CURRICULUM VITAE

Dr. NEELESH MAHESHWARI
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ACADEMIC QUALIFICATIONS:

Qualification	Institute/Organization	Board/ University	Year	Result
PhD.	SOPS, RGPV, Bhopal	Rajiv Gandhi Prodhyogiki Vishwavidhyalay, Bhopal	2021	Completed
M.Pharmacy (Pharmaceutical chemistry)	B.N. College of Pharmacy, Udaipur.	Rajasthan University of Health & Science. Jaipur.	2012	75.43 %
B.Pharmacy	Maharishi Arvind College of Pharmacy, Jaipur.	Rajasthan University of Health & Science. Jaipur.	2009	64.41%
H.S.C	Govt. Sr. Sec. School Rajendra Marg, Bhilwara.	Board of Secondary Education, Rajasthan	2005	63.08%
S.S.C	Emmanuel Mission Sec. School, Bhilwara.	Board of Secondary Education, Rajasthan	2003	71.5%

EXPERIENCE:

- Currently working as **Associate Professor** at **School of Pharmacy, Sangam University**, Bhilwara, Rajasthan. (From Oct-2021 to till date)
- Worked as **Assistant professor** at **Shivaji Rao Kadam Institute of Pharmaceutical Education & Research, Acropolis technical campus, Indore.** (Aug-2019-Sep2021).
- Worked as **Executive** at **Amneal Pharmaceutical Pvt. Ltd**. In **Analytical Research & Development Department** at SEZ-Ahmedabad. (From- June-2018 to july-2019)
- Worked as **PhD Research Fellow** at SOPS, RGPV, Bhopal under a Research Project Sponsored by **MPCST, Bhopal**. (From- Feb/2015 to May-2018)
- Worked as **Assistant professor** at **Acropolis Institute of Pharmaceutical Education and Research**, Indore, India. (July/2012- Nov-2014)

SCIENTIFIC SKILLS:

Analytical Chemistry Skills-

- Analysis of chemical compounds using **HPLC and U.V.** (Feasibility, Development, Validation and Method transfer: Assay, Related Compounds, Dissolution).
- Preparation or Analytical method validation **protocol and reports.**

Organic Chemistry Skills-

- Expert in **synthesis and troubleshooting** of **multistep** target compounds.
- Able to perform **column chromatography**.
- Purification of compounds using **flash chromatography**.
- Able to handle hazardous reagents.
- **NMR interpretation** of a small organic molecule using ACD/NMR Processor, MestReNova and ChemDraw.
- **IR Instrument handling** & **Graph interpretation** for small organic molecule Structural elucidation.
- **Mass Instrument handling** & **MS Graph interpretation** for small organic molecule Structural elucidation.

Medicinal Chemistry Skills:

- Knowledge of **ADMET** properties of drug compounds.
- In-vitro **Enzyme handing**.
- Efficient with use of drug design software like -
  - ✓ GLIDE, PHASE, Qikprop from Schrodinger.
  - ✓ CHEM OFFICE.
- Working knowledge of different versions of utility package **M.S. office** such as Word, Excel and Powerpoint presentation.
- Patent database searching, Reference Management Software (**EndNote**)
- Scientific data retrieval from various Internet portals like Science direct, Pub Med, Google Scholar.

KEY SCIENTIFIC PROJECTS:

Ph.d. Project:

Title: **"Structure-based drug design, synthesis and biological evaluation of some Non-carboxylic inhibitors of PTP1B enzyme as antidiabetic agents"**

Research Supervisor-

- Prof. Piyush Trivedi, **Former vice chancellor, RGPV Bhopal.**

- Prof. N S Hari Narayan Moorthy, **Head (Dept. of pharmacy) Dean (Faculty of Pharmacy) IGNTU, Amarkantak.**

Project Overview-

Diabetes mellitus is a complex metabolic syndrome, has a major human health concern over the world and is estimated to affect 300 million people by the year 2025. Indians alone may have about 1/5 of the global diabetic population by 2025. Currently, an efficient, safe and selective compound is not available to target type-2 diabetes. **However, targeting PTP1B could be effective in the treatment of diabetes and provides an opportunity to improve insulin sensitivity without the weight gain seen with current sensitizers, e.g. PPARγ activators (thiazolidinediones).** It downregulates insulin transduction mediated by receptor tyrosine kinases such as insulin receptor and epidermal growth factor, Thus, Inhibition of PTP1B is predicted to be an excellent novel therapy to target obesity and type-2 diabetes.

Most of the reported inhibitors integrate pTyr mimetic group such as **phosphonates, carboxylic acids and sulfamic acids,** since the effective site of compound serves pTyr, which **contains two negative charges** at physiological pH which leads to inadequate PTP1B **selectivity** and insufficient in vivo action due to low cell **permeability and bioavailability**. Hence, there is a need to discover small novel PTP1B inhibitors with identifying a selective, specific, safe and orally bioavailability.

The **objective** of the research project was to discover novel **orally available** PTP1B inhibitors incorporating a **non-charged pTyr mimetic moiety.** This investigation is aimed to develop a series of **non-carboxylic acid** PTP-1B inhibitors **devoid of any charged moieties** and exhibit good enzyme inhibitory **potency, permeability** and **oral bioavailability.**

Series of compounds were **designed and synthesized** while some other compounds obtained through **HTVS (using GLIDE) were** evaluated ***In-vitro*** against **PTP1B** enzyme and most actives among them were further evaluated ***In-vivo*** and compound showing better activity than that of marketed drug **Metformin.**

M. Pharm Project:

Title: **"QSAR studies of 1, 4-benzodiazepine-2-one as Antitrypanosomal activity"**

(From-School of Pharmaceutical Sciences, RGPV Bhopal)

FELLOWSHIPS & OTHER ACHIEVEMENTS:

- **JRF** at SPOS, RGPV, Bhopal under in a Research Project Sponsored by **MPCST, Bhopal**. (Since Feb/2016-Dec-2018)
- **GPAT-2017 Qualified**
- Secured **1st position** in M. pharmacy IV semester (Pharmaceutical chemistry) in Academic session 2009-11.

FEATURED PUBLICATIONS:

1. **"Formulation, Evaluation, And Antidiabetic Activity of A Polyherbal Capsule: A Synergistic Approach For Diabetes Management"** International journal of Biology, Pharmacy, and Allied Sciences, IJBPAS, March, Special Issue, 2025, 14(3): 179-192.
2. **"Recent advancements in mechanistic research, therapeutic potential, and structure-activity relationships of aurora kinase inhibitors in cancer therapie"** Bioorganic Chemistry, 2025; 154, 107976.
3. **Synthesis, Characterization, and Evaluation of Novel Heterofused Pyrimidine Derivatives as Potential Therapeutic Agents,** Revista Electronica de Veterinaria (REDVET), 2024; 25(1):1-7.
4. **"Air Pollutants Causing Diseases Their Detection and Measurement Using Different Hyphenated Analytical Techniques: A Quick Insight"** Asian Journal of Pharmaceutics, 2023; 17(2):151-162.
5. **"Phytotherapeutic Potential of Natural Herbal Medicines for Management of Psoriasis: Current Status"** Pharmacognosy Research, 2022; 15(1):1-14.
6. **"Physiochemical Characterization and in vitro Evaluation of Formulated Herbal Bioactive Loaded Transdermal Patches"** Pharmacognosy Research, 2022; 15(1):1-7.
7. **"Virtual Screening Based Discovery of PTP1B Inhibitors and Their Biological Evaluations"** in the journal, Letters in Drug Design & Discovery" Benthamscience.
8. **"Quantitative X-ray fluorescence analysis: Trace level detection of toxic elemental impurities in drug product by ED-XRF spectrometer"** in journal of pharmaceutical and biomedical analysis, Elsevier.
9. **"Carbon nanotubes and drug delivery"** in eLS, wiley online library.
10. **"Design, Synthesis and Biological Evaluation of Some tetrazole acetamide derivatives as novel non-carboxylic PTP1B inhibitors"** Bioorg Chem. 2019 Aug;92: 103221.
11. **"Synthesis and biological evaluation of some N-(3-(1*H*-tetrazol-5-yl) phenyl)acetamide derivatives as novel non-carboxylic PTP1B inhibitors designed through bioisosteric modulation"** Bioorg Chem. 2018 Oct;80:145-150. doi: 10.1016/j.bioorg.2018.06.016. Epub 2018 Jun 8.
12. **"Recent Advances in Protein Tyrosine Phosphatase 1B Targeted Drug Discovery for Type II Diabetes and Obesity"** Curr Drug Targets. 2018;19 (5):551-575.
13. **"Atom-based 3D-QSAR study of 1, 4-benzodiazepine-2-ones as potent antitrypanosomal agents and its validation"** Medicinal Chemistry Research-An international journal Promoting Bioactive Compounds: vol22/Number 8/June 2013.

14. **"2D-QSAR study of 1,4-benzodiazepine-2-ones as potent anti-trypanosomal agents"** Medicinal Chemistry Research-An international journal Promoting Bioactive Compounds: vol22/Number 6/April 2013.

PATENT GRANT:

1. **"Medication Packaging and Automated Dispensing Device"** Indian Patent office, Govt. of India, Design no. 425549-001 on Dated: 01/08/2024.
2. **"Laboratory Organ Bath ToInvestigate Animal Tissue Activity"** Indian Patent office, Govt. of India, Design no. 396130-001 on Dated: 26/09/2023.

PATENT PUBLICATION:

1. Saraca Asoca Based Transdermal Patches for The Treatment of Abnormal Menstruation. **(Indian patent publication via Application No.202311003059 A)**

BOOK PUBLICATION:

1. **"A Practical Handbook of Instrumental Method of Analysis"** Published on Amazon, July 20, 2024 ISBN-13: 979-8333979834. **(https://www.amazon.com/dp/B0DBD319KF?ref_=pe_93986420_774957520)**

PATENT PUBLICATION:

1. Saraca Asoca Based Transdermal Patches for The Treatment of Abnormal Menstruation. **(Indian patent publication via Application No.202311003059 A)**

POSTER PRESENTATION:

Three posters were presented in various institutes in India as mentioned below-

1. High Throughput Virtual Screening & In-silico ADME Analysis for Rapid & Efficient Identification of Potential Non-Charged Inhibitors of Novel Anti Diabetic Agent.
2. Structure-Based Virtual Screening & In-silico ADMET Profiling on PTP1B Receptor for Identification of Potential Cell Permeable Inhibitors of Novel Anti Diabetic Agent.
3. Ligand-Based Computer Aided Methodologies in Drug Discovery and development.

MEMBERSHIP:

- Life time member of Association of Pharmaceutical Teachers of India (APTI)

(Member ID: - RA/LM-501, dated - 19/Jan/2022)

- SPER- Society of Pharmaceutical Education and Research

PERSONAL DETAILS:

Date of birth:	03.08.1987
Father's Name:	Mr. Om Prakash Somani
Gender:	Male
Marital status:	Married