

Dear Members of the Search Committee,

I am writing to apply for the position of Senior Research Associate in your esteemed Organisation. I completed my full-time Ph.D from VIT University-Vellore in the Department of Organic Chemistry. Currently I am working as Associate Professor-Department of Pharmaceutical Chemistry in Saveetha College of Pharmacy, Thandalam, Chennai, Tamilnadu, India.

My primary research goals are directed towards the functionalization of 2,3-dihydroquinazolinones and its interaction study with biomacromolecules (Bovine serum albumin, lysozyme and DNA). The synthesized derivatives were characterized by IR, NMR and mass spectroscopy. In addition, the synthesized derivatives were screened for their anti-inflammatory, anti-oxidant, antityrosinase, anthelmintic and antifungal activity. The interaction between the protein and the ligand were analyzed by various spectroscopic techniques. The results obtained from the biological activity and the protein-ligand interaction study was correlated using molecular docking studies. The interaction of the ligand with DNA was also studied. My future plan of work is aimed towards the interaction study of ligands with other important proteins.

Beyond my research successes (9 publications and two papers under review). I have been assisting engineering students in the laboratory time. I have also been actively participated in organizing various conferences, seminars and workshops. I found that my professional experience provided me with a broad view that is useful in assisting students with projects and assignments. These experiences have built my confidence and interest in research & teaching and I look forward to find out the opportunity to develop the new ones. I will work hard to bring out the best.

Enclosed are my curriculum vitae, publication record, teaching and research statements. Please do not hesitate to contact me if further information is needed.

Thank you for your time and consideration. I am looking forward to hear from you.

Yours sincerely,

Dr. K. Hemalatha

CURRICULUM VITAE

HEMALATHA KANAGARAJAN

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EDUCATION

- 2012-2017** **Doctor of Philosophy (Medicinal Chemistry)**
VIT University, Vellore, Tamil nadu, India
Thesis: “Functionalization and Biological Applications of 2,3-Dihydroquinazoline-4-Ones-Molecular Docking and its Interaction Studies with Protein/DNA”
- 2007-2009** **Master of Pharmacy (Pharmaceutical Chemistry) - First class with distinction**
The Tamil nadu Dr. MGR Medical University, C.L. Baid Metha College of Pharmacy, Chennai, Tamil nadu, India
Thesis: “Computational Analysis, Synthesis, Characterization and Biological Evaluation of 1-N-Substituted 2-Pyrazolines”
- 2002- 2006** **Bachelor of Pharmacy (Pharmaceutical Sciences) - First class**
The Tamil nadu Dr. MGR Medical University, Mohammed Sathak A. J. College of Pharmacy, Chennai, Tamil nadu, India
Thesis: “Evaluation of Anti- Parkinsonism, Anti- convulsion, Anti- nociceptive and anti- microbial activity of Vitex negundo”
- 2000- 2002** **Higher Secondary Certificate - First class with distinction**
Tamil nadu State Board, Muruga Dhanushkodi Girls Higher Secondary School, Chennai, Tamil nadu, India
- 1995- 2000** **Secondary School Leaving Certificate - First class with distinction**
Tamil nadu State Board, Muruga Dhanushkodi Girls Higher Secondary School, Chennai, Tamil nadu, India

EXPERIENCE

Research

- 2012- 2016** **Vellore Institute of Technology, Vellore, Tamil nadu, India**
- Conducted doctoral thesis research in the synthesis of dihydroquinazolinones and investigating its various biological

applications.

- Resulted in 9 publications, 1 under communication and 1 publication yet to be submitted.
- Assisted in preparing research proposals for various funding agencies.
- Assisted engineering students in Engineering Chemistry practicals.

Teaching

**Feb 2021-
till date**

Associate Professor, Saveetha College of Pharmacy, Thandalam, Chennai, Tamil nadu, India

- Involved in teaching both theoretical and practical aspects of various chemistry subjects for Diploma in Pharmacy and B.Pharm students.
- Involved in organizing monthly events to evaluate the extra-curricular activities of students
- Involved in organizing journal club to improve the research capabilities of students.

**Jan 2019-
Feb 2021**

Associate Professor, Jaya College of Pharmacy, Thiruninravur, Chennai, Tamil nadu, India

- Involved in teaching both theoretical and practical aspects of various chemistry subjects for Diploma in Pharmacy, B.Pharm and Pharm.D students

**Aug 2017-
Oct 2017**

Academic Support Specialist, BioTecNika, Bangalore, Karnataka, India.

- Involved in taking classes for **CSIR-NET examination in Chemical sciences.**

**Dec 2016-
June 2017**

Assistant Professor, T. John College of Pharmacy, Bangalore, Karnataka, India.

- Involved in teaching both theoretical and practical aspects of various chemistry subjects for B.Pharm and Pharm.D students.

2009-2012

Assistant Professor, Saastra College of Pharmaceutical Education & Research, Nellore, Andhra Pradesh, India

- Involved in teaching both theoretical and practical aspects of various chemistry subjects for B.Pharmacy students.
- Designed course materials and demonstrated important mechanism of action of drugs through videos.
- Developed laboratory manuals to illustrate the course concepts.
- Led various discussion sessions elucidating the general mechanism of

action and structural-activity relationship study of various heterocyclic nucleus present in the drug.

- Supervised undergraduate level project on the synthesis of basic heterocyclic nucleus and molecular docking.
- Played the role of examination incharge.
- Played lead role in preparing documents for the inspection of various governing bodies (AICTE, JNTUA)

COURSES TAUGHT

Undergraduate Level

- Organic Chemistry
- Biochemistry
- Medicinal Chemistry
- Inorganic Chemistry
- Analytical Chemistry

SKILLS

Bioinformatics Tools:

Autodock tool and Discovery Studio

Data Analysis Tool:

Origin, GraphPad

Chemistry Databases and Software:

SciFinder, ChemDraw

Chemistry Characterization Software:

TopSpin

Reference Management Software:

EndNote and Mendeley

PUBLICATIONS

Review Articles

- **Hemalatha, K.;** Madhumitha,G., Synthetic strategy with representation on mechanistic pathway for the therapeutic applications of dihydroquinazolinones, *European Journal of Medicinal Chemistry*, 2016, 123, 596-630. **(Impact Factor: 7.088)**
- **Hemalatha, K.;** Madhumitha,G., Inhibition of Poly (Adenosine Diphosphate-Ribose) Polymerase using quinazolinone nucleus, *Applied microbiology and biotechnology*, 2016, 100, 7799-7814. **(Impact Factor: 5.560)**
- **Hemalatha, K.;** Anupama, N.; Madhumitha, G.; Rajesh, S.; Kajbafvala, A.; Roopan, S.M., Function of nanocatalyst in chemistry of organic compounds revolution: an overview, *Journal of Nanomaterials*, **2013**, 2013, 1-23. **(Impact Factor: 3.791)**

Conference Proceedings

- **Hemalatha, K.;** Madhumitha, G.; Roopan, S.M., Indole as a core anti-inflammatory agent- A mini review, *Chemical Science Review and Letters*, **2013**, 2, 287-292.

Research Articles

- **Hemalatha, K.;** Madhumitha, G.; Al-Dhabi, N.A.; Arasu, M.V., Importance of fluorine in 2,3-dihydroquinazolinone and its interaction study with lysozyme, *Journal of Photochemistry and Photobiology B: Biology*, **2016**, 162, 176-188. (**Impact Factor: 6.814**)
- **Hemalatha, K.;** Madhumitha, G., Study of binding interaction between anthelmintic 2,3-dihydroquinazolin-4-ones with bovine serum albumin by spectroscopic methods, *Journal of luminescence*, **2016**, 178, 163-171. (**Impact Factor: 4.171**)
- **Hemalatha, K.;** Madhumitha, G.; Ravi, L.; Khanna, V.G.; Al-Dhabi, N.A.; Arasu, M.V., Binding mode of dihydroquinazolinones with lysozyme and its antifungal activity against *Aspergillus* species, *Journal of Photochemistry and Photobiology B: Biology*, **2016**, 161, 71-79. (**Impact Factor: 6.814**)
- **Hemalatha, K.;** Madhumitha, G., Eco-friendly synthesis of palladium nanoparticles, environmental toxicity assessment and its catalytic application in Suzuki Miyaura coupling, *Research Journal of Pharmacy and Technology*, **2015**, 8, 1691-1700.
- **Hemalatha, K.;** Madhumitha, G.; Vasavi, C.S.; Munusami, P., 2,3-Dihydroquinazolin-4(1H)-ones: Visible light mediated synthesis, solvatochromism and biological activity, *Journal of Photochemistry and Photobiology B: Biology*, **2015**, 143, 139-147. (**Impact Factor: 6.814**)

Note: Total impact factor: 41.052, Overall Citations: 266, h-index: 9, i10 index: 9.

Google scholar link:

https://scholar.google.com/citations?user=VKL_pvYAAAAJ&hl=en&authuser=1

Linkedin link:

https://www.linkedin.com/feed/?trk=guest_homepage-basic_nav-header-signin

Researchgate link:

<https://www.researchgate.net/profile/Hema-Latha-32>

HONORS

Awards

Research award **2017** - VIT University, *Vellore, Tamil nadu, India*

Research award **2015** - VIT University, *Vellore, Tamil nadu, India*

Research award **2013** - VIT University, *Vellore, Tamil nadu, India*

Fellowship

Research Associateship (**October 2012-September 2016**) - VIT University, *Vellore, Tamil nadu, India*

Member of Editorial Board

Certificate of Excellence for outstanding efforts as **Member of Editorial Board** for edited book titled "The Paradigm Shift in Consumer Behaviour: The Truth of Consumer and their Shopping Psychology" (ISBN-978-93-92978-02-9)

PROFESSIONAL DEVELOPMENT

Invited Talk

2016 National Seminar on INNOVATIONS IN DRUG DEVELOPMENT AND CLINICAL SKILLS IN PHARMACY PRACTICE

Venue: Crescent College of Pharmaceutical Sciences, *Kannur, Kerala, India*

Date: January 22-23

Topic: Biomarkers in Drug Development

2022 Motivational speech about ATHLETICS & FITNESS

Venue: Avadi Military Hospital

Date : May 03

Oral Presentation

2016 National Conference on RECENT TRENDS IN CHEMICAL SCIENCES FOR ENERGY AND ENVIRONMENT

Venue: Thanthai Hans Roever College, *Perambalur, Tamil nadu, India*

Date: April 1-2

Topic: Synthesis of 2,3-Dihydroquinazoliones & its Interaction with Bovine Serum Albumin

2015 International Conference on INNOVATIVE RESEARCH & TECHNOLOGY

Venue: Sri Venkateshwaraa College of Arts & Science, *Dharmapuri, Tamil nadu, India*

Date: May 23

Topic: Synthesis & Interaction Studies of 7-Fluorinated 2,3-Dihydroquinazolinones with Lysozyme

2014 National Seminar on PLANT MADE PHARMACEUTICALS & APPROACHES TO THE SYNTHESIS OF BIO-ACTIVE NATURAL PRODUCTS

Venue: Hindu College, *Guntur, Andhra Pradesh, India*

Date: July 18-19

Topic: A Mini Update on Brominated Alkaloids

Poster Presentation

2013 International Conference on MULTIDISCIPLINARY FRONTIERS OF MEDICINAL CHEMISTRY: SYNTHESIS, MOLECULAR BIOLOGY & TECHNOLOGY

Venue: Sastra University, *Thanjavur, Tamil nadu, India*

Date: January 18-19

Topic: Synthesis of Oxindole Alkaloids

Workshops

2022 Online Workshop on IMPROVING SCIENTIFIC RESEARCH WRITING AND PUBLICATION SKILLS

Venue: RKDF University, *Bhopal (MP)*

Date: April 16

2013 National Workshop on ALTERNATIVES TO ANIMAL TESTING IN DRUG DISCOVERY

Venue: JSS College of Pharmacy, *Udhagamandalam, Tamil nadu, India*

Date: September 2-3

2012 International Workshop on ADVANCED TOPICS IN CHEMISTRY AND PHYSICS

Venue: Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya, *Kanchipuram, Tamil nadu, India*

Date: November 26-27

Conference

2021 Virtual Conference EMERGING INFECTIOUS DISEASES AND NOVEL DRUG DEVELOPMENT

Venue: Swami Vivekanandha College of Pharmacy, *Tiruchengode, Tamil nadu*

Date: December 3-4

Faculty Development Program

Conducted:

2022 STRUCTURAL ELUCIDATION OF ORGANIC COMPOUNDS BY SPECTROSCOPY METHODS

Venue: Saveetha College of Pharmacy, *Chennai, Tamilnadu*

Date : March 28

2022 HEALTH BANK-A DIGITAL PLATFORM FOR MEDICAL RECORDS

Venue: Saveetha College of Pharmacy, *Chennai, Tamilnadu*

Date : May 16

Attended:

2022 i) ROLE OF RATING ON IMPROVING QUALITY AND QSI-GUAGE

ii) FUNDING OPPORTUNITIES IN ICMR

Venue: Saveetha Dental College & Hospitals, *Chennai, Tamilnadu*

Date : July 1

Training

- 3 months training in COMPUTATIONAL ANALYSIS OF 1-SUBSTITUTED 2-PYRAZOLINES at M.I.T Campus of Anna University, *Chennai, Tamil nadu, India* (November 2008-January 2009)
- One month industrial training in production, quality control, product development and stores training at The Madras Pharmaceuticals, *Chennai, Tamil nadu, India*.

REFEREES

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