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Nanodiamonds-based Systems for the Delivery of an Anticancer Drug

A thesis submitted in partial fulfillment of the requirements for the Degree of Master of Pharmaceutical Sciences (Pharmaceutics)

By

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Moustafa Said

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List of abbreviations

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Abbreviation	Designation
µg	Microgram
µl	Microliter
ABCs	ATP-binding cassettes
BASD	Bead-assisted sonic disintegration
BCG	Bacillus Calmette-Guérin
BPB	Bladder permeability barrier
Chi-NDX	Chitosan-coated nanodiamonds-doxorubicin nanoparticles
CLSM	Confocal laser scanning microscopy
CNTs	Carbon nanotubes
Dex-Chi-NDX	Dextran-chitosan nanodiamonds-doxorubicin nanoparticles
DLS	Dynamic light scattering
DNDs	Detonation nanodiamonds
EPNDs	Epirubicin-loaded nanodiamonds
FBS	Fetal bovine serum
FL2	fluorescence channel 2
FSC	forward s12cattering
FT-IR	Fourier-transform infrared spectroscopy
H	Hour
HPHT-NDs	High pressure high temperature nanodiamonds
IV	Intravenous
LE	loading efficiency
MFI	Mean fluorescence intensity
Mg	Milligram
Min	Minute
Ml	Milliliter
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl- tetrazolium bromide

M_v	Viscosity average molecular weight
mV	Millivolt
Mw	Molecular weight
MWNT	Multi-walled carbon nanotubes
NDs	Nanodiamonds
NDX	Nanodiamonds-doxorubicin nanoparticles
NPs	Nanoparticles
PAMAM	Polyamidoamine
PBS	Phosphate buffered saline
PDI	Polydispersity index
PEG	Polyethylene glycol
PS	Particle size
RPMI	Roswell Park Memorial Institute
SAUD	Salt-assisted ultrasonic deaggregation
SD	standard deviation
Sec	Second
SSC	side scattering
SWNT	Single-walled carbon nanotubes
TEM	Transmission electron microscope
TNT	Trinitrotoluene
TPP	Tripolyphosphate
UV	Ultraviolet
vs	Versus
ζ	zeta potential

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