TABLE OF CONTENTS

Contents	Page		
	No.		
Abbreviations			
List of Tables	Х		
List of Figures	xi-xiii		
Chapter 1: Introduction and objectives	1-14		
1.1 Surfactant	1		
1.1.1. Classification	2		
1.1.2. Surfactant Uses	3		
1.2 Biosurfacatants	4		
1.2.1. Market value of Biosurfactant	6		
1.3. Thesis Objectives	9		
1.4. Organization of thesis	13		
Chapter 2: Review of literature	15-45		
2.1. Biosurfactant	15		
2.1.1. Biosurfactants: mechanisms of interaction	16		
2.1.2. Biosynthesis	17		
2.2. Types of Biosurfactant	18-24		
2.3. Applications of Biosurfactants	25		
2.3.1. Microbial enhanced oil recovery	25		
2.3.2. Biomedical and therapeutic applications of biosurfactants	28		
2.3.3. Heavy Metal Removal by Biosurfactants	32		
2.3.4. Biosurfactants as Pesticide	33		
2.3.5. Use in cosmetic industry	35		
2.3.6. Use In food industry	36		
2.4. Recovery Methods	37		

2.5. Estimation methods

Chapter 3: Acclimatization of strain in high hydrocarbon condition and Optimization of media composition and other factors using one-factor- at-a-time strategy and biostatistical analysis for biosurfactant	46-76
production	46-59
Section A: Acclimatization of microbial strain at high hydrocarbon condition and its Optimization using one-factor-at-a-time strategy for biosurfactant production.	
3.1. Introduction	46
3.2. Materials and methods	48
3.3. Results and Discussion	50
3.4. Conclusion	58
Section B: Optimization of media composition and other factors for biosurfactant production using biostatistical analysis (Response Surface Methodology).	60-76
3.5. Introduction	60
3.6. Materials and methods	61
3.7. Results and Discussion	67
3.8. Conclusion	75

Chapter 4: Characterization and physicochemical properties of 77-101 **biosurfactant produced from an adaptive strain for microbial enhanced oil recovery (MEOR)**

was studied by using computational approaches			
Chapter 5: <i>InSilico</i> study: effect of surfactin against amyloid β peptide			
4.4. Conclusion	100		
4.3. Results and Discussion	84		
4.2. Materials and methods	79		
4.1. Introduction	77		

5.1.	Introduction	10	2

5.2. Materials and methods	105
5.3. Results and Discussion	107
5.4. Conclusion	117
Chapter 6: Radiological: Pre-clinical Comparative study of microbial derived surfactants with survanta for treatment of Respiratory Distress Syndrome (RDS)	118-131
6.1. Introduction	118
6.2. Materials and methods	121
6.3. Results and Discussion	123
6.4. Conclusion	130
Chapter 7: Summary of work	132-137
References	138-163
List Of Publications	164-165