Nanoparticles for BrainTargeting

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Chapter II: Preparation, Characterization and Emulsomal-Loading of Polyethylene Glycol Diacrylate (PEGDA) Cryogels

LIST OF ABBREVIATIONS

AEDs	Antiepileptic drugs
APS	Ammonium per sulphate
$AUC_{0–2880\ min}$	Area under OX concentration-time curve up to 48 hrs
BBB	Blood-brain-barrier
BBR	Brain/blood ratio
BHT	Butylated hydroxy toluene
C	Compritol
C.V. %	Coefficient of variation
CGT	Critical gelation temperature
C_{max}	Peak plasma and brain concentrations
CNS	Central nervous system
CRC	Chain relaxation capability
CSF	Cerebrospinal fluid
DLS	Dynamic light scattering
DMSO	Dimethyl sulfoxide
DOE	Design of experiments
DR%	Drug retained percent
DSC	Differential scanning calorimetry
DTE %	Drug targeting efficiency
DTI	Drug targeting index
DTP %	Direct nose-to-brain transport percentage
EE%	Entrapment efficiency
FDA	Food and drug administration
FTIR	Fourier transform infrared spectroscopy
G'	Elastic modulus

G''	Viscous modulus
GPC	Gel permeation chromatography
HEPES	Hydroxy ethyl piperazine ethane sulfonic acid
HD	Hydrolytic degradation
IA	Intra-arterial
ICH	The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use
IN	Intranasal
IS	Internal standard
IV	Intravenous
K_{el}	Elimination rate constant
LNPs	Lipid nanoparticles
M_c	Molecular weight of the polymer chain between two neighboring cross links
MEHQ	Monomethyl ether hydroquinone
MEM	Minimum essential medium
M_n	Number average molecular weight
MRM	Multiple reactions monitoring
MRT	Mean residence time
MTT	3- (4, 5- dimethylthiazol-2-yl) -2, 5- diphenyl tetrazolium bromide
M_w	Weight average molecular weight
NADPH	Nicotinamide adenine dinucleotide phosphate
NLCs	Nanostructured lipid carriers
NMR	Nuclear magnetic resonance
OX	Oxcarbazepine
PBS	Phosphate buffer saline

PC	Soya phosphatidylcholine
PCL	Poly caprolactone
PDI	Poly dispersity index
PEG	Polyethylene glycol
PEGDA	Poly ethylene glycol diacrylate
PET	Polyethylene terephthalate
PGA	Poly glycolic acid
Pk	Pharmacokinetic parameters
PLA	Poly lactic acid
PLGA	Poly lactide-co-glycolide
PVA	Poly vinyl alcohol
RES	Reticuloendothelial system
Rpm	Rotation per minute
$(r_o^2)^{1/2}$	Root-mean-square of the end-to-end distance of the polymer chain in the unperturbed state
SD	Standard deviation
SEM	Scanning electron microscopy
ShR	Shear rate
SLNs	Solid lipid nanoparticles
SR	Swelling ratio
SS	Shear stress
$t_{1/2}$	Time to reach half the maximum plasma and brain concentrations
tan δ	Phase angle
TEM	Transmission electron microscopy
TEMED	Tetra ethyl methyl ethylene diamine
TG	Triglyceride
T_{max}	Time to reach peak plasma and brain

	concentrations
TO	Triolein
TP	Tripalmitin
TS	Tristearin
Tw	Tween 80
$\mathbf{W_d}$	Weight of dry gels
$\mathbf{W_s}$	Weight of swollen gels
$\mathbf{W_u}$	Weight of deionized water
$\mathbf{W_u\%}$	Water uptake capacity
ξ	Mesh size
$\boldsymbol{\nu_{2,r}}$	polymer volume fraction in the relaxed state
$\boldsymbol{\nu_{2,s}}$	Polymer volume fraction in the swollen state

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