



Dr. Kesavan Karthikeyan,
M. Pharm., Ph. D. (IIT-BHU), Postdoc (USA)
GETin Fellow (DBT-India; 2019-2020)

School: School of Studies of Natural Resources

Department: Department of Pharmacy

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Qualifications

Institution and Location	Degree	Completion Date	Field of Study
The Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu	B. Pharm.	2004	Pharmaceutical Sciences
Bharathidasan University, Tiruchirapalli, Tamil Nadu	M. Pharm	2007	Pharmaceutics
Indian Institute of Technology, Banaras Hindu University, Varanasi, Uttar Pradesh	Ph.D.	2011	Pharmaceutics
Stead Family Department of Pediatrics, Roy J. and Lucille A. Carver College of Medicine, University of Iowa, IA, USA	Postdoc	2020	Genome editing

Area of Interest/Specialization

Nanopharmaceuticals

- Nano-sized dispersed systems for ocular drug delivery (Nanoparticles, Microemulsion, Nanoemulsion, nanomicelles, etc.)
- Mucoadhesive nanocarrier drug delivery system for ocular delivery

Novel drug delivery systems

- Mucoadhesive ocular drug delivery system
- Sustained ocular drug delivery to combat diseases in eye
- Cationic nanocarriers for ocular drug delivery
- Positively charged nanocarriers as non-viral vector for ocular gene therapy

Experience

S. No.	Name of the Inst./Employer	Position Held	Duration (From-to)	Major Job Responsibilities and Nature of Experience
1.	Sanjivani College of Pharmacy, Khetri, Rajasthan	Lecturer	April 2004- June 2005	Teaching D. Pharm Students
2.	Acharya & B.M. Reddy college of Pharmacy, Bangalore	Assistant Professor	August 2011- Dec. 2011	Teaching B. Pharm and M. Pharm students and Research
3.	Department of Pharmacy, Guru Ghasidas Vishwavidyalaya (A Central University), Koni, Bilaspur, C.G.	Assistant Professor (Level 10)	January 2012- Dec. 2015	Teaching B. Pharm and M.Pharm students Research Guidance to PG and Ph.D students
4.	Department of Pharmacy, Guru Ghasidas Vishwavidyalaya (A Central University), Koni, Bilaspur, C.G.	Assistant Professor (Level 11)	January 2016 to till date	Teaching B. Pharm and M.Pharm students Research Guidance to PG and Ph.D students

Awards and Honors

1. Received prestigious Genome Engineering/Editing Technology initiative (GETin) Overseas Fellowship 2018-19 funded by Department of Biotechnology (DBT), Govt. of India in association with Indo-U.S. Science & Technology Forum (IUSSTF). I had been selected one among the five candidates for this fellowship at the national level.
2. Awarded best paper in international conference on Frontier in Nano Sciences, Technology and Applications on 20-22 December 2014 organized by Department of Physics, Sri Sathya Sai Institute of Higher Learning, Prashanthinilayam, Puttaparuthi, A.P.
3. Invited as distinguished speaker in international conference Phar-East 2018 Asia's Pharma & Biotech Festival from 28 Feb-2018 to 3 March 2018. Suntec Singapore Convention & Exhibition Centre, Singapore. Organised by Terrapinn Pte Ltd, Singapore.
4. Invited as a speaker in national webinar National Webinar on "Current Trends in Nanotherapeutics for Ocular and Topical Drug Delivery" Organized by Faculty of Pharmacy, DIT University, Dehradun on 30-06-2021.

Research Projects

Funding Agency	Grant No & Year Grant Received	Topic Of The Project	Status
UGC, New Delhi UGC-BSR Startup Grant	File no. [No.F. 20- 29(3)/2012(BSR)]dated 30.03.2013 Total : Rs. 6.00 lakhs	Chitosan Coated Cationic Nanoemulsion: Ocular Drug Delivery System	Completed (2013-2015)

International Collaboration/Consultancy:

- Collaborative research carried out with scientist Prof. Val C. Sheffield, Department of Pediatrics at Carver College of Medicine, University of Iowa, Iowa, USA for 12 months (July 2019-June 2020) through Genome Engineering/Editing Technology initiative (GETin) Overseas Fellowship 2018-19 funded by Department of Biotechnology (DBT).

Best Peer Reviewed Publication

1. Mohan P and **Kesavan K.** Cationic Polyelectrolyte Nanocapsules of Moxifloxacin for Microbial Keratitis Therapy: Development, Characterization, and Pharmacodynamic Study. **AAPS PharmSciTech.** (2021) 22: 195. [Impact factor – 3.246].
2. Gautam N and **Kesavan K.** Phase Transition Microemulsion of Brimonidine Tartrate for Glaucoma Therapy: Preparation, Characterization and Pharmacodynamic Study. **Curr Eye Res.** (2021) 46: 1844-1852. ISSN: 0271-3683. [Impact factor – 1.754]
3. Dubey V, Mohan P, Dangi JS, **Kesavan K.** Brinzolamide loaded chitosan-pectin mucoadhesive nanocapsules for management of glaucoma: Formulation, characterization and pharmacodynamic study. **Int J Biol Macromol.** (2020) 152: 1224-1232. ISSN:0141-8130. [Impact factor – 6.953]
4. **Kesavan K,** Mohan P, Gautam N, Sheffield VC. Topical Ocular Delivery of Nanocarriers: A Feasible Choice for Glaucoma Management. **Curr Pharm Des.** (2020) 26: 5518-5532. ISSN: 1381-6128. [Impact factor – 3.116]
5. Tiwari R, Dubey V, **Kesavan K.** Ocular Self-Microemulsifying Drug Delivery System (SMEDDS) of Prednisolone Improves Therapeutic Effectiveness in the Treatment of

- Experimental Uveitis. **Ocular Immunology and Inflammation**. (2019) 27(2): 303-311. ISSN: 0927-3948. [Impact factor – 2.112]
6. Kathle PK, Gautam N, **Kesavan K.** Tamoxifen citrate loaded chitosan-gellan nanocapsules for breast cancer therapy: development, characterisation and *in-vitro* cell viability study. **Journal of microencapsulation**. (2018) 35(3): 292–300. ISSN: 0265-2048. [Impact factor – 2.287]
 7. Bharti S.K. and **Kesavan K.** Phase Transition W/O Microemulsions for Ocular Delivery: Evaluation of Antibacterial Activity in the Treatment of Bacterial Keratitis. **Ocular Immunology and Inflammation**. (2017) 25(4):463-474. ISSN: 0927-3948 [Impact factor – 2.112]
 8. Kumari B and **Kesavan K.** Effect of Chitosan Coating on Microemulsion for Effective Dermal Clotrimazole Delivery. **Pharm Dev. Technol.** (2017) 22(4):617-626. ISSN: 1083-7450. [Impact factor – 2.169]
 9. **Kesavan K**, Shri Kant, Singh PN, Pandit JK.. Therapeutic Effectiveness in the Treatment of Experimental Bacterial Keratitis with Ion-activated Mucoadhesive Hydrogel. **Ocul Immunol Inflamm.** (2016) 24(5):489-492. ISSN: 0927-3948. [Impact factor – 2.112]
 10. Lanjhiyana SK, Bajpayee P, **Kesavan K**, Lanjhiyana S, Muthu MS.. Chitosan-sodium alginate blended polyelectrolyte complexes as potential multiparticulate carrier system: colon-targeted delivery and gamma scintigraphic imaging. **Expert Opin Drug Deliv.** (2013) 10: 5-15. ISSN: 1742-5247. [Impact factor – 5.79]

Research Supervision

Ph.D. Students guided/under guidance (Details):

S. No	Name of Scholar	Title of Work	Registration Date	Thesis submission
1.	Nivedita Gautam	Phase transition microemulsion as carrier system for ocular drug delivery	16-09-2014	31-12-2021
2.	Mohan P	Studies on mucoadhesive nanocarriers for effective treatment of ocular diseases	26-10-2016	22-10-2021

Total no. of M. Pharm. Students guided: 09

Administrative Responsibilities

S. No	Position	Responsibility	Duration	Level (University/Department)
1.	Warden	Supervision of Swami Vivekananda Boys Hostel	March 2018 to July 2019	University
2.	Member	Committee for sign board in University campus	22-09-2021	University
3.	Member	Scrutiny committee for recruitment	13-12-2021	University
4.	PG Coordinator	Coordination of AICTE Fellowship to PG Students	25-01-2022	Department
5.	Member	Committee for AICTE 360 feedback system	07-01-2022	Department
6.	Member	Committee for department e-News letter	07-01-2022	Department
7.	Academic Head	B. Pharm 3 semester for Academic session 2021-22	20-01-2022	Department

Additional Information

Dr. Kesavan Karthikeyan is a well-versed nanotechnologist, with expertise in developing nanoparticulate systems for delivering drugs to eye for the treatment of ocular diseases. He has over ten years experience in research of nanocarrier based ocular drug delivery system. His research group working on the development of positively charged nanocarrier as effective system for ocular drug delivery and gene therapy, which have been important interests because of prolongs drug retention time and improve the drug penetration rate through electrostatic interaction on ocular surface. He has presented 12 oral/poster research papers in various national and international conferences. He has extensively review manuscripts for many leading journals including Expert Opin Drug Deliv, Drug Dev Ind Pharm, Int J Pharm, Drug Deliv, Curr eye Res.



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