

LIST OF TABLES

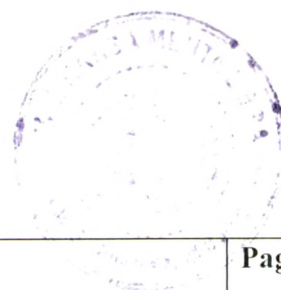


Table No.	Title	Page No.
Table:2.1	Nose-to-brain transport of drug molecules and possible pathways	36
Table:2.2	Application of chitosan in the pharmaceutical field	48
Table:2.3	Criteria for ideal polymeric carriers for nanoparticles & nanoparticles delivery systems	53
Table:2.4	Application of trimethyl chitosan	75
Table:2.5	US patents of quaternized chitosan	76
Table:3.1	List of materials and equipments	96
Table:3.2	Calibration for Tizanidine HCl in distilled water	98
Table:3.3	Evaluation of accuracy and precision of the estimation method of Tizanidine HCl	98
Table:3.4	Calibration for Tizanidine HCl in phosphate buffer (pH 5)	99
Table:3.5	Evaluation of accuracy and precision of the estimation method of Tizanidine HCl	100
Table:3.6	Calibration for Cyclobenzaprine HCl in distilled water	101
Table:3.7	Evaluation of accuracy and precision of the estimation method of Cyclobenzaprine HCl	102
Table:3.8	Calibration for Cyclobenzaprine HCl in phosphate buffer (pH 5)	103
Table:3.9	Evaluation of accuracy and precision of the estimation method of Cyclobenzaprine HCl	103
Table:3.10	Calibration for Tizanidine HCl	105
Table:3.11	Evaluation of accuracy and precision of the estimation method of Tizanidine HCl	106
Table:3.12	Calibration for Cyclobenzaprine HCl	107
Table:3.13	Evaluation of accuracy and precision of the estimation method of Cyclobenzaprine HCl	108
Table:3.14	Calibration for Rhodamine B in distilled water	109
Table:3.15	Evaluation of accuracy and precision of the estimation method of Rhodamine B	110
Table:4.1	Amount of reagents used for the reaction mixtures in order to evaluate the influence of the chitosan to thioglycolic acids as well as the pH on the share of immobilized thiol group in mmol	115
Table:4.2	Characteristic of the interaction between ss-mucin particles with the modified and unmodified chitosan	124

Table:4.3	The characteristics of chitosan and trimethyl chitosan	126
Table:4.4	Characteristic of the interaction between ss-mucin particles with the modified and unmodified chitosan	132
Table:5.1	Materials and Equipments	136
Table:5.2	Variables in Box Behnken Design	139
Table:5.3	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMC-TZ NPs	139
Table:5.4	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMC-CBZ NPs	140
Table:5.5	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMC-TZ NPs	140
Table:5.6	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMC-CBZ NPs	141
Table:5.7	Effect of pH on optimal batch	142
Table:5.8	Analysis of Variance for BBD Model of LMC-TZ NPs	153
Table:5.9	Analysis of Variance for BBD Model of LMC-CBZ NPs	153
Table:5.10	Analysis of Variance for BBD Model of MMC-TZ NPs	153
Table:5.11	Analysis of Variance for BBD Model of MMC-CBZ NPs	153
Table:5.12	Variables in Box Behnken Design	156
Table:5.13	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMTC-TZ NPs	157
Table:5.14	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMTC-CBZ NPs	158
Table:5.15	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMTC-TZ NPs	159
Table:5.16	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMTC-CBZ NPs	160
Table:5.17	Analysis of Variance for BBD Model of LMTC-TZ NPs	180
Table:5.18	Analysis of Variance for BBD Model of LMTC-CBZ NPs	180
Table:5.19	Analysis of Variance for BBD Model of MMTC-TZ NPs	180
Table:5.20	Analysis of Variance for BBD Model of MMTC-CBZ NPs	181
Table:5.21	Variables in Box Behnken Design	182
Table:5.22	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMTMC-TZ NPs	183
Table:5.23	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for LMTMC-CBZ NPs	184

Table:5.24	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMTMC-TZ NPs	185
Table:5.25	Matrix of Box Behnken Design, Particle size response and Entrapment Efficiency of each experimental run for MMTMC-CBZ NPs	186
Table:5.26	Analysis of Variance for BBD Model of LMTMC-TZ NPs	206
Table:5.27	Analysis of Variance for BBD Model of LMTMC-CBZ NPs	206
Table:5.28	Analysis of Variance for BBD Model of MMTMC-TZ NPs	206
Table:5.29	Analysis of Variance for BBD Model of MMTMC-CBZ NPs	207
Table:5.30	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMC-TZ NPs and MMC-TZ NPs)	208
Table:5.31	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMC-CBZ NPs and MMC-CBZ NPs)	209
Table:5.32	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMTC-TZ NPs and MMTC-TZ NPs)	210
Table:5.33	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMTC-CBZ NPs and MMTC-CBZ NPs)	211
Table:5.34	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMTMC-TZ NPs and MMTMC-TZ NPs)	212
Table:5.35	Effect of different cryoprotectants on the particle size and redispersion of NPs (LMTMC-CBZ NPs and MMTMC-CBZ NPs)	213
Table:6.1	Materials and Equipments	244
Table:6.2	Characterization of optimized chitosan, thiolated chitosan and trimethyl chitosan NPs	248
Table:7.1	Stability studies data of LMC-TZ NPs & LMC-CBZ NPs	274
Table:7.2	Stability studies data of MMC-TZ NPs & MMC-CBZ NPs	275
Table:7.3	Stability studies data of LMTC-TZ NPs & LMTC-CBZ NPs	276
Table:7.4	Stability studies data of MMTC-TZ NPs & MMTC-CBZ NPs	277
Table:7.5	Stability studies data of LMTMC-TZ NPs & LMTMC-CBZ NPs	278
Table:7.6	Stability studies data of MMTMC-TZ NPs & MMTMC-CBZ NPs	279
Table:8.1	Materials and equipments	289
Table:8.2	Cell viability of different molecular weight chitosan thiolated chitosan, trimethyl chitosan, HBSS-HEPES and Triton-X 100 (100 microliter/2 ml)	294
Table:8.3	Cell viability of different molecular weight chitosan/thiolated chitosan/trimethyl chitosan NPs	295
Table:8.4	TEER Values of RPMI 2650 Cell monolayer at different time intervals	298
Table:8.5	TEER Values of RPMI 2650 Cell monolayer at different time intervals	298

Table:8.6	Apparent Permeability Coefficients (Papp) of TZ/CBZ formulations across the RPMI 2650 cell monolayer	299
Table:9.1	Influence of incubation time on the labeling efficiency of ^{99m} Tc-tizanidine HCl formulations	311
Table:9.2	Influence of incubation time on the labeling efficiency of ^{99m} Tc-cyclobenzaprine HCl formulations	311
Table:9.3	Influence of the amount of Stannous Chloride on the Labelling Efficiency of ^{99m} Tc-tizanidine HCl formulations	311
Table:9.4	Influence of the amount of Stannous Chloride on the Labelling Efficiency of ^{99m} Tc-cyclobenzaprine HCl formulations	312
Table:9.5	<i>In-vitro</i> stability of ^{99m} Tc-tizanidine HCl formulations in 0.9%w/v sodium chloride	312
Table:9.6	<i>In-vitro</i> stability of ^{99m} Tc-tizanidine HCl formulations in mice serum at 37°C	312
Table:9.7	<i>In-vitro</i> stability of ^{99m} Tc-cyclobenzaprine HCl formulations in 0.9%w/v sodium chloride	313
Table:9.8	<i>n-vitro</i> stability of ^{99m} Tc- cyclobenzaprine HCl formulations in mice serum at 37°C	313
Table:9.9	Effect of Variable molar concentration of DTPA on radiolabeled ^{99m} Tc-tizanidine HCl formulations	313
Table:9.10	Effect of Variable molar concentration of DTPA on radiolabeled ^{99m} Tc-cyclobenzaprine HCl formulations	313
Table:9.11	Tissue/organ distributions of ^{99m} TC-TZ/CBZ solution in swiss albino mice at predetermine time intervals of intravenous, oral and intranasal administration	314
Table:9.12	Tissue/organ distributions of ^{99m} TC-LMC-TZ NPs/MMC-TZ NPs/LMTC-TZ NPs/MMTC-TZ NPs/LMTMC-TZ NPs/MMTMC-TZ NPs in swiss albino mice at predetermine time intervals of intranasal administration	315
Table:9.13	Tissue/organ distributions of ^{99m} TC-LMC-CBZ NPs/MMC-CBZ NPs/LMTC-CBZ NPs/MMTC-CBZ NPs/LMTMC-CBZNPs/MMTMC-CBZ NPs in swiss albino mice at predetermine time intervals of intranasal administration	316
Table:9.14	Blood/brain ratio of ^{99m} TC-TZ/CBZ solution in swiss albino mice at predetermine time intervals of intravenous, oral and intranasal administration	317
Table:9.15	Blood/brain ratio of ^{99m} TC-LMC-TZ NPs/MMC-TZ NPs/LMTC-TZ NPs/MMTC-TZ NPs/LMTMC-TZ NPs/MMTMC-TZ NPs in swiss albino mice at predetermine time intervals of intranasal administration	318

Table:9.16	Blood/brain ratio of ^{99m}Tc -LMC-CBZ NPs/MMC- CBZ NPs/LMTCCBZ NPs/MMTC- CBZ NPs/LMTMC- CBZNPs/MMTMC- CBZ NPs in swiss albino mice at predetermine time intervals of intranasal administration.	319
Table:9.17	Pharmacokinetics parameters of ^{99m}Tc -TZ solution/CBZ solution/ LMC-TZ NPs/MMC-TZ NPs/LMTC-TZ NPs/MMTC-TZ NPs/LMTMC-TZ NPs/MMTMC-TZ NPs/ LMC-CBZ NPs/MMC- CBZ NPs/LMTC- CBZ NPs/MMTC- CBZ NPs/LMTMCCBZ NPs/MMTMC- CBZ NPs	322
Table:9.18	Brain targeting efficiency and Direct nose to brain transport percentage following intranasal administration of ^{99m}Tc -TZ solution/Cyclobenzaprine solution/LMC-TZ NPs/MMC-TZ NPs/LMTC-TZ NPs/MMTC-TZ NPs/LMTMC-TZNPs/MMTMC-TZ NPs/ LMC-CBZ NPs/MMC-CBZ NPs/LMTC-CBZ NPs/MMTCCBZ NPs/LMTMC- CBZ NPs/MMTMC- CBZ NPs	323