

List of Figures

Figure 1.1: Schematic representation of <i>P. aeruginosa</i> biofilm formation.	8
Figure 1.2: <i>P. aeruginosa</i> cell death and eDNA release mechanism in extracellular environment.....	10
Figure 1.3: Schematic representation of bacterial biofilm resistance.	12
Figure 1.4: Schematic representation of biphasic killing pattern.....	14
Figure 1.5: Stringent response and persister cell formation in <i>P. aeruginosa</i>	17
Figure 1.6: Schematic representation of <i>P. aeruginosa</i> HigBA regulation.	18
Figure 1.7: Role of SagS in <i>P. aeruginosa</i> 's transition from motile to sessile and susceptible to resistance.....	21
Figure 1.8: BrlR activation and its regulation.....	22
Figure 1.9 Structure and function of <i>P. aeruginosa</i> of RND efflux pump.	24
Figure 3.1: Representative images of bacterial isolates on PIA.....	30
Figure 3.2: Gram staining.	31
Figure 3.3: A 0.8% agarose gel electrophoresis of extracted DNA.....	32
Figure 3.4: A 0.8% agarose gel electrophoresis of 16S rRNA gene amplification.	33
Figure 3.5: A 0.8% agarose gel electrophoresis of 16S rRNA gene amplification.	33
Figure 3.6: Phylogenetic tree of pathogenic <i>Pseudomonas aeruginosa</i> isolates (n=22).	36
Figure 4.1: Biofilm quantification.	52
Figure 4.2: Biofilm quantification on catheters.	53
Figure 4.3: FEG-SEM of biofilm.	54
Figure 4.4: Cell adhesion.....	55
Figure 4.5: Twitching motility.....	57
Figure 4.6: CLSM of biofilm formed by strong and weak biofilm producers.....	58
Figure 4.7: Quantification of biofilm matrix components.	60

Figure 4.8: Effect of exogenous treatment on biofilm formation.	61
Figure 5.1: Planktonic kill curve assay.	84
Figure 5.2: Cellular Redox activity within the planktonic stage.	86
Figure 5.3: Fluorescence Microscopy of PCs within the planktonic stage.....	88
Figure 5.4: The gene expression studies in the planktonic stage.	90
Figure 5.5: Biofilm quantification.	91
Figure 5.6: Biofilm kill curve assay.	92
Figure 5.7: Cellular Redox activity within the biofilm stage.	94
Figure 5.8: CLSM of PCs within the biofilm stage.	95
Figure 5.9: The gene expression studies in the biofilm stage.	97
Figure 5.10: Gene alignment of <i>sagS</i>.....	100
Figure 5.11: Gene alignment of <i>nalD</i> gene.....	100
Figure 5.12: Biofilm quantification.	102
Figure 5.13: Biofilm susceptibility assay.....	103
Figure 5.14: Pyocyanin quantification.	104
Figure 5.15: Gene Expression studies of biofilm-mediated antibiotic resistance.	105
Figure 8.1: Gene expression of <i>cdrA</i>.	124