

<b>Table of Contents</b>	<b>Page No.</b>
List of Tables	I - II
List of Figures	III - IV
<b>1. Chapter 1: Introduction</b>	<b>1 - 10</b>
1.1. Introduction	1
1.2. Objective and Rationale	6
1.3. Plan of work	7
1.4. References	9
<b>2. Chapter 2 : Literature Review</b>	<b>11 - 55</b>
2.1. Nanoparticles	11
2.2. Polymeric Nanoparticles	11
2.3. Nose to Brain delivery using Polymeric Nanoparticles	24
2.4. Alzheimer's disease: Pathophysiology	34
2.5. Current therapies for Alzheimer's disease	39
2.6. Drug Profile of Galantamine Hydrobromide	43
2.7. Drug Profile of Bapineuzumab	47
2.8. References	48
<b>3. Chapter 3: Analytical Methods</b>	<b>56-76</b>
3.1. Materials	56
3.2. Calibration and interaction study for Galantamine	56
3.3. Results and discussion of calibration and interaction study for Galantamine hydrobromide	57
3.4. Estimation of Galantamine hydrobromide by High Performance Liquid Chromatography in plasma	61
3.5. Results and discussion for High Performance Liquid Chromatography of Galantamine hydrobromide	62
3.6. Analytical Method for Bapineuzumab	66
3.7. General procedure for separation of modified and unmodified antibody	67
3.8. Results and discussion for separating modified from unmodified antibodies	68
3.9. Method validation for separation of modified antibody from unmodified antibody	70
3.10. Estimation of free Bapineuzumab after formulation of nanoparticles	72
3.11. Results and discussions for estimation of free Bapineuzumab	73
3.12. References	75
<b>4. Chapter 4 Experimental Galantamine loaded Nanoparticles</b>	<b>77 - 120</b>
4.1. Introduction	77
4.2. Materials	80
4.3. Equipment's and Instruments	81
4.4. Formulation of Galantamine HBr loaded nanoparticles by Desolvation-Thermal Gelation Method	81
4.5. Lyophilization of Galantamine hydrobromide Loaded Nanoparticles and Optimization of Cryoprotectant	92
4.6. Characterization of Galantamine hydrobromide loaded Nanoparticles	92

<b>Table of Contents</b>	<b>Page No.</b>
4.7. Results and discussions	96
4.8. Lyophilization of Galantamine hydrobromide loaded nanoparticles	117
4.9. References	118
<b>5. Chapter 5 Experimental Bapineuzumab loaded Nanoparticles</b>	<b>121 - 141</b>
5.1. Introduction	121
5.2. Materials	123
5.3. Equipment's and Instruments	124
5.4. Formulation of Bapineuzumab loaded nanoparticles by surface modification of Bovine Serum Albumin nanoparticles	124
5.5. Lyophilization of Bapineuzumab Loaded Nanoparticles and Optimization of Cryoprotectant	126
5.6. Characterization of Bapineuzumab loaded nanoparticles	127
5.7. Results and discussion	129
5.8. Lyophilization of Bapineuzumab loaded nanoparticles	138
5.9. References	140
<b>6. Chapter 6 Cell Line Studies</b>	<b>142 - 155</b>
6.1. Histopathological Studies	142
6.2. Cell line studies	144
6.3. Cellular uptake and toxicity studies for nose to brain nanoparticles	145
6.4. Materials	147
6.5. Methods	147
6.6. Results and discussions	149
6.7. References	155
<b>7. Chapter 7 In vivo studies</b>	<b>156 - 170</b>
7.1. Introduction	156
7.2. Animals	157
7.3. In vivo Pharmacokinetics Studies for Galantamine hydrobromide loaded Nanoparticles	157
7.4. In vivo study for passive immunization with Bapineuzumab nanoparticles	164
7.5. References	170
<b>8. Chapter 8 Summary and Conclusion</b>	<b>171 - 179</b>