

Dr. BALAKUMAR CHANDRASEKARAN

B. Pharm., M. Pharm., PhD & PostDoc

Current Position: Professor-Faculty of Pharmacy, Philadelphia University-Jordan

E-mail ID: dhillbalu@gmail.com; balakumar@philadelphia.edu.jo (work)

Work URL: <https://www.philadelphia.edu.jo/academics/balakumar/page.php?id=2>

Google Scholar: <https://scholar.google.com/citations?hl=en&user=2f7FaFEAAAAJ>

(h-index = 29; i10-index = 57; citations: 2616)

LOOP ID: <https://loop.frontiersin.org/people/1008807/overview>

ORCID: <https://orcid.org/0000-0003-4198-8679>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=36614134400>

(Recognized as Top2% scientists in the Elsevier & Stanford University Survey-2024)

Career Summary

- Pharmacy education: **Bachelor of Pharmacy, Master of Pharmacy in Pharmaceutical Chemistry, PhD (Pharmaceutical Sciences), and PostDoctoral** (Pharmaceutical Medicinal Chemistry and Drug Design).
- Total professional experience (teaching + research): **19 years** after PG in India and Abroad.
- Good research accomplishments include 75 paper publications, 09 patents, 20 book chapters, and editorial books (**04**) and editorial journals (**02**).
- **Design** of novel biologically active organic molecules by *in silico* **CADD** technology.
- Expertise in the **medicinal synthesis** of new chemical entity (**NCE**) and instrumental methods of analysis of active pharmaceutical ingredients (**APIs**) and drug intermediates.
- Industrial Projects: **Pharmaceutical Analysis-Karpagam Pharma LLP**, Coimbatore, India
- Hospital Pharmacist: Dispensing of the prescribed medicines and counseling.
- **Administrative skills:** Dean, HOD of Pharmaceutical Chemistry, HOD of Organic Chemistry, Administrative committees, Documentation for accreditation of course programs, and students' engagements.
- Recipient of research funding and completed many research projects and assignments, individually and as part of a research group.
- **Editorial Services and Reviewer:** Elsevier, Wiley, MDPI and Frontiers Publishers.

Teaching Areas/Courses handled

- ✓ Drug Design
- ✓ Pharmaceutical Medicinal Chemistry-I
- ✓ Pharmaceutical Organic Chemistry
- ✓ Modern Methods of Pharmaceutical Analysis
- ✓ Organic Chemistry-II
- ✓ Biochemistry-I
- ✓ Modern Pharmaceutical Analytical Techniques (Master's Program)
- ✓ Computer-aided Drug Development (Master's Program)
- ✓ Phytotherapy
- ✓ Pharmacognosy and Phytochemistry
- ✓ Bioinformatics
- ✓ Pharmacy informatics and Automation

Areas of Research

- ❖ Computer-aided drug design (CADD) of pharmacologically active small molecules.
Docking: Glide (Schrodinger), *Molecular Dynamics*: AMBER; *Homology Modeling*: Prime-Schrodinger; *Pharmacophore modeling*: PHASE (Schrodinger); and *3D-QSAR*: Cerius2 version 4.10 (3D-QSAR: MSA and MFA).
- ❖ Design and development of novel medicinal compounds as anticancer, antimicrobial, antitubercular, wound-healing agents, and anti-asthmatics.
- ❖ Synthesis of medicinal compounds by green chemistry techniques, analysis, characterization, and evaluation. Executing synthetic schemes with multistep organic synthesis including green chemistry (one-pot solvent-free / microwave-assisted) using CEM Discover - Microwave Organic Synthesizer.
Spectral Characterization Techniques: *FT-IR*: Bruker Alpha FT-IR spectrometer;
NMR: Bruker AVANCE III 400 MHz (Topspin software); *LC-MS*: Bruker ESI-QTOF mass spectrometer.
- ❖ Methods for purification of organic compounds using conventional column and flash column chromatography (Combi Flash® NextGen 300+) and conventional column techniques.

- ❖ Impurity profiling for medicinal/pharmaceutical substances, analytical method development, and validation for bulk drugs and formulations.
- ❖ Green biosynthesis of metal nanoparticles from natural extracts and natural phytoconstituents and their characterization with pharmacological evaluation.

Administrative Experiences

Dean-School of Pharmacy

- Conducted Board of Studies Meetings regularly and updated the course syllabi as per the current industrial requirements.
- Organized expert talks/seminars at the faculty level and University level.
- Chairman-Scientific track for Conference (TIMS) at University level.
- Conducting faculty meetings and implementing the course requirements from time to time as per the direction of the University Vice-Chancellor/President of the University.
- Directing faculty members for drafting various documentation for course accreditation at the national level.
- Scrutinizing different academic committees for the smooth functioning of the faculty.
- Participated in the recruitment process as a member of the selection committee at the University level.
- Drafting the requirements for the faculty and scrutinizing to obtain approval from higher authorities.
- Maintaining International relationships for active collaboration in teaching and research activities through MoUs.

Head of Department-Pharmaceutical Chemistry and Organic Chemistry

- Conducting department faculty meetings and implementing curriculum development
- Lab manual drafting and including modern methods of green synthesis in organic chemistry Lab experiments.
- Key role in American Accreditation (Accreditation Council for Pharmacy Education) and Canadian Accreditation file drafting and documentation
- Organized exit exam for graduating pharmacy students.
- Membership in Research committee, Exam committee, Public relationship committee, Lab safety committee, and Seminar committee.

- Documentation of Quality Assurance files at the faculty level, faculty council and the strategic planning activities.
- Participating in social activities and community services with students and faculty members.

PhD

Subject	Institute	University
Ph.D. in Pharmaceutical Sciences	Department of Pharmaceutical Chemistry, University Institute of Pharmaceutical Sciences (UIPS), Chandigarh, India.	Panjab University, Chandigarh, India.

PostDoc Research

Subject	Institute	University
DST-NRF Innovation PostDoc Research Fellow in Pharmaceutical Sciences	Department of Pharmaceutical Chemistry, Discipline of Pharmaceutical Sciences, College of Health Sciences	University of KwaZulu-Natal (UKZN), Westville-Durban, South Africa.

Honorary Positions held

- ❖ **Adjunct Teaching (online)** - Faculty of Pharmaceutical Sciences, UCSI University, 56000, Cheras, Kuala Lumpur, Malaysia (2021-2022).

Other Competitive Exams Qualified

1. Tamil Nadu Professional Course Entrance Examination (**TNPCEE**) [Mathematics, Biology and Physical Sciences (Physics & Chemistry)] for admission to B. Pharmacy (**undergraduate**).
2. Graduate Aptitude Test in Engineering (**GATE**) with **95.32** percentile for admission to M. Pharmacy (**postgraduate**), conducted by IIT-Chennai.
3. Distance learning course on ‘Intellectual Property Rights organized by “World Intellectual Property Organization (WIPO)” Geneva, Switzerland by online mode.

Achievements/Awards

- ❖ Research Citation Award by Philadelphia University on 27th November 2024.

- ❖ Awarded **Innovation PostDoctoral Research Fellowship** from National Research Foundation (**NRF**), Department of Science and Technology (**DST**), **South Africa** for Anticancer Drug Research.
- ❖ Awarded **PostDoctoral Research Fellowship** from the College of Health Sciences, UKZN, **South Africa** for Anticancer Drug Research.
- ❖ Awarded **Research Fellowship** in Science for Meritorious Students (**RFSMS**) by University Grants Commission (**UGC**), New Delhi, India.
- ❖ Awarded **AICTE-GATE** Fellowship by All India Council for Technical Education (**AICTE**) for **M. Pharm** Course.
- ❖ Achieved **Distinction** in M. Pharmacy - Pharmaceutical Chemistry Division, LM College of Pharmacy, Gujarat University, India.

Editorial Services

- **Associate Editor:** Frontiers in Molecular Biosciences: Molecular Diagnostics and Therapeutics (**Frontiers**, Impact Factor: 5.0)
- **Section Editor:** Pharmaceutical Sciences-Toxicology for the Journal Current Indian Science (**Bentham Publisher**)

Patents: 09 (08-Granted; 01-Filed)

1. K. Sivanandhan, **C. Balakumar**, K. Rajshekhar, K. Afsana. *N*-substituted isatin hydrazones as antimycobacterial and antimicrobial agents. **South African Patent** (No. 2016/08234).
2. K. Sivanandhan, **C. Balakumar**, K. Rajshekhar, K. Afsana. Pharmaceutical Compounds. **PCT-International Patent** Application No. PCT/IB2017/057437, WO2018100484.
3. C. Sampath, B. Prathima, K. Kavita, P. Krishnamurthy, **C. Balakumar**, B. S. Afzal, R. Richie, V. Yogesh, A. Haritha, N. Arin. In silico screening, physicochemical and pharmacokinetic analysis of novel sulfonamides as potential antimicrobial drugs docked with protein targets: PDB: 2VF5, 1KZN and 1JJJ. **Australian Patent** Number: 2021105099, granted on 23-09-2021.
4. C. Sampath, B. Prathima, **C. Balakumar**, P. Krishnamurthy, C. Sridevi, K. Kavita, M. Parameshwar, R. Shruti, K. Sai Saranya, S. R. Kavya, V. R. Kishore Kumar. In silico evaluation and synthesis of novel sulfonamides as promising antiviral drugs docked with COVID-19 protein targets: SARS-CoV-2 main protease. **Australian Patent** Number: 2021105627, granted on 10-11-2021.
5. S. Govindaraju, S. Tabassum, C. Sampath, B. Prathima, K. Khatana, **C. Balakumar**, K. Potla, R. Garugumadi, S. Joripalli, I.L. Konathala, Computer aided drug design and green synthesis of novel pyrazole analogues as potential SARS-CoV-2 main protease inhibitors against anti COVID-19 protein targets. **Australian Patent** Number: 2021106444 granted on 01-12-2021.
6. S.B. Banappagoudar, S. Thakur, A. Chauhan, M. Alagusundaram, M. Pal, Rajni, R. Kumar, **B.**

- Chandrasekaran**, B. M. Sahoo, A. Kazim, A system for prediction, prevention, and diagnosis of heart-related diseases at an early stage using deep learning. **Indian Patent Design** Application Number: 202221053088 published on 28-10-2022.
7. P.D.G. Sireesha, **B. Chandrasekaran**, D.K. Patil, S.B. Fakruddin, M. Jaimini, A. Pandey, V.J.S. Reddy, S.K. Madhra, R. Kameshwaran, M.K. Katual, S.P. Singh, "AI-enabled device for Parkinson's Disease". **Indian Patent Design** Application Number: 2024-408750-001 filed on 26-02-2024.
 8. **B. Chandrasekaran**, R.S. Iliger, M.M. Johnson, R. Mishra, V. Narayanan, S.P. Rajendran, S.R.S. Rudrangi, M.H. Singh, N. Tavker, S. Yadav, Liposomal formulation for site-specific drug delivery in liver cirrhosis, **German Design Patent** Number: 20-2024-100935 Granted on 08-03-2024.
 9. **B. Chandrasekaran**, D. Rath, A.A. Baig, R. Kulshrestha, S.K. Jain, P.K. Samal, M.C. Divakar, I. Pandey, Y.K. Kumar, S. Das, Smart transdermal patch for monitoring of type 2 diabetes, **UK Design Patent** Number: 6387569, Granted on 09-09-2024.

Research Publications: 75

1. D. Choudhary, B. Kumar, **B. Chandrasekaran**, T.G. Singh, R. Kaur, A. Aldahish, R. Vasudevan, P. Balaji, Microwave-assisted synthesis of morpholine-based chalcones as reversible MAO-A inhibitors in the management of mental depression. *Pharmaceuticals* **2025**, *18*, 309 [DOI: 10.3390/ph18030309; Impact Factor: **4.3**].
2. **B. Chandrasekaran***, M.F. Bayan, A. Hmedat, B.A. Al-Jaidi, D.M. Al-Tawalbeh, D. Abuarqoub, A.J. Rasras, D.M.M. Jaradat, A.N. Dakkah, W. Hourani, R. Karpoormath, Synthesis, anticancer screening, and in silico evaluations of thieno[2,3-*c*]pyridine derivatives as Hsp90 inhibitors. *Pharmaceuticals* **2025**, *18*, 153 [DOI: 10.3390/ph18020153; Impact Factor: **4.3**].
3. B. Kushwaha, N.D. Kushwaha, B.B. Shaik, **B. Chandrasekaran**, V.A. Obakachi, S. Mokoena, S.B. Mohite, R. Karpoormath, Pyridazinone: A privileged scaffold for synthetic and biomedical applications, *Journal of Molecular Structure*, **2025**, *1326*, 140948 [DOI: 10.1016/j.molstruc.2024.140948; Impact Factor: **3.8**].
4. A.J. Rasras, D.M.M. Jaradat, **B. Chandrasekaran**, L. Hamadneh, E.A. Younes, M.A. Nuwar, N. Khazaleh, A. Mahli, M.S. Al-Zubi, Evaluation of anticancer activity of some new hybrids of 1,3,4-oxadiazole tethered cinnamamides, *Journal of Molecular Structure* **2024**, 140438 [DOI: 10.1016/j.molstruc.2024.140438; Impact Factor: **4.0**].
5. **B. Chandrasekaran***, P. Boomi, M.F. Bayan, S. Muthumanickam, M.H. Alyami, Computational design of a novel inhibitor against COVID, *Letters in Drug Design and Discovery* **2024**, *21*, 3934-3945 [DOI: 10.2174/0115701808322637240722052915; Impact Factor: **1.2**].
6. J.K. Singh, S. Kaur, **B. Chandrasekaran***, G. Kaur, B. Saini, R. Kaur, P. Silakari, N. Kaur, P.

- Bassi, A QbD-navigated approach to the development and evaluation of etodolac–phospholipid complex containing polymeric films for improved anti-Inflammatory effect, *Polymers* **2024**, *16*, 2517 [DOI: 10.3390/polym16172517; Impact Factor: **4.7**].
7. S. Ashique, N. Kumar, N. Mishra, S. Muthu, R.L. Rajendran, **B. Chandrasekaran**, B.F. Obeng, C.M. Hong, A. Krishnan, B-C. Ahn, P. Gangadaran, Unveiling the role of exosomes as cellular messengers in neurodegenerative diseases and their potential therapeutic implications, *Pathology - Research and Practice* **2024**, *260*, 155451 [DOI: 10.1016/j.prp.2024.155451; Impact Factor: **2.9**].
 8. M. Albratty, N. Thangavel, **B. Chandrasekaran**, A.M. Meraya, H.A. Alhazmi, S. Muthumanickam, P. Boomi, N.B. Bhagavan, S.F. Saleh, Benchmarking docking, density functional theory and molecular dynamics studies to assess the aldose reductase inhibitory potential of Trigonella foenum-graecum compounds for managing diabetes-associated complications. *Pharmacia* **2024**, *71*, 1–10 [DOI: 10.3897/pharmacia.71.e118949; Impact Factor: **1.1**].
 9. N.K. Jain, M. Tailang, N. Thangavel, H.A. Makeen, M. Albratty, A. Najmi, H.A. Alhazmi, K. Zoghebi, M. Alagusundaram, H.K. Jain, **B. Chandrasekaran**, A comprehensive overview of selective and novel fibroblast growth factor receptor inhibitors as a potential anticancer modality, *Acta Pharmaceutica* **2024**, *74*, 1-36 [DOI: 10.2478/acph-2024-0005; Impact Factor: **2.8**].
 10. N.K. Jain, M. Tailang, **B. Chandrasekaran**, N. Khaszaleh, N. Thangavel, H.A. Makeen, M. Albratty, A. Najmi, H.A. Alhazmi, K. Zoghebi, M. Alagusundaram, H.K. Jain, Integrating network pharmacology with molecular docking to rationalize the ethnomedicinal use of Alchornea laxiflora (Benth.) Pax & K. Hoffm. for efficient treatment of depression, *Frontiers in Pharmacology* **2024**, *15*, 1290398 [DOI: 10.3389/fphar.2024.1290398; Impact Factor: **5.6**].
 11. R. Kaur, D. Choudhary, S. Bali, S.S. Bandral, V. Singh, Md A. Ahmad, N. Rani, T.G. Singh, **B. Chandrasekaran**, Pesticides: An alarming detrimental to health and environment, *Science of The Total Environment*, **2024**, *915*, 17011 [DOI: 10.1016/j.scitotenv.2024.170113; Impact Factor: **9.8**].
 12. M.F. Bayan, **B. Chandrasekaran**, M.H. Alyami, Development and characterization of econazole topical gel, *GELS* **2023**, *9*, 929 [DOI: 10.3390/gels9120929; Impact Factor: **4.6**].
 13. M. Abu Nuwar, D.M.M Jaradat, **B. Chandrasekaran***, I. Natsheh, A.J. Rasras, M.S.H. Alzubi, R. Karpoomath, F. Khalili, L. Hamadneh, A.A. Dahadha, T. Arafat, Design, synthesis, anticancer screening and molecular modelling studies of novel thiazoles, *ChemistrySelect* **2023**, *8*, e202302319 [DOI: 10.1002/slct.202302319; Impact Factor: **2.1**].
 14. D. Choudhary, A. Kaur, P. Singh, G. Chaudhary, R. Kaur, M.F. Bayan, **B. Chandrasekaran***, S.M. Marji, R. Ayman, Target protein degradation by PROTACs: A budding cancer treatment strategy, *Pharmacology and Therapeutics*, **2023**, *250*, 108525 [DOI: 10.1016/j.pharmthera.2023.108525; Impact Factor: **13.5**].

15. M. Alagusundaram, N.K. Jain, M.Y. Begum, S.A. Parameswari, V.K. Nelson, M.F. Bayan, **B. Chandrasekaran**, Development and characterization of gel-based buccoadhesive bilayer formulation of Nifedipine, *GELS* **2023**, 9, 688 [DOI: 10.3390/gels9090688; Impact Factor: **4.6**].
16. K.C. Panda, B.V.V Ravi Kumar, B.M. Sahoo, **B. Chandrasekaran**, P. Swain, Molecular docking, multicomponent one-pot synthesis of pyrimidine derivatives as anti-mycobacterial agents, *Anti-Infective Agents*, **2023**, 21, 6-12 [DOI: 10.2174/2211352521666230330094431].
17. R. Kaur, K. Kaur, M.H. Alyami, D. K. Lang, B. Saini, M.F. Bayan, **B. Chandrasekaran**, Combating microbial infections using metal-based nanoparticles as potential therapeutic alternatives, *Antibiotics* **2023**, 12, 909 [DOI: 10.3390/antibiotics12050909; Impact Factor: **4.8**].
18. B. Kushwaha, N.D. Kushwaha, M. Priya, **B. Chandrasekaran**, V.A. Obakachi, R. Chauhan, S. Kidwai, R. Singh, A.M. Ganai, R. Karpoormath, Novel fluorophenyl tethered thiazole and chalcone analogues as potential antitubercular agents: Design, synthesis, biological and in silico evaluations, *Journal of Molecular Structure*, **2023**, 1276, 134791 [DOI: 10.1016/j.molstruc.2022.134791; Impact Factor: **3.8**].
19. R. Raju, K. Chidambaram, **B. Chandrasekaran**, M.F. Bayan, T.K. Maity, A.M. Alkahtani, H.C. Chandramoorthy, Synthesis, pharmacological evaluation and molecular modeling studies of novel isatin hybrids as potential anticancer agents, *Journal of Saudi Chemical Society* **2023**, 27, 101598 [DOI: 10.1016/j.jscs.2023.101598; Impact Factor: **5.6**].
20. B.J. Chelladurai, R. Anburose, M.H. Alyami, M. Sellappan, M.F. Bayan, **B. Chandrasekaran**, K. Chidambaram, M. Rahamathulla, Development of a polyherbal topical gel for the treatment of acne, *GELS* **2023**, 9, 163 [DOI: 10.3390/gels9020163; Impact Factor: **4.6**].
21. **B. Chandrasekaran***, M. Saravanan, Pharmacological and biochemical perspectives of kinase inhibitors in cancer and COVID-19 therapeutics, *Frontiers in Pharmacology* **2023**, 14, 1229673 [DOI: 10.3389/fphar.2023.1229673; Impact Factor: **5.6**].
22. N.K. Jain, M. Tailang, H.K. Jain, **B. Chandrasekaran,*** B.M. Sahoo, A. Subramanian, N. Thangavel, A. Aldahish, K. Chidambaram, M. Alagusundaram, S. Kumar, P. Selvam, Therapeutic implications of current Janus kinase inhibitors as anti-COVID agents: A review, *Frontiers in Pharmacology* **2023**, 14, 1135145 [DOI: 10.3389/fphar.2023.1135145; Impact Factor: **5.6**].
23. N.K. Jain, M. Tailang, S. Kumar, **B. Chandrasekaran,*** Y. Alghazwani, H.C. Chandramoorthy, A. Kumar, H. Deshpande, P. Wal, M. Balamurugan, K. Chidambaram, Appraising the therapeutical potentials of Alchornea laxiflora (Benth.) Pax & K. Hoffm., an underexplored medicinal herb: A systematic review, *Frontiers in Pharmacology* **2022**, 13, 958453 [DOI: 10.3389/fphar.2022.958453; Impact Factor: **5.6**].
24. M.F. Bayan, S.M. Marji, M.S. Salem, Y.M. Begum, K. Chidambaram, **B. Chandrasekaran**,

- Development of polymeric-based formulation as potential smart colonic delivery system, *Polymers* **2022**, *14*, 3697 [DOI: 10.3390/polym14173697; Impact Factor: **5.0**]
25. **B. Chandrasekaran***, M. Saravanan, Pharmacological and biochemical perspectives of kinase inhibitors in cancer and COVID-19 therapeutics, *Frontiers in Pharmacology* **2022**, *13*, 916324 [DOI: 10.3389/fphar.2022.916324; Impact Factor: **5.6**].
 26. M.K. Ramar, K. Chidambaram, **B. Chandrasekaran**, R. Kandasamy, Standardization, in-silico and in-vivo safety assessment of methanol extract of *Ziziphus mauritiana* Lam leaves, *Regulatory Toxicology and Pharmacology* **2022**, *131*, 105144 [DOI: 10.1016/j.yrtph.2022.105144; Impact Factor: **3.4**]
 27. K. Anand, M. Ramesh, T. Singh, **C. Balakumar**, V. Chithravel, P. Prasher, N.K. Katari, G. Gupta, S.K. Singh, D.K. Chellappan, K. Dua, V. Chavda, A. Laishevtcev, Mohd Shahbaaz, M.H. Abdellattif, M. Saravanan, A.A. Chaturgoon, One-step synthesis of picolinohydrazides from fusaric acid: DFT structural characterization and molecular inhibitory studies on metastatic tumor-derived exosomal and non-exosomal proteins, *Journal of Molecular Structure* **2022**, *1255*, 132442 [DOI: 10.1016/j.molstruc.2022.132442; Impact Factor: **3.8**].
 28. K.B. Ilango, S. Gowthaman, K.I. Seramaan, K. Chidambaram, M.F. Bayan, M. Rahamathulla, **C. Balakumar**, Mucilage of *Coccinia grandis* as an efficient natural polymer-based pharmaceutical excipient, *Polymers* **2022**, *14*, 215 [DOI: 10.3390/polym14010215; Impact Factor: **5.0**].
 29. S. Karunanidhi, **B. Chandrasekaran**, R. Karpoormath, H. Patel, F. Kayamba, S.R. Merugu, V. Kumar, S. Dhawan, B. Kushwaha, M.C. Mahlalela, Novel thiomorpholine tethered isatin hydrazones as potential inhibitors of resistant *Mycobacterium tuberculosis*, *Bioorganic Chemistry* **2021**, *115*, 105133 [DOI: 10.1016/j.bioorg.2021.105133; Impact Factor: **5.1**].
 30. M. Sankar, B. Ramachandran, B. Pandi, N. Mutharasappan, V. Ramasamy, P.G. Prabu, G. Shanmugaraj, Y. Wang, B. Muniyandi, S. Rathinasamy, **B. Chandrasekaran***, M.F. Bayan, J. Jeyaraman, G.P. Halliah, S.K. Ebenezer, In silico screening of natural phytoconstituents towards identification of potential lead compounds to treat COVID-19, *Frontiers in Molecular Biosciences* **2021**, *8*, 637122 [DOI: 10.3389/fmolb.2021.637122; Impact Factor: **5.0**].
 31. S. Mahmud, G.K. Paul, S. Biswas, S. Afrose, M.A. Mita, M.R. Hasan, M.S.S. Shimu, A. Hossain, M.M. Promi, F.K. Ema, K. Chidambaram, **B. Chandrasekaran**, A.M. Alqahtani, T.B. Emran, M.A. Saleh, Prospective role of peptide-based antiviral therapy against the main protease of SARS-CoV-2, *Frontiers in Molecular Biosciences* **2021**, *8*, 628585 [DOI: 10.3389/fmolb.2021.628585; Impact Factor: **5.0**].
 32. R. Bezbaruah, P. Borah, B.B. Kakoti, N. Al-Shar'I, **B. Chandrasekaran***, D.M.M. Jaradat, M.A. Al-Zeer, S. Abu-Romman, Developmental landscape of potential vaccine candidates based on viral

- vector for prophylaxis of COVID-19, *Frontiers in Molecular Biosciences* **2021**, 8, 635337 [DOI: 10.3389/fmolb.2021.635337; Impact Factor: **5.0**].
33. P. Borah, P.K. Deb, N. Al-Shar'I, L.A. Dahabiyeh, K.N. Venugopala, V. Singh, P. Shinu, S. Hussain, S. Deka, **B. Chandrasekaran**, D.M.M. Jaradat, Perspectives on RNA vaccine candidates for COVID-19, *Frontiers in Molecular Biosciences* **2021**, 8, 635245 [DOI: 10.3389/fmolb.2021.635245; Impact Factor: **5.0**].
34. K. Vivekanandhan, P. Shanmugam, H. Barabadi, V. Arumugam, D.D. Raj, M. Sivasubramanian, S. Ramasamy, K. Anand, P. Boomi, **B. Chandrasekaran**, S. Arokiyaraj, M. Saravanan, Emerging Therapeutic Approaches to Combat COVID-19: Present status and future perspectives, *Frontiers in Molecular Biosciences* **2021**, 8, 604447 [DOI: 10.3389/fmolb.2021.604447; Impact Factor: **5.0**].
35. A.M. Alqahtani, K. Chidambaram, A. Pino-Figueroa, **B. Chandrasekaran**, P. Dhanaraj, K. Venkatesan, Curcumin-Celecoxib: a synergistic and rationale combination chemotherapy for breast cancer, *European Review for Medical and Pharmacological Sciences* **2021**, 25, 1916-1927 [DOI: 10.26355/eurrev_202102_25086; Impact Factor: **3.3**].
36. P. Borah, P.K. Deb, **B. Chandrasekaran**, M. Goyal, M. Bansal, S. Hussain, P. Shinu, K.N. Venugopala, N.A. Al-Shar'I, S. Deka, V. Singh, Neurological consequences of SARS-CoV-2 infection and concurrence of treatment-induced neuropsychiatric adverse events in COVID-19 patients: Navigating the uncharted, *Frontiers in Molecular Biosciences* **2021**, 8, 627723 [DOI: 10.3389/fmolb.2021.627723; Impact Factor: **5.0**].
37. A. Krishnan, F.I. Khan, T. Singh, P. Elumalai, alani, **C. Balakumar**, D. Premnath, D. Lai, A.A. Chuturgoon, M. Saravanan, Green synthesis, experimental and theoretical studies to discover novel binders of exosomal tetraspanin CD81 protein. *ACS Omega* **2020**, 5, 17973–17982 [DOI: 10.1021/acsomega.0c01166; Impact Factor: **4.1**]. [CAS, a division of the **American Chemical Society**, has identified novel compounds from this published research, resulting in a unique CAS Registry Number® being added to the CAS Content Collection™, received CAS REGISTRY® Innovators Program certificate for this paper].
38. A.A. Bilal, O.M. Haifa'a, **B. Chandrasekaran**, R. Amro, Herbal medication for the management of diabetes mellitus: A review, *Current Traditional Medicine* **2020**, 6, 332-350 [DOI: 10.2174/2215083805666190820115332; Impact Factor: **0.6**].
39. M.S. Shaikh, **B. Chandrasekaran**, M.B. Palkar, A.M. Kanhed, A. Kajee, K.P. Mlisana, P. Singh, M. Ghai, M.C. Mahlalela, R. Karpoormath, Synthesis and biological evaluation of novel carbazole hybrids as promising antimicrobial agents, *Chemistry and Biodiversity*, **2020**, 17, e1900550 [DOI: 10.1002/cbdv.201900550; Impact Factor: **2.9**].
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Editor-Books and Journals: 06

1. A book titled, "**Handbook on Nano-biomaterials for therapeutic and diagnostic applications**" for the prestigious **Publisher-Elsevier**. Editors: K. Anand, M. Saravanan, **Balakumar**

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2. A book titled, “**Computation in bioinformatics and its multidisciplinary applications**” for the prestigious **Wiley-Scrivener Publishing House**. Editors: S. Balamurugan, K. Anand, D. Goyal, **Balakumar Chandrasekaran, P. Boomi. 2021,** (ISBN: 9781119654711).
 3. A book titled, “**Small molecules and peptide-based candidates as therapeutics and vaccines for COVID-19 pandemic**” for the Journal **Frontiers in Molecular Biosciences**, Editors: Dasan Jaradat, Munir Ali Mohammad, **Balakumar Chandrasekaran, Saeid Abu-Romman (2021).**
 4. A Journal issue titled, “**Pharmacological and biochemical perspectives of kinase inhibitors in cancer and COVID-19 therapeutics-Volume I**” for the Journal **Frontiers in Pharmacology** [Impact Factor: **4.225**]. Editors: **Balakumar Chandrasekaran, Muthupandian Saravanan (2022).**
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 6. A book titled, “**Polymers in Functional Foods and Drugs: Chemistry and Essential Applications**” for the prestigious **Wiley-Scrivener Publishing House**. Editors: **Balakumar Chandrasekaran** and Mohammad F. Bayan, **2024** (in process).

Guidance of Master’s Projects: 14

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3. Mr. T. Lingaraj, Analytical method development and validation for the quantitative estimation of dorzolamide hydrochloride in ophthalmic solution form by RP-HPLC. Karpagam University (2012) India.
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7. Mr. Mohammed J. Abunuwar, Synthesis of novel biologically active heterocyclic compounds. Al-Balqa Applied University (2020), Jordan.
8. Mr. Mohammed J. Abunuwar, Synthesis of novel biologically active heterocyclic compounds. Al-Balqa Applied University (2020), Jordan.
9. Km. Hema Singh, Formulation and evaluation of dosage form for management of kidney stones. ITM University-Gwalior (2022) India.
10. Mr. Prashant Sharma, Entrapment of enzyme in gelatin gel (pepsin). ITM University-Gwalior (2022) India.
11. Mr. Rajveer Singh Rajput, Formulation and in vitro evaluation of Divalproex sodium bilayered tablets. ITM University-Gwalior (2022) India.
12. Mr. Ranjit Singh Rajput, Formulation and evaluation or optimization of oxcarbazepine liquisolid compacts. ITM University-Gwalior (2022) India.
13. Mr. Rishiraj Saxena, Formulation development and evaluation of Midazolam injection BP (1 mg/ml). ITM University-Gwalior (2022) India.
14. Mr. Hammad Mahmood, Formulation and evaluation of Telmisartan fast dissolving tablets. ITM University-Gwalior (2022) India.

Research Grants and Projects: 08

1. Computer-aided Design, synthesis, anticancer evaluation, and formulations of new thiophene-fused heterocycles, funding from Philadelphia University, Jordan (2023-ongoing) [Amount of Grant: 6,300 USD].
2. Synthesis and evaluation of novel cyclin-dependent kinase (CDK) inhibitors as potential anticancer agents. Research project funding from Philadelphia University-Jordan for 2 years (from April 2018 to March 2020) [Amount of Grant: 14,000 USD].
3. Synthesis of novel biologically active heterocyclic compounds (Partial funding from Al-Balqa Applied University-Jordan) for 2 years (from April-2019 to March 2021) [Amount of Grant: 6000 USD].
4. Design, synthesis, and evaluation of novel thiadiazoline-thiazolone hybrids as kinase inhibitors (funding from College of Health Sciences, UKZN, South Africa) for 2 years (from April-2015 to December 2016) [Amount of Grant: 2500 USD].
5. Design, synthesis, and evaluation of fluorinated pyrimidines as kinesin spindle protein inhibitors (Post-Doctoral Research – completed with research funding from National Research Foundation, Department of Science and Technology, South Africa and College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa) for 3 years (from April-2015 to March 2017) [Amount of Grant: 54,000 USD].

6. Design, synthesis and evaluation of new fluorinated hetero-fused pyrimidine derivatives as adenosine receptor antagonists (PhD project-completed with Senior Research Fellowship funding from University Grants Commission (UGC), New Delhi, India (SRF-UGC) (2007-2011).
7. Design, synthesis and evaluation of pyrimidines as potential antifungal agents (M. Pharm Project-completed with research funding from All India Council for Technical Education (AICTE-Fellowship), New Delhi, India (2004-2005).
8. Development of transdermal drug delivery systems (B. Pharm Project- completed with funded internally by RVS College for The TN Dr. MGR Medical University-Chennai, India (2001-2002).

International Collaborative Projects/Grants

1. International Collaborative Research Grant as one of the investigators in the project entitled “Mechanistic insight into the immunomodulatory and antiviral potential of Bodinioside: plant-derived immunostimulant from an endangered medicinal herb of Asir region, Saudi Arabia”. Project Number: RGP.2/52/43 and the period from April 2022 to March 2023 funded by KCU-KSA.
2. Co-Principal Investigator in a project entitled “Formulation and Evaluation of Medicated Sanitary Pads- An Appreciation towards Women’s Reproductive Health under **BIG** scheme of BIRAC (In process) in **India**.
3. Going Global Partnerships Exploratory Grant from British Council-UK for ITM University-India and **De Montfort University-UK**. The project period is from 11th December 2021 to 01 August 2022.

Invited lectures/talks delivered

1. Delivered a lecture titled, “Computer-aided Drug Design (CADD) Approaches for New Era of Medication” in the **International Conference Webinar “Biomaterials on Healthcare Application”** organized by Karunya Institute of Technology and Sciences (Deemed to be University) Coimbatore, India on 30th May-2020.
2. Delivered a lecture titled, “Computational tools in medicinal chemistry: Concepts and applications” in the **International Virtual Learning Series** organized by Arulmigu Kalasalingam College of Pharmacy, Tamilnadu, India on 11th August 2020.
3. Delivered a lecture titled, ‘Computer-aided drug design (CADD) Approaches for New Era of Medication’ for **AICTE Sponsored Online Faculty Development Program (FDP)**, Roland Institute of Pharmaceutical Sciences, Berhampur, Odisha, India on 18th Feb-2021.
4. Delivered a lecture titled, ‘Artificial intelligence in Drug Development: Recent trends and Future Perspective’ for **AICTE ATAL Academy sponsored Online Faculty Development Program**

(FDP), Roland Institute of Pharmaceutical Sciences, Berhampur, Odisha, India on 5th July-2021.

5. Delivered a lecture titled, 'Artificial intelligence in Drug Design and Discovery' for **DBT sponsored Online Popular Lecture Series**, V.V. Vanniaperumal College for Women, Tamilnadu, India on 5th March 2022.
6. Delivered a lecture titled, "Artificial Intelligence in Drug Design and Synthesis" in the 1st International Conference of the Faculty of Sciences & Faculty of Pharmacy & The 17th Jordanian Chemistry Conference (JCC17) "Prospects for Chemical and Pharmaceutical Industries" (ICPCPI) during 15 – 16 Nov-2022 at Isra University, Amman, Jordan.
7. Delivered a lecture on "Artificial Intelligence in Design and Synthesis of Drugs" on one-day seminar conducted by Shree Venkateshwara College of Paramedical Sciences-College of Pharmacy, India on 9th August 2023.
8. Delivered oral presentation titled, "Bridging academia and industry: Effective networking techniques" organized by the University of Cyberjaya, Malaysia on 4th September 2024.
9. Delivered oral presentation titled, "Computational design of a novel inhibitor against COVID" in the Second AAU International Conference on Pharmacy and Biomedical Sciences organized by the Al-Ain University, Abu Dhabi, UAE on 22-23rd January 2025.

Scientific Presentations at conferences/seminars

1. Chaired a special scientific session for the '4th International Conference on Computing and Communication Networks (ICCCNet-2024)' organized by The Manchester Metropolitan University, Manchester, United Kingdom (UK) through hybrid mode on 18th October 2024.
2. Delivered oral presentation titled, "Bridging academia and industry: Effective networking techniques" organized by the University of Cyberjaya, Malaysia on 4th September 2024.
3. Delivered oral presentation titled, "Polymeric-Based Formulation as Smart Drug Delivery System" in the e-conference named 'Polymers e-con2022' organized by Research catalyst.
4. Poster presentation on 'In Vitro Evaluation of Smart Pellets as Intelligent Drug Delivery Systems." Proceedings of the 1st International Conference of the Faculty of Sciences & Faculty of Pharmacy & The 17th Jordanian Chemistry Conference (JCC17) "Prospects for Chemical and Pharmaceutical Industries" (ICPCPI) during 15 – 16 Nov-2022 at Isra University, Amman, Jordan.
5. Delivered oral presentation on the research work entitled, 'Ligand- and structure-based in silico approaches to identify novel kinesin spindle protein (KSP) inhibitors as potential anticancer agents' in 'The First International Conference of the Faculty of Pharmacy, **Mutah University**, Jordan held on April 18th-19th **2018**, The Dead Sea, Jordan.
6. Delivered oral presentation on the research 'Ligand- and structure-based in silico approaches to identify novel kinesin spindle protein (KSP) inhibitors as potential anticancer agents' for College of

- Health Sciences (CHS-UKZN) Research Symposium during 5-6th Oct-**2017**, Durban, South Africa.
7. Poster Presentation on 'Ligand- and structure-based in silico approaches to identify novel kinesin spindle protein (KSP) inhibitors as potential anticancer agents' in the CHPC National Meeting-**2016** (Mon 5th Dec - Fri 9th Dec **2016**), East London, South Africa.
 8. Delivered oral presentation on the group research work titled, "Novel rhodanine hybrids as promising antimicrobial agents: Design, synthesis, biological evaluation and docking studies" for CHS-UKZN Research Symposium during 8-9th Sep-**2016**, Durban, South Africa.
 9. Poster Presentation on 'Design, synthesis and evaluation of new fused pyrimidines as Dihydrofolatereductase (DHFR) inhibitors' 35th Annual Conference of Environmental Mutagen Society of India (EMSI) and International Symposium on "Mutagens Genetic Diversity for Health and Agriculture" held at **Panjab University**, Chandigarh, India during 12th to 14th March, **2010**
 10. Poster Presentation on "Design, synthesis and evaluation of some novel hetero-fused pyrimidines as possible A₃ adenosine receptor antagonists". Scientific Sessions, Pharmaceutical Chemistry Division, Indian Society of Chemists and Biologists (ISCB) - 14th ISCB International Conference held at **Central Drug Research Institute** (CDRI), Lucknow, India during 15-18th January, **2010**.
 11. Poster Presentation on "*In silico* (docking) evaluation of some novel fused-pyrimidine derivatives on different models of A₃ adenosine receptor: A comparative study". Presented in Scientific Sessions, Pharmaceutical Chemistry Division, Association of Pharmaceutical Teachers of India (APTI) - **14th Annual National Convention** held at **Jodhpur**, Rajasthan, India (Abstract No. PC-14) during 3-4 October, **2009**.
 12. Poster Presentation on 'Molecular fingerprint: a novel approach in drug design to synthesize drug-like molecules for chemotherapy of cancer' Presented in Scientific Sessions of Chandigarh Science Congress (**CHASCON**), 14-15 March **2008**, **Panjab University**, Chandigarh, India.

Workshops / Seminars Participated

1. Participated in '**The Eleventh Conference on Scientific Research in Jordan**' by Faculty of Pharmacy, Al-Ahliya Amman University, Jordan on 11th Nov 2023.
2. Participated in the joint scientific day of the faculty of Allied Medical Sciences and Faculty of Pharmacy-Philadelphia University "Food and Drug Security: Challenges and Opportunities" on 16th May 2023 at Philadelphia University, Jordan.
3. Organized an awareness day in Utopia International School and Kindergarten, Al-Salt, Jordan on 19th Nov 2023.
4. Participated in the 'Scientific Day-2023' at Philadelphia University on 4th May-2023.
5. Participated in the Webinar on '**NEP Implementation with special reference to Multiple Entry and**

- Exit'** organized by UGC-Human Resource Development Centre, Devi Ahilya Vishwavidyalaya-Indore, India on 24th June 2022.
6. Participated in the **Intellectual Property Awareness/Training Program** under National Intellectual Property Awareness Mission organized by Intellectual Property Office and MoE's Innovation Cell, India on 26th April-2022.
 7. Participated in the **Intellectual Property Awareness/Training Program** under National Intellectual Property Awareness Mission organized by Intellectual Property Office, India on 5th April-2022.
 8. Participated in the **International Conference Webinar** "Post COVID-19: Science and Technology" organized by SRM university, India on 29th May-2020.
 9. Participated One Day Workshop '**Training on Processing of NMR raw data using Topspin**' organized by **Jordanian Chemical Society**, Amman, on 29th Feb-2020.
 10. Participated in '**Jordanian Chemistry Conference-2019**' organized by Department of Chemistry, Faculty of Science, **The University of Jordan**, Amman on 10th October, **2019**.
 11. Participated Centre for High performance Computing (CHPC) and University of KwaZulu-Natal (UKZN) organized **AMBER workshop** during January 25-28, **2016** held at UKZN, Westville campus, Durban, South Africa.
 12. Participated in '**National Level Workshop on 'Interpretation of spectral data and identification of phytoconstituents**' organized by Dept of Chemistry, Karpagam University, Coimbatore, Tamilnadu, India during 24-25th October, **2013**.
 13. Participated in '**National Level Conference on 'Emerging Trends in Herbal Research and Cancer Therapy**' organized by KMCH College of Pharmacy, Coimbatore on 26th June **2012**.
 14. Participated in Staff Development Program on '**Validation of Analytical Methods and Procedures**' organized by KMCH College of Pharmacy, Coimbatore during 5th-18th June **2012**.
 15. Participated in '**National Seminar on Advances in Traditional Drug Discovery and Clinical Drug Evaluation**' organized by RVS College of Pharmaceutical Sciences, Coimbatore during 11th-12th July **2011**.
 16. Participated in '**National Seminar on Intellectual Property Rights**' organized by Panjab University, Chandigarh on 30th March **2010**.
 17. Participated in "**National Seminar on Translational Research in Molecular Oncology**", Panjab University, Chandigarh on 8th December **2008**.
 18. Participated in the 78th annual sessions of '**The National Academy of Sciences, India**' at Panjab University, Chandigarh, 21-23 November **2008**.
 19. Participated in '**SERC Summer School in Modeling and Informatics in Drug Design**' in National Institute of Pharmaceutical Education and Research (NIPER), SAS Nagar, Mohali from **30 June to 18**

July 2008.

20. Participated in two days workshop on '**Pharma Healthcare Quality Concepts**' in Chandigarh, 3-4 June **2008**.
21. Participated in '**Seminar for Lectures and Senior Lecturers**' organized by Panjab University, Chandigarh on 29th March **2008**.
