

# Rahul Kumar, M. Pharm (Pharmacology)



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## Research Summary

An early-career researcher focused on formulation science and preclinical pharmacology and toxicology with experience in designing and characterizing nanoformulations, applying advanced analytical techniques, and evaluating therapeutic efficacy in animal models. Seeking a PhD position to develop translational nanoformulations and investigate molecular mechanisms using a combination of experimental pharmacology and molecular biology approaches.

## Technical Skills

- **Analytical Techniques:** Proficient in handling DSC, HPTLC, UV-Vis spectroscopy, ELISA, RT-qPCR, immunohistochemistry (IHC), fluorescence microscopy techniques.
- **Formulation Science:** Expertise in Nano- and micro-suspensions, preformulation work, accelerated and long-term stability testing.
- **Molecular & Computational Techniques:** Proficient in RNAi methodologies, network pharmacology, cytokine profiling, mechanistic pathway analysis.
- **Preclinical Skills:** Expertise in Small-animal handling (Wistar rats, Mice, Guinea Pig, Rabbits) experimental design for *in vivo* studies, sample processing for biochemical and histological assays.
- **Data Analysis & Software:** Expertise in GraphPad Prism, SPSS, Microsoft Office Suite, EndNote, ImageJ.

## Current Position

**Assistant Lecturer (Nitte College of Pharmaceutical Sciences)      Aug 2023-Present**

### Teaching & Communication:

- Lecturing expertise in subjects (Pharmacology, Toxicology, Molecular Biology, Anatomy & Physiology).
- Lab practical supervision, curriculum development, student mentorship, research planning, scientific writing, protocol development, and project management for Undergraduate students.
- Supervised undergraduate research projects and mentored students in laboratory techniques, experimental design, and data interpretation.

## Education

### Master's Degree: M. Pharm (Pharmacology)

(2021-2023)

KLE College of Pharmacy, Bangalore, Karnataka, India  
KLE University (Deemed-to-be-University), Belagavi

### Bachelor's Degree: B. Pharm

(2017-2021)

KLE College of Pharmacy, Bangalore, Karnataka, India  
KLE University (Deemed-to-be-University), Belagavi

### Higher Secondary Education

(2015-2017)

S.R.N Adarsh P.U College  
Chamarajpet, Bangalore, Karnataka  
(Affiliated to Karnataka Secondary Education Examination Board)

## Research Experience

### Nanosuspension design & characterization

- Designed and prepared Nanosuspensions (Ellagic acid and Cucurbitacin B) including preformulation, process optimisation, and stability studies.
- Performed physicochemical characterisation using DSC, HPTLC, and UV-Vis spectroscopy; particle size and fluorescence microscopy techniques.

### Preclinical pharmacology studies

- Designed and executed animal model studies for anemia and hyperlipidaemia. Screened efficacy and safety of nanoformulation in diabetic rats.

### Molecular biology & mechanistic work

- Applied RNAi approaches and network pharmacology to interrogate mechanistic pathways and identify molecular targets.
- Conducted RT-qPCR and immunohistochemistry for gene expression and tissue-level validation of pathway modulation.

## Publications

1. **Kumar, R.**, Hariprasad, M. G., Redhwan, M. A. M., Yadav, V., Dhavale, A., & Guha, S. Evaluating the Effect of *Moringa concanensis* on Aluminium Chloride-induced Anemia in Wistar Rats. DOI: [10.18311/jnr/2024/34553](https://doi.org/10.18311/jnr/2024/34553) (**First Author**)
2. Redhwan MA, MG H, Samaddar S, Hard SA, Yadav V, Mukherjee A, **Kumar R.** Small interference (RNAi) technique: Exploring its clinical applications, benefits and limitations. European Journal of Clinical Investigation. 2023 Oct;53(10):e14039. DOI: [10.1111/eci.14039](https://doi.org/10.1111/eci.14039) (**Co-Author**)
3. Vidyabhushan Yadav, Hariprasad M.G, Moqbel Ali Moqbel Redhwan, **Rahul Kumar**, Apurwa Dhavale, Sourav Guha, "Assessment of the Therapeutic Potential of Ethanolic Extract of *Moringa concanensis* Leaves in a Rat Model of High Fat Diet-Induced

Hyperlipidaemia," *Advances in Pharmacology and Pharmacy*, Vol. 13, No. 1, pp. 10 - 17, 2025. [DOI: 10.13189/app.2025.130102](https://doi.org/10.13189/app.2025.130102) (Co-Author)

### **Achievements and Awards**

1. Secured 8.67 CGPA (2023) in Masters (M. Pharm-Pharmacology), KLE University, Belagavi.
2. Secured 7.83 CGPA (2021) in Bachelors (B. Pharm) KLE University, Belagavi.
3. Secured 82% in Higher Education (2017), with subject combination of Physics, Chemistry, Mathematics and Biology.
4. Received best dissertation award for Masters project (2024). Dissertation titled: **"EVALUATING THE EFFECT OF ETHANOLIC LEAF EXTRACT OF MORINGA CONCANENSIS ON ALUMINUM CHLORIDE-INDUCED ANEMIA IN RATS"**
5. Registered Pharmacist at Karnataka State Pharmacy Council (KSPC), (2023)

I, hereby declare that the above information furnished about me is true to the best of my knowledge.

**Rahul Kumar**