

Phenotypic and Genotypic Detection of Oxacillinases in Carbapenem-Resistant Acinetobacter Species

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا انك لا تعلم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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List of Abbreviations

Abb.	Full term
<i>A. baumannii</i>	<i>Acinetobacter baumannii</i>
<i>AFLP</i>	<i>Amplified fragment length polymorphism</i>
<i>AIs</i>	<i>Auto inducers</i>
<i>AMEs</i>	<i>Aminoglycoside-modifying enzymes</i>
<i>AMS</i>	<i>Antimicrobial stewardship.</i>
<i>APBA</i>	<i>Aminophenyl boronic acid.</i>
<i>APIC</i>	<i>Association for professionals in infection control</i>
<i>ARDRA</i>	<i>Amplified rRNA gene restriction analysis</i>
<i>ASC</i>	<i>Active screening culture</i>
<i>AST</i>	<i>Antimicrobial susceptibility testing</i>
<i>ATCC</i>	<i>American type culture collection</i>
<i>ATP</i>	<i>Adenosine triphosphate</i>
<i>BA</i>	<i>Boronic Acid</i>
<i>CA</i>	<i>Clavulanic Acid</i>
<i>CDC</i>	<i>Centre for disease prevention and control</i>
<i>CDT</i>	<i>Combination disc test</i>
<i>CFU</i>	<i>Colony forming unit</i>
<i>CHDLs</i>	<i>Carbapenem-hydrolyzing class D β-lactamases.</i>
<i>CHG</i>	<i>Chlorhexidine gluconate</i>
<i>CHLOs</i>	<i>Carbapenem hydrolyzing oxacillinases.</i>
<i>Ci PA</i>	<i>Complement inhibitory protein A</i>
<i>CLSI</i>	<i>Clinical and laboratory standards institute</i>
<i>CMS</i>	<i>Colistimethate sodium</i>
<i>CP</i>	<i>Contact precautions</i>
<i>CPE</i>	<i>Carbapenemase-producing Enterobacteriaceae</i>
<i>CPGNB</i>	<i>Carbapenemase-producing Gram-negative bacilli.</i>
<i>CRA</i>	<i>Carbapenem resistant Acinetobacter</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>CRAB</i>	<i>Carbapenem resistant Acinetobacter baumannii</i>
<i>CRE</i>	<i>Carbapenem resistant Enterobacteriaceae</i>
<i>CRGNB</i>	<i>Carbapenem resistant gram negative bacteria.</i>
<i>CSMS</i>	<i>Chaperon secretion membrane systems</i>
<i>CST</i>	<i>Colistin</i>
<i>Ct</i>	<i>Cycle threshold</i>
<i>DD</i>	<i>Disc diffusion</i>
<i>DDST</i>	<i>Double disc synergy test</i>
<i>DNA</i>	<i>Deoxyribonucleic Acids.</i>
<i>DPA</i>	<i>Dipicolinic acid</i>
<i>ECDC</i>	<i>European Centre for Disease Prevention and Control</i>
<i>EDTA</i>	<i>Ethylene diamine tetra-acetic acid</i>
<i>ESBL</i>	<i>Extended spectrum beta lactamase</i>
<i>E-test</i>	<i>Epsilometer test</i>
<i>EUCAST</i>	<i>European committee of antimicrobial susceptibility testing</i>
<i>FDA</i>	<i>Food and Drug Administration</i>
<i>GES</i>	<i>Guiana extended spectrum</i>
<i>GNB</i>	<i>Gram negative bacilli</i>
<i>HA</i>	<i>Herellea agar</i>
<i>HCWs</i>	<i>Health care workers.</i>
<i>HH</i>	<i>Hand hygiene</i>
<i>HICPAC</i>	<i>Healthcare infection control practice advising committee.</i>
<i>HMM</i>	<i>High Molecular Mass</i>
<i>HMP</i>	<i>Heat-modifiable protein</i>
<i>ICU</i>	<i>Intensive care unit</i>
<i>IL</i>	<i>Interleukin</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>IMI</i>	<i>Imipenem-hydrolyzing β-lactamases</i>
<i>IPC</i>	<i>Infection prevention and control</i>
<i>IPM</i>	<i>Imipenem</i>
<i>IRAB</i>	<i>Imipenem resistant Acinetobacter baumannii</i>
<i>KC</i>	<i>Chemokines</i>
<i>KPC</i>	<i>Klebsiella pneumoniae carbapenemase</i>
<i>LAMP</i>	<i>Loop-mediated isothermal amplification.</i>
<i>LC</i>	<i>Liquid chromatography</i>
<i>LMM</i>	<i>Low Molecular Mass</i>
<i>LPS</i>	<i>Lipopolysaccharides</i>
<i>MALDI-TOF</i>	<i>Matrix-assisted laser desorption ionization time of flight</i>
<i>MAPK</i>	<i>Mitogen activated protein kinase</i>
<i>MBL</i>	<i>Metallo-β-lactamase</i>
<i>mCIM</i>	<i>Modified carbapenem inactivation method</i>
<i>MDR</i>	<i>Multidrug resistant</i>
<i>MDRAB</i>	<i>Multidrug resistant Acinetobacter baumannii</i>
<i>MDRGNB</i>	<i>Multidrug resistant gram negative bacteria.</i>
<i>MHT</i>	<i>Modified Hodge Test</i>
<i>MIC</i>	<i>Minimal inhibitory concentration</i>
<i>MIP</i>	<i>Macrophage inflammatory protein</i>
<i>MRSA</i>	<i>Methicillin Resistant Staphylococcus Aureus</i>
<i>MS</i>	<i>Mass Spectrophotometry</i>
<i>NCCLS</i>	<i>National committee for clinical laboratory standards</i>
<i>NDM</i>	<i>New Delhi metallo-β lactamase</i>
<i>NF-KB</i>	<i>Nuclear factor kappa B</i>
<i>NGS</i>	<i>Next generation sequencing</i>
<i>NMC</i>	<i>Non metalloenzyme carbapenemase</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>OF</i>	<i>Oxidation-fermentation</i>
<i>OMP</i>	<i>Outer membrane protein</i>
<i>Opr</i>	<i>Outer membrane porin</i>
<i>OXA</i>	<i>Oxacillinases enzymes</i>
<i>PAE-MHT</i>	<i>Pseudomonas aeruginosa modified Hodge test</i>
<i>PBPs</i>	<i>Penicillin binding proteins</i>
<i>PCR</i>	<i>Polymerase chain reaction</i>
<i>PHAC</i>	<i>Public health agency of Canada</i>
<i>PPE</i>	<i>Personal protective equipment.</i>
<i>QS</i>	<i>Quorum sensing</i>
<i>RCS</i>	<i>Rapid CARB screen.</i>
<i>RFLP</i>	<i>Restriction fragment length polymorphisms</i>
<i>RND</i>	<i>Resistance nodulation division</i>
<i>RNS</i>	<i>Reactive nitrogen species</i>
<i>ROS</i>	<i>Reactive oxygen species</i>
<i>r-RNA</i>	<i>Ribosomal RNA</i>
<i>RT-PCR</i>	<i>Real Time- Polymerase chain reaction</i>
<i>SaPr</i>	<i>Surface adherence protein regions</i>
<i>SIM</i>	<i>Seoul imipenemase</i>
<i>SME</i>	<i>Serratia marcescens enzyme</i>
<i>TGC/TIG</i>	<i>Tigecycline</i>
<i>TLR</i>	<i>Toll like receptor</i>
<i>T_m</i>	<i>melting temperature</i>
<i>TNF</i>	<i>Tumor necrosis factor</i>
<i>TSB</i>	<i>Tryptic Soy Broth</i>
<i>TZB</i>	<i>Tazobactam</i>
<i>UV</i>	<i>Ultraviolet.</i>
<i>VAP</i>	<i>Ventilator associated pneumonia</i>
<i>VIM</i>	<i>Verona integron-encoded metallo-β-lactamases</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>Vtx</i>	<i>Verotoxins</i>
<i>WGS</i>	<i>Whole genome sequencing</i>
<i>XDR</i>	<i>Extensively drug resistant</i>
<i>XDRAB</i>	<i>Extensively drug resistant Acinetobacter baumannii</i>

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