

Formulation & evaluation of Donepezil HCl loaded NLC for CNS targeting through intranasal delivery

A dissertation submitted to

Savitribai Phule Pune University



In partial fulfilment of the requirements for the award of degree of

MASTER OF PHARMACY

IN

PHARMACEUTICS

SUBMITTED

BY

Miss. MAYURI RAJENDRA SURYAVANSHI

Exam Seat No. 12151

Under the guidance of

Dr. AVINASH R. TEKADE

(PhD. M. Pharm)



Marathwada Mitramandal's College of Pharmacy,

Thergaon (kalewadi), Pune-411033

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This is to certify that the studies incorporated in the thesis entitled **“Formulation & evaluation of Donepezil HCl loaded NLC for CNS targeting through intranasal delivery”** for Degree of Master of Pharmacy in Pharmaceutics has been carried out by **Miss. Mayuri Rajendra Suryavanshi** in the Laboratories of Marathwada Mitra Mandal's College of Pharmacy, Pune-33, under the guidance of **Dr. AVINASH R. TEKADE**, Dean & Head, Department of Pharmaceutics.

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Dr. Avinash R. Tekade

Place: Thergaon (Kalewadi), Pune

Research Guide



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DECLARATION BY THE CANDIDATE

I, the undersigned hereby declare that the research work entitled

“Formulation & evaluation of Donepezil HCl loaded NLC for CNS targeting through intranasal delivery” is the original work undertaken by me under the guidance of **Dr. Avinash R. Tekade** and has not formed the basis of any degree, diploma, associate ship, fellowship, titles in this or any other university or other institution of higher learning. I further declare that material obtained from other sources has been duly acknowledged in the thesis.

Date:

Mayuri R. Suryavanshi

Place: Thergaon (Kalewadi), Pune

ACKNOWLEDGMENT

“A dream does not become reality through magic; it takes sweat, determination, and hard work, this is an effort not by me but my teachers, my parents and whole family, my friends and well-wishers”

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Thankful I ever remain.

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Mayuri R. Suryavanshi

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List of Abbreviations

Sr No	ABBREVIATIONS	FULL FORM
1	Abs	Absorbance
2	Conc.	Concentration
3	°C	Degree Celsius
4	pH	Hydrogen ion concentration
5	min	Minute
6	mg	Milligram
7	mL	Millilitre
8	cm	centimetre
9	nm	Nanometre
10	CR	Cumulative Release
11	rpm	Revolution per minute
12	UV	Ultraviolet
13	DSC	Differential Scanning Calorimetry
14	BBB	Blood Brain Barrier
15	FT-IR	Fourier transform infrared
16	DNZ	Donepezil hydrochloride
17	NLC	Nanostructured lipid carrier
18	GMS	Glyceryl monostearate
19	DPPH	2,2-diphenyl-1-picryl-hydrazyl-hydrate
20	IN	Intranasal
21	IV	Intravenous