GEETIKA

Research Scholar (ICMR-SRF)
Birla Institute of Technology and Science- Pilani (Pilani Campus), Rajasthan-33031, India

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Technical Skills:

- ***Cell culture***
  Cell maintenance, Media preparation, Transfection
- ***Animal Handling/ model development***
  Behaviour assessment, selecting models, designing experiments, surgeries.
- ***Molecular biology***
  qRT-PCR, western blot, Microscopy, Flow cytometry
- ***Analytical Techniques***
  LC-MS/MS, HPLC, DLS, FTIR, rheometer, DSC, HPTLC, High-Pressure Homogenizer, U.V. Spectrophotometer,
- ***Formulation based skills.***
  Nano & Microparticles Preparation, optimization & characterization

Software knowledge:

- Phoenix WinNonlin
- GastroPlus
- Pkanalix
- Thoth pro
- Any maze
- Design-Expert® Software

Statistical skills:

Expertise in
- Graph pad prism
- R

PROFESSIONAL EXPERIENCE

1. January 2018-July 2023

Ph.D. at BITS-Pilani ***Status**: Completed*

Project: Investigating the Neuroprotective Potential of Repaglinide and Development of PEGylated Repaglinide Nanocarriers for The Management of Metabolic Disorders Linked Alzheimer's Disease.

Description: Exploring the repurpose mechanistic approach of meglitinide class anti-diabetic drug and evaluating for the neurodegenerative disorder (Alzheimer's disease) using molecular biological techniques like qRT-PCR, and western bloating. Additionally, the PEGylated nanocarrier systems were developed and biologically evaluated to improve the efficacy of the Drug.

2. April 2021-March 2023

Senior Research fellow-ICMR ***Status:** Completed*

Project: Design and Biological Evaluation of Repaglinide Loaded Biodegradable Nanocarrier for The Effective Treatment of Diabetes Mellitus induced Neuronal Complication

Description: Evaluating anti-diabetic drugs for the neuronal disorder (Alzheimer's) using molecular biological techniques and developed polymeric nanoparticles using synthesized di-block co-polymer to circumvent pharmacokinetic and pharmacodynamic problems.

3. January 2018 – March 2020

Senior Research fellow at BITS-Pilani ***Status:** Completed (Phase II)*

Project: Preclinical Pharmacological Studies on Standardized Extract of *Trigonella foenum-graecum* Seeds for Preventing or Delaying the Development of Type-2 Diabetes in Subjects with Pre-Diabetes.

Description: Development of diabetic models in rodents to assess pharmacodynamic parameters. Evaluation of general pharmacological and toxicological parameters of Standardized Extract of *Trigonella foenum-graecum* in rodents. Estimation of pharmacokinetic parameters in normal and diseased rodents. Simulation studies to evaluate the correlation between the pharmacokinetic and pharmacodynamic parameters.

4. August 2016 – August 2017

Research Assistant at GJUS&T ***Status**-Completed*

Project: Encapsulation of Babchi Oil in Microporous Colloidal Structures for the treatment of Psoriasis.

Description: Development and evaluation of micro sponges using the quasi-emulsion method. Physical characterization and *in vitro* cellular evaluation of microsponges.

TEACHING EXPERIENCE:

January 2018- May 2023 ***Status**-Completed*

Teaching Instructor/Assistant at BITS-Pilani

Class	*Course title*	*Class*	*Course title*
B. Pharmacy	Physical Pharmacy Anatomy and Physiology Health Education Microbiology Pharmaceutical formulation and biopharmaceutics	***M. Pharmacy***	Advanced Physical Pharmacy Pharmacokinetic and clinical pharmacy Dosage Form Design Modern Pharmaceutical Analytical technique

Non-Technical Skills:

- **Communication:** effective team/client communication.
- **Leadership:** manage team, delegate tasks, inspire.
- **Time management**: prioritize, meet deadlines, efficient resource use.
- **Problem-solving**: analyse, identify, decide with data.
- **Adaptability**: quick to adapt, learn, adjust.
- **Collaboration**: work effectively with others.
- **Creativity**: think innovatively, generate ideas.

Cite score.
h-Index-7
i10-Index-6

Personal Profile:
D.O.B: 05 Aug.1994
Sex: Female
Nationality: Indian
Marital Status: Unmarried
Languages Known: English, Hindi

ACADEMIC PERFORMANCE:

Education	Institute	Year
Ph.D.	BITS-PILANI (Pilani campus)	2018-23
M. Pharmacy	GJUS&T, Hisar	2015-17
B. Pharmacy	PGIMS, Rohtak	2011-15

***PUBLICATIONS*:**

- **Wadhwa G**,Taliyan R. Mechanistic investigation of Repaglinide as a potential therapeutic agent for Metabolic Syndrome Linked Alzheimer's Disease: In vitro and In vivo Analysis. (Under revision).
- **Wadhwa G**, Krishna KV, Dubey SK, Taliyan R. Design and Biological Evaluation of Repaglinide Loaded Polymeric Nanocarriers for Diabetes Linked Neurodegenerative Disorder: QbD-Driven Optimization, In Situ, In Vitro, and In Vivo Investigation**. Int.J. Pharm**.2023 March 13.
- **Wadhwa G**, Krishna KV, Dubey SK, Taliyan R. PEGylated Polymer–Lipid Hybrid Nanoparticles to Enhance In Vivo Exposure and Uptake of Repaglinide in Brain Cells to Treat Diabetes-Linked Neurodegenerative Disorders. **ACS Applied Nano Materials**. 2023 Feb 8;6(5):3497-3512.
- **Wadhwa G**, Krishna KV, Taliyan R, Tandon N, Yadav SS, Banerjee D, et al. A novel UPLC–MS/MS method for simultaneous quantification of trigonelline, 4-hydroxy isoleucine, and diosgenin from Trigonella foenum-graecum extract: Application to pharmacokinetic study in healthy and type 2 diabetic rats. **Biomed Chromatogr**.2022 Feb 1 ;36(2):e5275.
- **Wadhwa G**, Krishna KV, Dubey SK, Taliyan R. Development and validation of RP-HPLC method for quantification of repaglinide in mPEG-PCL polymeric nanoparticles: QbD-driven optimization, force degradation study, and assessment of in vitro release mathematic modeling. **Microchem J**. 2021 Sep 1;168:106491.
- **Wadhwa G**, Krishna KV, Taliyan R, et al. Preclinical pharmacokinetics of trigonelline using ultra-performance liquid chromatography–tandem mass spectrometry and pharmacological studies targeting type 2 diabetes. **Sep Sci Plus**. 2021 Apr 1;4(4):185.
- **Wadhwa G,** Krishna KV, Taliyan R, Tandon N, et al. Preclinical pharmacokinetic and pharmacodynamic modelling study of 4-hydroxy isoleucine using validated ultra-performance liquid chromatography-tandem mass spectrometry. **RSC Adv**. 2020 Feb;10(10):5525–32.
- **Wadhwa G,** Kumar S, Mittal V, Rao R. Encapsulation of babchi essential oil into microsponges: Physicochemical properties, cytotoxic evaluation and anti-microbial activity. **J Food Drug Anal.** 2019 Jan 1;27(1):60–70.
- **Wadhwa G**, Kumar S, Chhabra L, Mahant S, Rao R. Essential oil–cyclodextrin complexes: an updated review. **J Incl Phenom Macrocycl Chem.** 2017 Aug 21;89(1):39–58.
- Gorantla S, **Wadhwa G**, Jain S, Sankar S, Kshitij Nuwal ·, Mahmood A, et al. Recent advances in nanocarriers for nutrient delivery. **Drug Deliv Transl Res**.2021;1:3.
- Pradhan R, Krishna K V., **Wadhwa G**, Taliyan R, , et al. QbD-driven development and validation of HPLC method for determination of Bisphenol A and Bis-sulphone in environmental samples. **Int J Environ Anal Chem**. 2020 Jan 2;100(1):42–54.
- Krishna KV, **Wadhwa G**, Alexander A, Kanojia N, Saha RN, Kukreti R, et al. Design and Biological Evaluation of Lipoprotein-Based Donepezil Nanocarrier for Enhanced Brain Uptake through Oral Delivery. **ACS Chem Neurosci**. 2019 Sep;10(9):4124–35.

ACHIEVEMENTS

- Awarded with "**Best Abstract Award**" in PharmSci360**American Association of Pharmaceutical Scientists (AAPS)**
- Awarded with **Indian Council of Medical Research travel grant award**.
- Awarded with **Council of Scientific and Industrial Research (CSIR) travel grant award**.
- Awarded with **International Travel award by Department of science and technology-SERB.**
- Awarded with **Senior Research Fellowship from the Indian Council of Medical Research, India**.
- Research article selected for **back cover** in the **separation science plus journal**.
- Qualified, **Graduate Pharmacy Aptitude** Test with 93.83 percentile.
- Score100th Rank in **Haryana State Pharmacy Entrance Test.**

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CONFERENCES:

Conference Proceedings

- **Wadhwa Geetika,** Taliyan Rajeev. Preclinical investigation of Repaglinide Nanoparticles in High Fat Diet with Streptozotocin-Induced Memory Impaired Rats. *Alzheimer's Association International Conference-July,2022.*
- **Wadhwa Geetika,** Dubey S K, Taliyan Rajeev. Repaglinide Loaded Hybrid Nanocarrier for the Management of Diabetes Mellitus Induced Neuronal Complications. *AAIC neuroscience next-November,2020.*

Oral Presentation

- **Wadhwa Geetika,** Taliyan Rajeev. Oral Delivery of Insulinotropic Agent Loaded Nanocarrier to Enhanced Brain Uptake for Diabetes Linked Neurodegenerative Disorder in Wistar Rats. *Presented at International Symposium on Recent Trends and future opportunities in pharmaceuticals-NIPER Pharmacon, India -November 2022.*

Poster Presentations

- **Wadhwa Geetika,** Dubey S K, Taliyan Rajeev. Repaglinide Loaded Hybrid Nanocarrier for the Management of Diabetes Mellitus Induced Neuronal Complications, *Presented at Alzheimer's Association International Conference Neuroscience next-November,2020.*
- **Wadhwa Geetika,** Dubey S K, Taliyan Rajeev. Preclinical Investigation of Developed Lipid Hybrid Nanocarrier for the Treatment of Diabetes Induce Neuronal Complications, *Presented at Annual conference of Society for the study of Xenobiotics (SSX), India- July,2021.*
- **Wadhwa Geetika,** Dubey S K, Taliyan Rajeev, *In vitro* Release Study of Insulinotropic Agent for the Treatment of Diabetes Induce Neuronal Complications, *Presented at Dissolution Research Presentation India (DRPI), India -June,2021.*
- **Wadhwa Geetika,** Taliyan Rajeev. Development of PEGylated Hybrid Nanocarrier for the treatment of Diabetes induced neuronal complications. *Presented at 20th international e-symposium by control released society (CRS India chapter)-February,2022.*
- **Wadhwa Geetika,** Taliyan Rajeev. Preclinical investigation of Repaglinide Nanoparticles in High Fat Diet with Streptozotocin-Induced Memory Impaired Rats. *Presented at Alzheimer's Association International Conference-July,2022.*
- **Wadhwa Geetika,** Taliyan Rajeev.Mechanistic Insights of Meglitinides drug repurposing and Delivery to Brain for Metabolic Syndrome linked neurodegenerative disease. *Presented at Alzheimer's Association International Conference-July,2023*

REFERENCES

1. Prof. Rajeev Taliyan (Ph.D. Supervisor)

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2. Prof. Gautam Singhvi (DAC Member)

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3. Dr. Sandeep Sundriyal

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4. Dr. Rekha Rao (Project Supervisor)

Assistant Professor, Department of Pharmaceutical sciences, GJUS&T, Hisar.

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