



Molecular studies on antibiotic resistant Gram negative bacteria isolated from Neonatal Intensive Care Unit and their susceptibility to some medicinal plant extracts

Thesis submitted for a Ph.D. degree in Science (Microbiology)
(Medical bacteriology)

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Approval Sheet

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بسم الله الرحمن الرحيم

"قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم"

صدق الله العظيم

سورة البقرة الآية (32)

DEDICATION

I would like to dedicate this work to my beloved parents, sisters and my wife for their encouragement, cooperation, sincere help and support and also to my daughter wishing here a happy and successful life. Great thanks to all of them.

I would like to dedicate the benefit of this work to the soul of my grandfather.

Eslam Miklawye

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ABBREVIATIONS

(<i>A. baumannii</i>)	<i>Acinetobacter baumannii</i>
(API)	Analytical profile index
(AST)	Antimicrobial susceptibility testing
(BHI)	Brain Heart infusion
(<i>bla</i>)	β -lactamase
(CF)	Cystic fibrosis
(COPD)	Chronic obstructive pulmonary disease
(CS)	Conserved sequence
(CSF)	Cerebrospinal fluid
(CTX-M)	Cefotaxime hydrolyzing capabilities
(CVL)	Central venous line
(DNA)	Deoxyribonucleic acid
(EDTA)	Ethylenediaminetetraacetic acid
(EONS)	Early-onset neonatal sepsis
(ESBL)	Extended-spectrum- β -lactamase
(ETT)	Endotracheal tube
(EUCAST)	European Committee on Antimicrobial Susceptibility testing
(F)	Female
(FeCl)	Ferric Chloride

(I)	Intermediate
(ICU)	Intensive Care Unit
(<i>int</i>)	Integron
(<i>K. pneumoniae</i>)	<i>Klebsiella pneumonia</i>
(KPC)	<i>Klebsiella pneumonia</i> carbapenemase-producing
(M)	Male
(MDR)	Multi drug resistant
(MH)	Mueller-Hinton
(MHA)	Mueller Hinton Agar
(MIC)	Minimum inhibitory concentration
(NA)	Nutrient agar
(NaCl)	Sodium chloride
(NICU)	Neonatal Intensive Care Unit
(NIs)	Nosocomial infections
(PCR)	Polymerase chain reaction
(<i>Ps. aeruginosa</i>)	<i>Pseudomonas aeruginosa</i>
(R)	Resistance
(RNA)	Ribonucleic acid
(S)	Sensitive
(<i>S. maltophilia</i>)	<i>Stenotrophomonas maltophilia</i>
(SHV)	Sulfhydryl variable
(TEM)	Temoneira