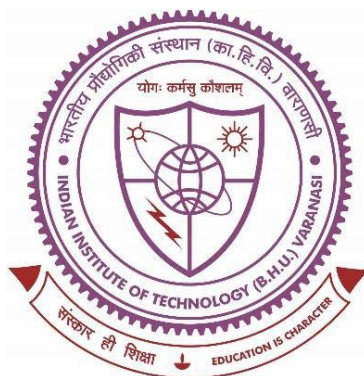


Identification of Novel Heterocyclic Leads for the Management of Alzheimer's Disease



Thesis submitted in partial fulfilment for the
Award of Degree

Doctor of Philosophy

By

Rayala Swetha

**Department of Pharmaceutical Engineering & Technology
Indian Institute of Technology
(Banaras Hindu University)
Varanasi-221005
India**

Roll No. 17161001

Year: 2023

**Department of Pharmaceutical Engineering & Technology
Indian Institute of Technology
(Banaras Hindu University)
Varanasi-221005**

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**Prof. Sushil K. Singh
(Supervisor)**

**Date:
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Prof. Sushil K. Singh
(Supervisor)

Prof. S. Hemalatha
(Head of the Department)

**Department of Pharmaceutical Engineering & Technology
Indian Institute of Technology
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Date:

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(Rayala Swetha)

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List of Abbreviations

| Abbreviations | Full Form |
|---------------------------------|---|
| AD | Alzheimer's disease |
| ATP | Adenosine triphosphate |
| ADP | Adenosine diphosphate |
| ADME | Absorption, Distribution, Metabolism, and Excretion |
| ADT | Agar Diffusion Test |
| BBB | Blood-Brain Barrier |
| CHCl ₃ | Chloroform |
| CDCl ₃ | Deuterated Chloroform |
| CC ₅₀ | Cytotoxic concentration required to kill 50% of the population |
| DL | Drug likeness |
| DCCD | N, N-Dicyclohexylcarbodiimide |
| DMF | Dimethylformamide |
| DCM | Dichloromethane |
| DMSO | Dimethyl sulfoxide |
| EPS | Extrapyramidal side-effects |
| EMEM | Eagle's Minimal Essential Medium |
| Et ₂ O | Diethyl ether |
| Et ₃ N | Triethylamine |
| FZ | Flumazenil |
| HTS | High Throughput Screening |
| HIV | Human Immunodeficiency Virus |
| HBA | Hydrogen Bond Acceptor |
| HBD | Hydrogen Bond Donor |
| HQNO | 2-heptyl-4-hydroxyquinoline-N-oxide |
| IC ₅₀ | Inhibitory concentration required to kill 50% of the population |
| IMVs | Inverted Membrane Vesicles |
| K ₂ CO ₃ | Potassium carbonate |
| KH ₂ PO ₄ | Potassium dihydrogen phosphate |

| | |
|-------------------|--|
| KOH | Potassium hydroxide |
| KI | Potassium iodide |
| MTT | 3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-tetrazolium bromide |
| MeOH | Methanol |
| MgCl ₂ | Magnesium chloride |
| NMR | Nuclear Magnetic Resonance |
| NaCl | Sodium chloride |
| ODCB | 1-2-dichlorobenzene |
| PMF | Proton Motive Force |
| PAMPA | Parallel Artificial Membrane Permeability Assay |
| PDB | Protein Data Bank |
| PBL | Porcine Brain Lipid |
| Pe | Permeability |
| RMSD | Root Mean Square Deviation |
| SI | Selectivity Index |
| SAR | Structure-activity relationship |
| SEM | Standard Error of the Mean |
| TGI | Total Growth Inhibition |
| TLC | Thin-Layer Chromatography |
| TSA | Total Surface Area |
| TPSA | Topological Polar Surface Area |
| THF | Tetrahydrofuran |
| US-FDA | United States- Food and Drug Administration |
| UV | Ultraviolet |
| WHO | World Health Organization |
| 3D | Three-Dimensional |
| 5-HT | 5-hydroxytryptamine |

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List of Symbols

| Symbols | Meaning |
|--------------------|---------------------------|
| α | Alpha |
| β | Beta |
| δ | Delta |
| ε | Epsilon |
| $^{\circ}\text{C}$ | Degree Celsius |
| \AA | Angstrom |
| © | Copyright |
| g | Gram; Gravitational force |
| mg | Milligram |
| μg | Micro gram |
| ng | Nano gram |
| μM | Micro Mole |
| mmol | Milli Mole |
| mL | Milliliter |
| μL | Microliter |
| mV | Millivolt |
| h | Hour |
| s | Second; Singlet |
| nm | Nanometer |
| μm | Micrometer |
| mm | Millimeter |
| cm | Centimeter |
| ppm | Parts per million |
| rpm | Revolutions per minute |
| Kcal | Kilocalories |
| Hz | Hertz |
| MHz | Megahertz |
| J | Coupling constant |
| d | Doublet |
| m | Multiplet |
| dd | Doublet of doublet |

| | |
|--------|-----------------------|
| m/z | Mass to charge ratio |
| % | Percent |
| pH | Potential of hydrogen |
| \leq | Less than or equal |
| $<$ | Less than |
| $>$ | More than |
| \pm | Plus or minus |

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