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Lipid Drug Delivery Systems for Brain Targeting

A thesis submitted in the partial fulfillment of the requirements for the master degree of Pharmaceutical Sciences
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Contents

Item	Page
List of Abbreviations	
List of Tables	
List of Figures	
Abstract	i
General Introduction	1
Scope of Work	25
Chapter I: Preliminary study for optimization of various formulation parameters for the preparation of anionic plain SLNs • Introduction	27
• Experimental	42
 Materials 	42
• Apparatus	42
 Pre-formulation Screening Preparation of plain SLNs Lipid selection study for preparing SLNs Method of preparation of SLNs 	43
 Characterization of the prepared plain SLNs Particle size analysis Zeta Potential (ζ) 	46
• Results and Discussion	47
 Screening study 	47
 Particle size and polydispersity index 	48
 Zeta potential (ξ) 	49
 Selected SLN Formulations Particle size and poly dispersity index 	52
\circ Zeta potential (ξ)	53
• Conclusion	57

Chapter II: Preparation and evaluation of Galantamine hydrobromide
loaded anionic, cationic and chitosan SLNs
• Introduction

•	Introduction	58
•	Experimental	61
	Materials	61
	• Equipment	
	• Methods	62
	o Preparation of medicated SLNs	62
	 Characterization of the prepared SLNs 	65
	 Morphology and surface properties Dynamic Light Scattering Measurements Transmission Electron Microscope (TEM) 	
	 Determination of entrapment efficiency (EE) Construction of calibration curves of GalHBr Calculation of GalHBr EE% 	66
	 In vitro Release Study of GalHBr from SLNs 	65
	 Differential scanning calorimetry 	66
	 Statistical analysis 	68
•	Results and Discussion	69
	 Calibration curve of GalHBr 	69
	 Effect of SDC-drug loading on particle size of SLNs 	73
	 Effect of SDC-drug loading on (ζ) of SLNs 	73
	Effect of SDC - drug loading on PDI	74
	■ Effect of different factors on SDC-GalHBr SLNs characteristics	77
	o Particle size	77
	Zeta Potential (ξ)	85
	 Poly dispersity index (PDI) 	92
	 Entrapment efficiency (EE%) 	92
	o In vitro drug release from GalHBr loaded SLNs	93
	■ Characterization of Cationic GalHBr SLNs	104
	 Characterization of the chosen GalHBr loaded cationic SLNs z-Average diameter Zeta Potential (ξ) 	106 107

 Entrapment efficiency (EE%) 	107
o In-vitro drug release from GalHBr loaded cationic SLNs	108
 Development and Optimization of Cs-SLNs 	113
 Characterization of GalHBr loaded CS SLNs 	116
■ Transmission Electron Microscope (TEM)	123
■ Differential Scanning Calorimetry (DSC)	126
• Conclusion	132
Chapter III: Biological studies on Galantamine Hydrobromide loaded	
anionic, cationic and chitosan SLNs formulations	
• Introduction	134
• Experimental	140
• Materials	140
• Animals	140
• Apparatus	140
• Methods	141
o Assay of GalHBr in rat plasma and brain	141
 Chromatographic conditions 	141
 Validation of the method 	142
 Calibration curves for GalHBr in rat plasma and brain 	142
 Pharmacokinetic and brain transport studies 	143
 Administration of GalHBr to rats 	143
 Pharmacokinetic analysis 	144
 Transport study using the <i>in-vivo</i> rat model 	144
 Statistical analysis 	145
 Histopathological studies 	145
• Results and Discussion	146
 LC-MS/MS method validation 	146
 Pharmacokinetic and brain transport studies 	151
 Plasma pharmacokinetic parameters 	151

 Brain pharmacokinetic parameters 	161
 Transport study using in vivo rat model 	170
 Histopathological studies 	173
• Conclusion	177
Summary	179
References	185
Appendix I.	
Ethical committee approval for in-vivo studies	
Appendix II.	
Published paper	
Arabic Summary	

List of Abbreviations

AB Absolute bioavailability

AD Alzehimer's disease

ANOVA Analysis of variance

APP Amyloid precursor protein

AUC Area under the curve

BBB Blood Brain Barrier

BCSFB Blood–cerebrospinal fluid barrier

C_{max} Maximum concentration of drug

CMT Carrier mediated transport

CNS Central nervous system

CS Chitosan

CSF Cerebrospinal fluid

DLS Dynamic light scattering

DSC Differential scanning calorimetry

DTE Drug targeting efficiency

DTP Nose to brain direct transport percentage

EE Entrapment efficiency

GalHBr Galantamine hydrobromide

GMS Glyceryl monostearate

GRAS Generally regarded as safe

Grp Group

HLB Hydrophile-lipophile balance

HPLC High performance liquid chromatography

IN Intranasal

IS Internal standard

IV Intravenous

LC-MS/MS Liquid chromatography tandem mass spectrometry

min Minutes

MRT Mean residence time

NA Not applicable

NLCs Nanostructured lipid carriers

NPs Nanoparticles

PBS Phosphate buffer saline

PDI Polydispersity index

P-gp P-glycoproteinPlx1888 Poloxamer188

PS Particle size

RE Release efficiency

RMT Receptor mediated transport

rpm Rotation per minute

SA Stearylamine

SD Standard deviation

SDC Sodium deoxycholate

SE Standard error

SLNs Solid lipid nanoparticles

 $\mathbf{t}_{1/2}$ Half life time

TEM Transmission electron microscope

Tf Transferrin

TJs Tight junctions

 T_{max} Time of occurrence of maximum drug concentration

UV Ultraviolet

w/o Water in oil

w/w Weight per weight

ζ Zeta potential

 λ_{max} Wavelength of maximum absorbance

List of Tables

No.	Table title	Page
1	Composition of plain SLNs prepared with different lipids in presence of Tween80 or Brij [®] 78 (3% w/w)	44
2	Composition of plain SLNs prepared using 7.5% (w/w) different lipids in presence of different surfactant concentrations	45
3	Mean PS, PDI and ζ of formulations prepared with Tween80 (3%)	50
4	Mean PS, PDI and ζ of formulations prepared with Brij [®] 78 (3%)	51
5	Physicochemical properties of plain SLNs prepared using 7.5% of various lipids in presence of different surfactant concentrations	54
6	Factors and levels used in the factorial design for the preparation of GalHBr loaded SLNs.	63
7	Composition of different GalHBr loaded SLNs according to the established factorial design	64
8	Composition of Cationic GalHBr SLNs	64
9	Composition of Cationic GalHBr SLNs containing chitosan	64
10	Data of the calibration curve for spectrophotometric determination of GalHBr in distilled water at 288.8 nm.	70
11	Data of the calibration curve for spectrophotometric determination of GalHBr in phosphate buffer saline (PBS) at 288.6 nm.	71
12	Composition, Particle size, PDI, ZP and EE% of GalHBr loaded SLNs prepared according to factorial design.	76
13	ANOVA table for the particle size of GalHBr loaded SLNs	78
14	ANOVA table for the zeta potential of GalHBr loaded SLNs	86
15	In vitro release data of GalHBr from SLNs in PBS PH=6.8	94
16	Release efficiency % (RE%) of GalHBr loaded SLNs	99
17	Kinetic parameters for GalHBr release from SLNs	100
18	Effect of different concentrations of SA on the measured physical properties of GalHBr loaded SLNs	105
19	Effect of increasing SDC concentration on the measured physical properties of GalHBr loaded cationic SLNs prepared with 0.56% SA.	105

20	The physicochemical properties and EE% of GalHBr loaded cationic SLNs	106
21	In vitro release data of GalHBr from cationic SLNs in PBS	109
	PH=6.8	
22	Release efficiency % of GalHBr loaded cationic SLNs	110
23	Kinetic parameters for GalHBr release from cationic SLNs	111
24	Physicochemical properties of blank CS-SLNs	115
25	The physicochemical properties and EE% of GalHBr loaded cationic and CS SLNs	117
26	In vitro release data of GalHBr from CS SLNs in PBS PH=6.8	119
27	Release efficiency % of GalHBr loaded cationic and CS SLNs	122
28	Kinetic parameters for GalHBr release from CS SLNs	122
29	Order of release of GalHBr loaded cationic and CS SLNs	122
30	The endothermic peaks of the used excipients and their enthalpy values	127
31	Relation between GalHBr concentration and the peak area ratio of GalHBr / IS in spiked rat plasma and brain	149
32	Plasma GalHBr concentrations in rats receiving IV GalHBr solution (group 1)	154
33	Plasma GalHBr concentrations in rats receiving IN GalHBr solution (group 2)	154
34	Plasma GalHBr concentrations in rats receiving IN GalHBr loaded anionic SLNs F20 (group 3)	155
35	Plasma GalHBr concentrations in rats receiving IN GalHBr loaded cationic SLNs F20S (group 4)	155
36	Plasma GalHBr concentrations in rats receiving IN GalHBr loaded chitosan SLNs F20SCS (group 5)	156
37	Mean plasma GalHBr concentrations in different groups of rats	157
38	Plasma pharmacokinetic parameters for GalHBr following IV and IN administration of solutions and different formulations in rats	158
39	Brain GalHBr concentrations in rats receiving IV GalHBr solution (group 1)	163
40	Brain GalHBr concentrations in rats receiving IN GalHBr solution (group 2)	163
41	Brain GalHBr concentrations in rats receiving IN GalHBr loaded anionic SLNs F20 (group 3)	164

42	GalHBr concentrations in brain of rats receiving IN GalHBr	164
	loaded cationic SLNs F20S (group 4)	
43	Brain GalHBr concentrations in rats receiving IN GalHBr loaded	165
	chitosan SLNs F20SCS (group 5)	
44	Mean brain GalHBr concentrations in different groups of rats	166
45	Brain pharmacokinetic parameters for GalHBr following IV and	167
	IN administration of solutions and different formulations in rats	
46	DTE%, DTP% and BBR for rats receiving IN GalHBr SLNs	171
	(Grps 2-5)	