

## LIST OF TABLES

Table No.	Table Caption	Page No.
<b>Chapter 2: Literature Review</b>		
2.1	Current medications used in asthma and CPOD	18
2.2	List of nebulizers with novel advanced technologies	33
2.3	Different types of modifications of chitosan for gene delivery	40
2.4	Clinical trials of RNAi therapeutics in respiratory diseases	42
<b>Chapter 3: siRNA Profiling and Analytical Method Development</b>		
3.1	siRNA concentration obtained at 260 nm	66
3.2	Results of accuracy measurements	67
3.3	Intraday and Interday precision of the method	67
3.4	Optimized parameters for agarose gel electrophoresis	68
3.5	Relative band densities at different siRNA concentrations	70
<b>Chapter 4: Development of Chitosan based non viral vectors</b>		
4.1	Nomenclature of Heterocyclic moieties conjugated TMC	78
4.2	Degree of Quaternization of trimethylated chitosan	86
4.3	Degree of conjugation of Heterocyclic moieties on TMC	93
<b>Chapter 5: Development of Polyethylenimine based non viral vectors</b>		
5.1	Nomenclature of synthesized polymers	104
5.2	Degree of conjugation of Urocanic acid on PEI	110
<b>Chapter 6: Formulation Development and Characterization</b>		
6.1	Treatment parameters for confocal microscopy and FACS for modified TMCs based polyplex formulations in A549 cell line	126
6.2	Treatment parameters for confocal microscopy and FACS for modified PEI based polyplex formulations in A549 cell line	126
6.3	Complexation efficiencies of polyplexes formulations	136
6.4	Particle size and zeta potential of formulations	138
6.5	Cell uptake of different polyplexes formulations	153
6.6	Electrolyte induced flocculation of polyplexes formulations	156

6.7	Serum stability of polyplexes	160
6.8	Polyplexes stability in Bronchoalveolar lavage fluid	162
<b>Chapter 7: Nebulized siRNA delivery and Characterization</b>		
7.1	Technical parameters of Ultrasonic Nebulizer B3-520	169
7.2	<i>In vitro</i> aerosolization performance of nebulized formulations	172
7.3	Particle size and zeta potential post nebulization	175
<b>Chapter 8: Animal Studies</b>		
8.1	Groups of animals for efficacy study	181
8.2	Details of primers	184
8.3	RNA to cDNA conversion parameters	185
8.4	Steps of PCR cycle	186
8.5	mRNA quantification-reaction parameters	186
8.6	Details of RT-PCR cycle steps	187
8.7	Gene expression (%) of BDNF mRNA in OVA induced inflammatory mice	189