Contents

Abstract
Abbreviation vi
List of Figures ix
List of tables xii

1.0. INTRODUCTION 1
1.1. Drug Delivery Systems 1
1.2. Biodegradable Polymeric Systems 1
1.2.1. Polysaccharide Polymers 2
1.2.2. Proteinic Polymers 5
1.2.3. Synthetic Polymers 23
1.3. Candidiasis 32

2.0. MATERIALS AND METHODS 43
2.1. Materials 43
2.1.1. Chemicals 43
2.1.2. Animals 43
2.2. Methods 44
2.2.1. Bleeding of Animals and Isolation of Plasma/Serum 44
2.2.2. Evaluation of Clotting Time of Plasma 44
2.2.3. Preparation of Plasma Beads 44
2.2.4. In vitro Release of Entrapped Constituents from Plasma Beads 45
2.2.5. Spectrophotometric and colorimetric analysis 45
2.2.5.1. Quantitation of the drugs 45
2.2.5.2. Protein estimation 45
2.2.6. HPLC analysis of cefotaxime 46
2.2.6.1. Cefotaxime analysis in plasma 47
2.2.6.2. Cefotaxime analysis in tissues

2.2.7. Vaccination of mice against *C. albicans* infection

2.2.7.1. Preparation of cytosolic antigen

2.2.7.2. Preparation of liposome based Cp antigen

2.2.7.3. Preparation of PLGA microsphere based Cp antigen

2.2.7.4. Immunization of the mice

2.2.8. Enzyme Linked Immunosorbant assays

2.2.8.1. Measurement of Cp specific IgG

2.2.8.2. Cp specific IgG isotypes

2.2.8.3. Splenocytes proliferation assay

2.2.8.4. Gamma-interferon (IFN-γ) levels

2.2.8.5. Interleukin-4 (IL-4) levels

2.2.9. Measurement of DTH response

2.2.10. Detection of NO concentration

2.2.11. Staining for T cell, and co-stimulatory surface markers

2.2.12. Assessment of protection against challenge with *C. albicans*

2.2.13. Determination of fungal load in blood, kidney and spleen

2.2.14. SDS-PAGE analysis of the protein

2.2.15. Statistical Analysis

3.0. RESULTS

3.1. Preparation of beaded plasma clots stabilized by crosslinked Fibrin and evaluation of their drug release behavior

3.2. Studies on the efficacy PC/Chol Liposomes crosslinked plasma beads as *C. albicans* Antigen delivery system

3.3. Studies on the potential of PLGA microsphere and Fibrin crosslinked plasma beads as *C. albicans* Antigen delivery system

4.0. DISCUSSION

5.0. BIBLIOGRAPHY