Cairo University
Faculty of Veterinary Medicine
Department of Microbiology

Detection and Characterization of *Escherichia coli* from Different Meat Sources

A Thesis Presented
By
Asmaa Rabea Kamal

B.V.Sc 2008

For The Degree of
Master in Veterinary Medical Science
(Bacteriology, Immunology and Mycology)

Under The Supervision Of

Prof. Dr. Kamelia Mahmoud Osman
Professor of Microbiology
Faculty of Veterinary Medicine,
Cairo University

Prof. Dr. Mohamed Khaled Elmossalami
Professor of Meat Hygiene and Control
Faculty of Veterinary Medicine,
Cairo University

2015

﴿ قالوا سبحانك لا علم لنا الا ما علمتنا

إنك انت العليم الحكيم ﴾

صدق الله العظيم

الآيه(32) سوره البقره

Abstract

Cairo University

Faculty of Veterinary Medicine

Department of Microbiology

Name: **Asmaa Rabea Kamal**

Nationality: **Egyptian**

For the degree of: **MSc (Microbiology)**

Title of Thesis **Detection and Characterization of *Escherichia coli* from Different Meat Sources**

Supervisors:

Prof. Dr. Fawzy Reyad El Seidy

Professor of Microbiology, Faculty of Veterinary Medicine, Beni-Suef University.

Prof. Dr. Jakeen Abd EL Haleem EL Jaky

Professor of Microbiology, Faculty of Veterinary Medicine, Cairo University

Prof.Dr. Kamelia Mahmoud Osman

Professor of Microbiology, Faculty of veterinary medicine, Cairo University

Prof. Dr. Mohamed EL Mosalamy

Professor of Meat hygiene, Faculty of veterinary medicine, Cairo University

In the present study 160 retail meats are examined for isolation of *E.coli* and the result confirmed biochemically and by using 16srRNA PCR which revealed that there were 55 *E.coli* isolates recovered from retail meat in percent 34.4% (55\160) with high occurrence in local meat 38.9 %(44\113) followed by Sudanese meat 29.6% (8\27) and low rate recovered from imported meat 15 %(3\20).Serotyping of recovered isolates revealed that there were high rate for *E.coli* O121: K64, O86: K61 , in percentage 18 % (10\55), 14.5 % (8\55) respectively . and low incidence of O119:K69 in percentage 3.6(2\55).molecular study of antibiotic genes by using PCR with specific primers revealed that there were 74.5 %(41\55) resistant to *teta* gene (tetracycline) while resistant to *erea* gene (erythromycin) were 67% (37\55) and the resistant to *dhfrV* gene (trimethoprime) were 9%(5\55) while resistant to *Sul1* gene (sulphatrimethoxaole) were 21.8%(12\51)

Key words :(*E.coli*, meat ,antibiotic resistance)

Acknowledgement

First, I have to thank God for giving me the gift to complete this thesis. Thank you god for everything in my life you give it to me.

I would like to express my gratitude for the encouragement and patience of my major enthusiastic advisor, ***Prof. Dr. Kamelia Mahmoud Osman,*** Professor of Microbiology, Department of Microbiology, Faculty of Veterinary Medicine, Cairo University. Her microbiological expertise, steadfast guidance, constant accessibility, unfailing interest, stimulating supervision and constructive criticism are greatly appreciated and were the guidelines which made the completion of this work possible. Thank you for the guidance on academic writing skills and giving me the chance to explore in details the demanding molecular techniques that I will need for a strong scientific career.

I am grateful to ***Prof. Dr. Mohamed Khaled Elmossalami,*** Professor of Meat Hygiene, Department of Food Hygiene and control, Faculty of Veterinary Medicine, Cairo University, for his valuable advice, help and guidance throughout the course of the thesis. Thank you for your supervision of this work and for kindly offer your experience and time for this work. He is a great teacher and father, without him I wouldn't be able to complete this work.

Special consideration must be referred to both ***Dr. Sherif Abd El Moneam and Dr. Ahmed Orabi,*** Department of Microbiology, Faculty of Veterinary Medicine, Cairo University, for their great help and kindness during this work.

To my late Father, my lovely Mother, Sisters and my little family

Content

List of Tables

List of Figures