



Ain Shams University
Faculty of Pharmacy
Microbiology & Immunology Department

Characterization of Multidrug Resistance Mechanisms of Some Bacterial Isolates

A Thesis

Submitted in Partial Fulfillment of the Requirements for the
Master Degree

In
Pharmaceutical Sciences
(**Microbiology and Immunology**)

By

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قسم الميكروبيولوجيا والمناعة

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Abbreviations

Abbreviation	Definition
ABC	ATP-binding cassette
ADH	Arginine dihydrolase
AMY	Amygdalin
APS	Ammonium per sulphate
ARA	Arabinose
ATP	Adenosine triphosphate
BSA	Bovine serum albumin
CBBR-250	Coomassie brilliant blue R-250
CCCP	Carbonyl cyanide m-chlorophenyl hydrazone
CFU	Colony forming unit
CIT	Citrate
Cip	Ciprofloxacin
CTX	Cefotaxime
DMT	Drug metabolite transporters
EARSS	European Antimicrobial Resistance Surveillance System
EPI	Efflux pump inhibitor
ESBLs	Extended spectrum β -lactamases
EtBr	Ethidium bromide
FDA	Food and drug administration
FIC	Fraction inhibitory concentration
FQ	Fluoroquinolones
GEL	Gelatinase
GISA	Glycopeptide-insensitive <i>S. aureus</i>
GLU	Glucose
HPA	Health protection agency
Hr	Hour
IM	Inner membrane
IND	Indole
INO	Inositol
IRT	Inhibitor-resistant TEM

Abbreviation	Definition
KDa	Kilodalton
LB	Luria Bertani
LDC	Lysine decarboxylase
LPS	Lipopolysaccharides
MAN	Mannitol
MATE	Multidrug and toxic compound extrusion
MDR	Multidrug resistance
MEL	Melibiose
MF	Major facilitator
MFP	Membrane fusion protein
MICs	Minimum inhibitory concentrations
Min	minute
MR	Methyl red
MRSA	Methicillin-resistant <i>Staph. aureus</i>
NCCLS	National Committee for Clinical Laboratory Standards.
Nm	Nanometer
OD	Optical density
ODC	Ornithine decarboxylase
OM	Outer membrane
OMP	Outer membrane proteins
ONPG	Ortho nitrophenyl- β D-galactopyranosidase
PBPs	Penicillin-binding proteins
PMF	Proton motive force
QRDR	Quinolone resistance-determining region
RHA	Rhamnose
RND	Resistance-nodulation-cell division
SAC	Sacharose
SDS	Sodium dodecyl sulfate
SMR	Small multidrug resistance
SOR	Sorbitol
TDA	Tryptophane deaminase
TEMED	N N N'N' tetra methylene diamine

Abbreviation	Definition
TMS	Transmembrane-spanning regions
UK	United kingdom
URE	Urease
VISA	Vancomycin-intermediate resistant <i>Staph.aureus</i> .
VP	Voges Proskauer reagent
µg	Microgram

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