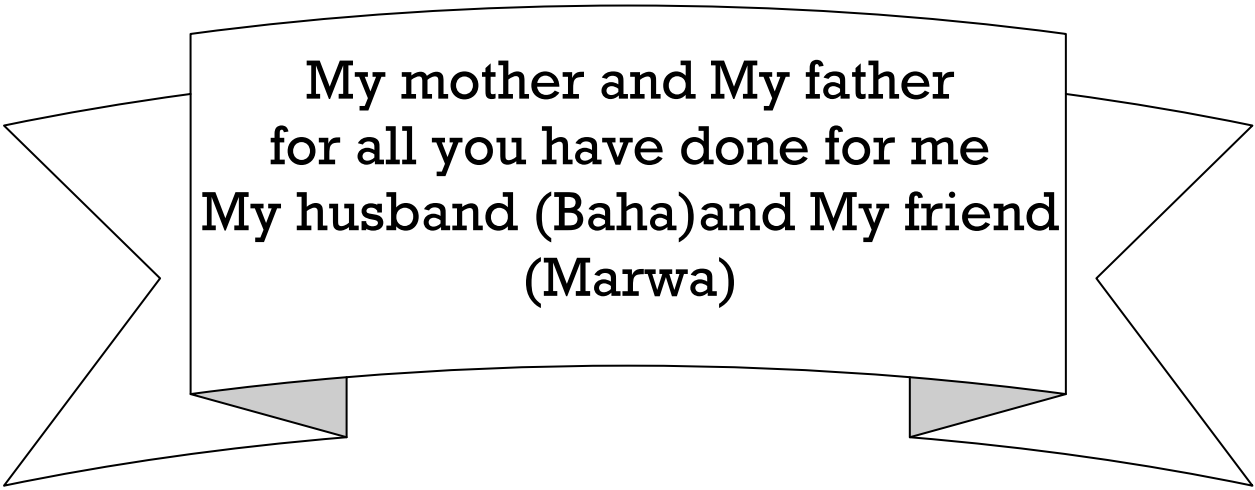
#### **Abstract**

**" B-lactamase production among *Staphylococcus aureus* isolates from human and bovine mastitis milk: potential man to animal cross infection" Sara Gamal Sayed Hassan Cairo University. Fac. Vet. Med. Thesis; M. V. Sc.; Bacteriology, immunology and Mycology, 2016.**

The main goal of the present study was the analysis of  $\beta$ -lactamase production in *S.aureus* isolates from humans and bovine mastitis and the association of  $\beta$ -lactamase production to methicillin and other antibiotic resistance.  $\beta$ -lactamase production was assayed using Cefinase disk method and MRSA was detected using Cefoxitin sensitivity test. The association of  $\beta$ -lactamase production and basic test results as carotenoid pigment and hemolysin production was analyzed. The obtained data revealed that, the percentages of  $\beta$ -lactamase production by *S.aureus* strains isolated from bovine milk (cows and buffaloes) were 63.63% and 80%, respectively. Meanwhile,  $\beta$ -lactamase production by *S.aureus* strains isolated from human cases (urine, nasal swabs and blood) was 71.43%, 51.6% and 66.7%, respectively. The results obtained proved that, 59.09% and 60.00% of *S.aureus* strains isolated from bovine milk (Cows & buffaloes) were Methicillin-resistant, respectively. While 100%, 70.97% and 50.0% of *S.aureus* isolated from human cases proved to be Methicillin-resistant, respectively. Of 86 *S.aureus* isolates identified 55 (63.95%) produced  $\beta$ -lactamase of these 39(70.91%) proved to MRSA and 16(29.1%) Multi drug resistant (MDR). The association of  $\beta$ -lactamase production and MRSA and MDR was discussed. The main goal of the present study was the analysis of  $\beta$ -lactamase production in *S.aureus* isolates from humans and bovine mastitis and the association of  $\beta$ -lactamase production to methicillin and other antibiotic resistance. Overall, there is clear evidence in this work that  $\beta$ -lactamase producing *S.aureus* and MRSA can be transmitted between humans and animals.



# **Dedication**



**My mother and My father  
for all you have done for me  
My husband (Baha) and My friend  
(Marwa)**

**And All MEMBERS OF MY FAMILY**

**For all the understanding, supports,  
patience, and sacrifices endured during  
my entire period of study.**





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