

### Mona Maghraby

# بسم الله الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات قسم التوثيق الإلكتروني





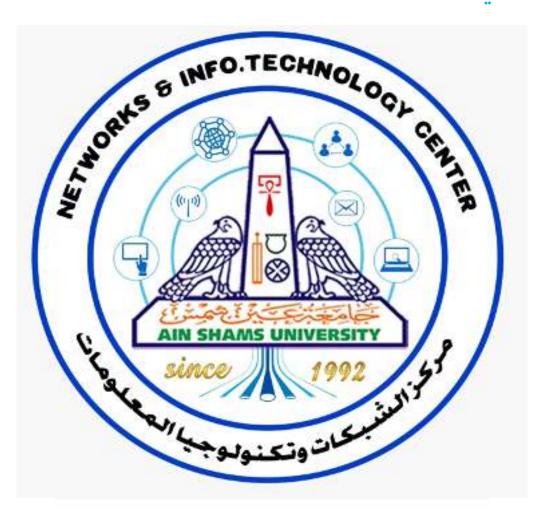


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## جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها على هذه الأقراص المدمجة قد أعدت دون أية تغيرات











# Detection of antibiotic and disinfectant resistance genes in *E.coli* isolated from chicken

A thesis submitted by

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Detection of antibiotic and disinfectant resistance genes in *E. coli* isolated from chicken

#### **Abstract**

Poultry is the most important economic face for Egypt industry. Colibacillosis consider a dangerous problem for poultry industry. Quaternary ammonium compounds (QACs) are widely distributed in poultry industry. Occurrence of qac and antibiotic resistant genes in E.coli isolated from chickens in Egypt were detected in the study. The incidence of E.coli in chicken was 34%. E.coli isolated were serologically identified commonly serogroups were O128, O111, O44, O158 and O2. Antibiogram pattern of E.coli revealed that 100% of isolates were resistant to ampicillin, erythromycin and sulfamethoxazole-trimethoprim, while were sensitive for colistin sulphate and levofloxacin with 73.53% and 38.23% respectively. Antibiotic resistance genes as tetA gene was tested for isolated E.coli and detected by incidence rate 91.18%. qac resistance genes resembling as gacED1 and gacA/B genes were detected in isolated E.coli 70.6% and 14.7% respectively, while qacC/D gene wasn't detected in all E.coli isolates by PCR. In conclusion, *E.coli* isolated from chickens in Egypt was carried both qac and antibiotic resistant genes that affect poultry industry.

**Key words:** E. coli, Chickens, Antimicrobial resistance, qac resistance genes, Egypt.

# I would like to dedicate this work to;

- ♥ My parents (**Abd El-fattah** and **Bothina**) for support, love, sacrifice, care and advice.
- **♥** My wife (**Yasmin**) for giving, effort and love.
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### List of abbreviations

APEC Avian Pathogenic *E.coli* 

CFU Colony Forming Unit

IROMPS Iron Regulated Outer Membrane Proteins

LPS Lipo Poly Saccharide

MDR Multi Drug Resistance

MIC Minimum Inhibitory Concentration

PCR Polymerase Chain Reaction

QAC Quaternary Ammonium Compounds

SHS Swollen Head Syndrome

SMR Small Multidrug Resistance

VAN Veterinary Antimicrobial Resistance Surveillance Network