

Placement Brochure Department of Bioresources, University of Kashmir

- Title: Bioresources for Human Welfare
- Subtitle: Producing highly talented and motivated Scientists, Academicians and *Entrepreneurs*
- School and Department- School of Biological Sciences and Department of Bioresources



Students of Bioresouces at National Park Dachigam-2016

Head's Desk-Message

As Head of the Department of Bioresources, I take this opportunity to introduce you to the Department of Bioresources at the University of Kashmir. The Department was sanctioned as a PG Programme in Bioresources in 2007 and recognized as a department in 2021 to impart Multidisciplinary teaching and, research in different areas of Modern Biology. In this pursuit, we maintain the interdisciplinary nature of the Department and have in-house expertise in Animal, Plant, and Microbial sciences.

Our Postgraduate teaching program is different from other Indian universities in that it incorporates synergy between Zoology, Botany, Microbiology, and Chemistry on equal footing with modern and classical biosciences and captures the entire spread of life science.

We have established well-equipped research laboratories. The Department maintains an animal cell and tissue culture laboratory facility along with fungal and bacterial cell culture facilities. Our vision is to develop

Bioresources as a unique multidisciplinary research and teaching center to impart and promote interdisciplinary research in applied life sciences which can change people's lives. To achieve this, we have developed and are developing research linkages with various institutes of national excellence and eminence. Besides, every member of the Department is involved in research activities and has got projects from the national funding agencies. I must confess that with the support and cooperation of all stakeholders within a short span of three years our department has achieved academic and research excellence and placed itself among one of the best departments of the university in terms of research output.

In a nutshell, Bioresources is a fascinating subject that deals with understanding and efficient sustainable use of various bioresources from microbes, plants, and animals. Here at the Department, we provide challenging research opportunities to the students to make them world-class interdisciplinary scientists and academicians. I encourage everyone to remain hardworking, persistent, innovative, and consolidative as we are dealing with the Bioresources of our Union Territory of J&K and our work has the potential to transform people's lives and pave the way for a better and sustainable future along with opportunities for the generation of self-employment.

• Brief overview of the department

Bioresources is an innovative program sanctioned by UGC in April 2007. The program was envisaged to establish a sustainable technology for the exploration, development, and commercialization of a spectrum of high-value compounds for human and animal health derived from a diversity of bioresources (plants, animals, and microbes) based on innovation.

Vision and Mission Statement

Vision and Mission is to explore the natural bioresources from plants, microbes, and animals for the betterment of human life. The program aims to develop a close and profitable interface between the academic institutions, research laboratories, and industries for the sustainable utilization of bioresources.

Our Achievements:

Dr. Manzoor Ahmad Mir:

- 1. Figured in Top 2% Global Scientists list published by Stanford University for 2023-24.
- 2. Awarded Best Scientific Research Paper Presentation (2nd Prize, Citation, Certificate and Cash) at Indian mmuno-oncology Society Conference (I-OSCONF-2024) at National Centre for Cell Science (NCCS) Pune, Maharashtra
- 3. Received Hackathon **3.0** Award 3rd Prize (Citation and certificate), by CSIR & AIC-IIM, Govt of India 2023.
- 4. Awarded Kashmir-Expo Award by JKST&IC Govt of J&K (UT) and DST Govt of India, for Breast Cancer Awareness dated:12-11-2022
- 5. Awarded Summer Research Fellowship (INSA-SRF) by Indian National Science academies IASc-INSA-NASI vide No. SRFP-LFT94 Dated: 02-04-2019
- 6. Selected as Associate Professor in Animal Sciences at School of Life sciences, Central University of Kashmir Ganderbal in 2019. Vide No. CUKmr/RCT/F.No.401/19/560. Dated: 23.07.2020
- 7. Awarded TARE- SERB Fellowship by Department of Science and Technology, Govt of India-2018-19, Vide No. **TAR/2018/001213** Dated: 05-11-2018
- Awarded Faculty Position (Associate Professor) in Immunology by College of Medicine, Department of Immunopathology, University of Shaqra, KSA for the year 2017 (1437) Vide No. 35114/53 Dated: 06-11-1437 (10th August 2016)
- 9. Awarded International Travel Grant by University Grants Commission (UGC) under 12th five-year plan to attend the 14th Annual Congress of International Drug Discovery Science and Technology Nanjing, China from 16th-19th November 2016 Vide No. F (Dep-MAK)

Res/KU/16, Dated: Oct -1st 2016.

- 10. Won *First Prize* in National Level Competition on '*Role of Media in National Integration*' at Academic Staff College, Aligarh Muslim University Aligarh in the year 2011.
- 11. Won First Prize in UGC sponsored National Seminar on Sustenance of quality in Higher Education Some Initiatives at Govt. College of Education Srinagar in the year 2011.
- 12. Topped the Assistant Professor Selection List in Zoology published by Jammu and Kashmir Public Service Commission on 30-10-2009.
- 13. Won the **FIRST PRIZE** in **Chandigarh Science Congress CHASCON-2008** at **Post Graduate Institute of Medical Education and Research** (PGIMER) and Punjab University Chandigarh in the year 2008.
- 14. Awarded Prestigious Senior **Research Fellowship SRF by CSIR Govt of India** in year 2006-2007.
- 15. Qualified Junior Research Fellow-National Educational Test (JRF-NET) conducted by UGC-CSIR Govt. of India in year 2005 under Roll 328164.

Dr Reiaz Ul Rehman:

- ✓ Bachelors (1996), Aligarh Muslim University (AMU), Aligarh, UP, INDIA, Department of Botany.
- ✓ Masters (1998), Jamia Hamdard (New Delhi, India), Department of Botany.
- ✓ Doctorate (2003), Jamia Hamdard (New Delhi, India), Centre for Biotechnology.
- ✓ 2002, Best Presentation, National Seminar on recent Research Trends in Life Sciences. University of Kashmir, Srinagar-190006.
- ✓ 2002, Senior Research Fellowship, Sponsored by Technology Mission on oil seeds, pulses and Maize (CSIR) Ministry of Agriculture INDIA
- ✓ 2001, Junior Research Fellow, Hamdard National Foundation, Hamdard University, New Delhi-110 062.
- ✓ 2003 Postdoctoral Research Associate, University of Louisville, Kentucky, USA.
- ✓ 2008, Marie Curie Postdoctoral Research Associate, University of Salento, Lecce, Italy.
- ✓ 2011, Marie Curie International Incoming Fellowship (IIF), University of Lisbon, Lisbon, Portugal.
- ✓ National Best Researcher Award in Plant Sciences 2021 IMRF Institute of Higher Education and Research, Vijaywada, India
- ✓ Prof. YSRK Sharma Memorial Award 2023 Fellow Award Society for Plant Research International India
- ✓ DST Travel grant to attend 12th International symposium on Buckwheat". 21-25 Aug. Slovenia 2013.

Dr. Peer Abdul Haseeb Shah:

→Received Gold Medal (MSc. Biotechnology), from Kashmir University, J&K, 2008

→Qualified DBT-JRF Examination, in the years 2008 and 2009

→Qualified CSIR-NET-JRF, Life Sciences, Dec. 2008

→ Was awarded CSIR Research Associateship vide file number No.212232/2K14/1, June 2015.

→ Received DSK-PDF Award from UGC vide File no. F.4-2/2006(BSR)/BL/1415/0126, Jan 2016

→ Was appointed as **Young Ambassador to India** by the American Society for Microbiology for the year 2020-2022

→Received Bill & Melinda Gates Foundation Travel Award for Scientists from Low and Low-Middle

Income Countries covering registration expenses to attend World Microbe Forum, June 20-24, 2021, a joint digital between ASM Microbe 2021 and FEMS Congress 2021.

→*Received international Travel awards from ASM, EMBO, FEBS, etc. to attend different international conferences abroad*

→*Received international Travel awards from* SERB-DST, CSIR, DBT, INSA, ICMR, JNU etc. to attend different international conferences abroad

→*Received* CSIR-Senior Research Associate Award (CSIR-Scientists Pool Scheme) vide File No. B-12797 in Life Sciences, June 2021

 \rightarrow Was awarded European Molecular Biology Organization (EMBO) Travel and registration fee waiver grants to attend the EMBO Workshop "Membrane transporters as essential elements of cellular function and homeostasis" 23 – 27 August 2022 at Chania, Greece

→Was awarded the IndiaBioscience Outreach grant (4th IOG Grant) as Lead applicant by IndiaBioscience for the year 2023-24.

→Secured "Second Position" in Oral Presentation competition held during "Regional Young Investigators Meeting" held at the University of Kashmir, Srinagar J&K from 19-21, Sep. 2023.

<u>Kiesar Sideeq Bhat (Dr.):</u>

→*Received MSc. Organic Chemistry, from Pune University, Maharashtra, 2013.*

→Research Assistant, Department of Chemistry, Pune University, Maharashtra 2014.

→ Brain Korea-21 full fellowship award for PhD program at Chonbuk National University, South Korea, March 2015-August 2019.

→ Postdoc Research Fellow, Chonbuk National University, South Korea, September-October 2019.

→ Postdoc Research Fellow, Nanyang Technological University, Singapore, 2020-2021.

→ Ramanujan Fellowship/grant award, University of Kashmir, Srinagar, 2021-2026.

→ Research and Scientific staff at Singapore-MIT Alliance for Research and Technology (Research centre of MIT in Singapore), September 2022-December 2023.

→ Patents Awards:

- 1. Silver ink composition and methods for preparing the same (은 잉크 조성물 및 이의 제조방법) Korea Patent number: 10-2077690. Registration date: 2020.2.10. Inventors: Yoon-Bong Hahn, **Kiesar Sideeg Bhat**, Jinyoung Yoo. Also handed over to a company for commercialization.
- 2. Plastically Deformable 3D Objects with Heat Channels (PCT patent application number PCT/US2021/018783), International Publication Number WO 2022/177571 A1. Inventors: SONG Juha; **Kiesar Sideeq Bhat**; SHI Qian; Muhammad Aidil BIN JUHARI; Aravind Kumar JAYASANKAR; HAN Rui Yuan; Rafael BALLAGAS; Michael John REGAN.

Alumni

• Success stories of distinguished/illustrious alumni from the department/faculty

<i>S</i> .	Name of Alumni	Placement
No.		
1	Dr Tanveer Bilal	Deptt. of Higher Education
2	Dr Bisma Malik	Deptt. of Higher Education
3	Miss Mehak Majeed	Deptt. of Higher Education
4	Dr. Fayaz Ahmad	Deptt. of Higher Education

5	Dr. Basharat A Bhat	Deptt. of Higher Education
6	Dr. Umer Mehraj	PDF, Duke University Durham, NC 27708, USA
	Dr Sajad Ahmad	PDF, Hackensack Medidian Health School of Medicine,
7	Padder	Nutley, USA
8	Mr. Irfan Baba	Police official in J&K Police
9	Ms. Rubeena Ashraf	Teacher in deptt. of school education
	Mr. Bashir Ahmad	Teacher in deptt. of school education
10	Sheikh	
11	Ms. Rumaisa Beigh	Teacher in deptt. of school education
12	Ms. Kounsar un Nisa	Teacher in deptt. of school education
13	Miss. Sadaqat Farooq	DST-INSPIRE Fellow at IIIM Jammu; PDF, USA
14	Ms. Qaiser-ul- nisa	Teacher in deptt. of school education
15	Miss Mariya Mir	Lab assistant at higher secondary
16	Mr. Mohd Umer Aftab	Employed in J&K Bank
17	Mr. Syed Sami Kozger	Entrepreneur
18	Mr. Suhail Ahmad	Entrepreneur
19	Miss Misbah	Employee in J&KBank
20	Mr. Zahoor	Officer in J&K Police
21	Miss Aliya Riyaz	Teacher in deptt. of school education
22	Miss Irfana	Lab. Assistant, Kashmir University
23	Mrs Nelofar	Teacher in deptt. of school education
24	Mr Parvaiz Ahmad	Bank Executive at J&K Bank
25	Dr. Anjum	Research Associate Deptt. Of Endocrinology, SKIMS

- Alumna testimonials
- I am eternally grateful for the education and training I received at University of Kashmir. During my research years earning a Ph.D. at the Department of Bioresources, School of Biological Sciences, I had the privilege of learning from some of the finest scientists – and hardworking people - I have ever met. The faculty at the Department especially my advisor Dr. Manzoor A Mir, ensured that I felt nurtured, cherished and challenged. I owe my presentday career to what I learned at the Department of Bioresources. Umar Mehraj, PhD, 2022.

Why Recruit Us?

- Student's skill set, strengths and achievements Pass out students from the department develop entrepreneur mindset and have skills in Bee Keeping, Sericulture, Aqua culture, Dairy farming, Mushroom cultivation, poultry rearing, medicinal plant cultivation etc. Pass outs are groomed to start self-employment business
- Scope School and Higher Education sector, Health sector, Pharmaceutical Industry, Nutraceutical Industry, Applied scientific research sector.
- Roles we play Professors, Teachers, Researchers, Entrepreneurs, Drug inspectors, Fisheries inspectors, Quality control officers, Forensic experts

• Broad Curriculum:

<i>S</i> .	Programs	Degree titles	Specializations
No.			
1	M.sc.	Masters in	Animal Resources, Plant Resources, Microbial
		Bioresources	Resources
2	M.Phil./I-	Doctorate in	Cancer Biology, Immunology, Drug discovery from
	PhD/Ph.D	Bioresources	medicinal Plants, Drug designing and computational
			biology, Plant Physiology, Plant Biotechnology,
			Microbial Biotechnology, Microbial Pathogenesis

Faculty Expertise

Dr Manzoor Ahmad Mir holds master's degree in Life Sciences with gold medal and Ph. D in Immunology (Life Sciences) from Jawaharlal Nehru University New Delhi. He has qualified the CSIR-JRF-NET exam three times and worked as JRF at CSIR-IMTECH from 2004 to 2006 and as SRF from 2006-2009. He started his teaching Job as Assistant Professor from 2009 at the J&K Higher Education Department and worked as Nodal officer and coordinator of Kupwara University Campus from 2011 to 2013. Dr Manzoor started working as Assistant professor in the Department of Bioresources from 2012 and is heading the Department since 2019. Dr Manzoor has an outstanding teaching and research experience of 15 years and recently his name has figured in top 2% globally recognized Scientists of the World for the year 2023 published by Stanford University. He has published more than 50 high impact scientific research papers in reputed peer reviewed international Journals with an H-index of 23, i-10 index of 54, cumulative impact factor of 314 and more than 2000 citations. He has also published 15 international Books with Web of Science publishers like Elsevier, Springer-Nature, Academic Press, NOVA Biomedical and OMICS international. Besides he has 56 book chapters to his credit with the publishers of international repute. Dr Manzoor has developed more than 160 MOOC modules of 4 quadrant in Immunology, endocrinology and human genetics for UGC-SWAYAM Ministry of Education, Govt of India. He has been awarded Summer Research Fellowship by Indian National Science Academies for year 2019, Teacher Associate for Research Excellence award by the SERB-DST Govt. of India in 2020. Dr. Manzoor has attended many international conferences at USA, UK, Kuwait, China, UAE, Scotland and Saudi Arabia. His basic research interests include molecular immunology and Cancer Biology especially Drug repurposing for breast cancer. Dr. Manzoor is on the editorial board of some prestigious journals and is member of many scientific organizations and societies like American association of Cancer Research, Fellow of Royal Society of Biology, American Society of Oncology, American Society of Clinical Oncology, European Medical Oncology society, International Immunology Association, Indian Association of Immunology, CHASCON, Indian National Science Association, and Immuno-oncology society of India.

Dr Manzoor has Research Expertise in Cancer Biology and Immunology

He has an experience of working and handling virulent Mycobacteria (M. tuberculosis H37Rv) in BSL-3, culture and maintenance of M. tuberculosis H37Rv, M. tuberculosis H37Ra and M. microti in broth base (7H9 Broth), agar base (7H10 Agar with or without OADC or ADC) and on Lowenstein-Jensen slants. He has an expertise of maintaining and handling of different mammalian cell lines (EL-4, WEHI-279, THP-1, HuT-78, JM-1, J774A.1, Jurkat, COS-7 etc.), experience of handling BALB/c, C57BL/6, C3He mice for isolation of peritoneal macrophages, splenocytes, Dendritic cells etc. Purification of naïve T cells and B cells by density gradient centrifugation, purification of dendritic cells from spleen and bone marrow, preparation of Baby rabbit complement, purification of monoclonal antibody from culture supernatant by using sepharose protein A and G columns and other cellular immunological techniques. Dr Manzoor is also conservant with the instruments like Flowcytometer, Fluorescence microscope, Phosphor-Imager, Confocal microscope, Gel-doc, beta counter, Inverted microscope, Flourimeter and Luminometer, ELISA reader, Spectrophotometer, Sonicator, Centrifuges (RC5C, RC3C, table-top) etc. He has also the expertise in acquisition and analysis of data related to Immuno-fluorescence staining of cell surface molecules (Two colour as well as Multicolour) and intracellular staining of cytokines, expertise in Cell Quest and FACS PRO-Software's of FACS acquisition and Analysis, Detection of apoptosis by PI staining.

Dr. Reiaz Ul Rehman is a Sr.Assistant Professor in the Department of Bioresources, School of Biological Sciences, University of Kashmir, Srinagar, India. He is actively involved in teaching Master's and Integrated PhD students and has guided several M.Sc., M.Phil and PhD theses. He is the recipient of several fellowships at both national and international levels, including the Marie Curie IIF award (MC-IIF-FP7-219339). His research interests include the agronomical, physiological and biochemical aspects of and mineral nutrition in underutilized crops. He has to his credit three published books, 60 research articles in various journals and 40 book chapters in several edited volumes. Dr. Reiaz is a member of various internal bodies viz American Society of Plant Biologists (ASPB), Member International Society for Development and Sustainability (ISDS), Member Institute of Scholars (InSc), Society for Plant Research (SPR) and Member Applied Microbiology International. Besides he serves as an active reviewer of many journals.

Dr. Peer Abdul Haseeb Shah, DST INSPIRE Faculty earned his Ph.D. and post-doctorate from the School of Life Sciences, Jawaharlal Nehru University, New Delhi. His research interests are focused mainly on understanding the basic biology, drug resistance, and regulation of membrane protein levels by various post-translational events in human pathogenic fungi, mostly belonging to the genus Candida. His group works towards understanding the antifungal properties of new or modified possible drug candidates. Dr. Shah's lab tries to understand the drug resistance mechanisms adopted by different clinical isolates of human pathogenic fungi. Besides research, he regularly teaches various courses to Master's level students at the University of Kashmir, Srinagar. Dr. Shah has published over 30 research and review articles in peer reviewed international journals of repute like ACS Pharmaceuticals, European Journal of Medicinal Chemistry, Biochemical Journal, Critical Reviews Microbiology, Scientific Reports, Journal of Molecular Biology, Fungal genetics and Biology, Antimicrobial agents and Chemotherapy, Journal of Applied Microbiology, Essays in Biochemistry, Microbiological Research, etc. Dr. Shah has also served as the American Society for Microbiology (ASM) Young Ambassador to India (2020-22), to advance the knowledge about microbial sciences locally. As a lead awardee he has also received prestigious 4th IndiaBioscience Outreach Grant Award (IOG) to take up science outreach activities in the area.

Kiesar Sideeq Bhat received his B.Sc. degree from University of Kashmir in 2009 and M.Sc. degree in Organic Chemistry from University of Pune, India in 2012. He pursued his phd between 2015 to 2019 to work on development of conductive electrodes and sensors for printable and flexible electrons in Professor Yoon-Bong Hahn's Laboratory (AMPL) at the Chonbuk National University, South Korea. Immediately after his PhD, he joined as a short term postdoctoral researcher to work on the fabrication of sensitive DNA based biosensors with Professor Sooman Lim at department of flexible and printed electronics, Chonbuk National University, South Korea. He then joined as postdoctoral research fellow between January 2020 to December 2021 to develop shape reconfigurable and recyclable 3D and 4D printed systems, Professor Juha Song's Laboratory (BFMLab) at Nanyang Technological University, Singapore. Currently, He is working as a Ramanujan Fellow (Equivalent of Scientist D or Assistant professor) at the Department of Bioresources, University of Kashmir, India. He also got the opportunity to work as a research and scientific staff from September 2022 to December 2023, at Singapore-MIT Alliance for Research and Technology (SMART), Singapore where he collaborated with team of scientist/biologists/engineers from MIT, USA and other industry partners to develop Magnetic Resonance Relaxometry CQA based tools for stem cell manufacturing. His research interests include broadly the synthesis of nanomaterials based inks for the fabrication of optoelectronics, printable & flexible electronics, development of sensor devices for biomedical sensing applications; Development of novel Magnetic Resonance Relaxometry (MRR) based cell phenotyping technology both in terms of instrumentation and scientific validation. So far, Dr Bhat has published over 25 research articles in highly reputed peer reviewed international journals such as, Chemical Engineering Journal, ACS Omega, Scientific Reports, npj Nature 2D materials and applications, Wiley Advanced healthcare Materials, Journal of Materials Chemistry C, Journal of Colloid and Interface Science, Nano-energy, RSC Advances etc and more to come soon accentuating to nanomaterials based low cost biomedical devices from different applications. Moreover, He has been awarded 2 patent during his PhD and Postdoc research time.

Research and Innovation

• Ongoing research projects,

Dr. Manzoor Ahmad Mir

<i>S</i> .	Title of the Project	Cost in	Duratio	Role as	Agency
No		Lakh	n	PI/ Co-	
				PI	
1	Targeting drug resistant cancer stem cells by combinational delivery of Paclitaxel and	10 Lacs	2 years	PI	JKST&IC Govt of J&K
	Quercetin/Zerumbone in breast cancer				
2	Elucidation of Molecular Basis of Drug and Multidrug Tuberculosis Resistance of Mycobacterium tuberculosis in Kashmir Valley	18 Lacs	3 years	PI	SERB-DST Govt of J&K

Dr. Reiaz Ul Rehman

Principal Investigator: Dr. Reiaz Ul Rehman; Project "Elucidating the Roles of Heat Shock Proteins and Selenium Transporters in Proso Millet" Sponsored by: Science and Engineering Research Board (SERB-DST) Govt of India, New Delhi Total Amount: 2948260. Project No. SUR/2022/002065.

Adil Rasool (Co-Mentor): Reiaz Ul Rehman; Mentor: Tanveer Ali Dar): ICMR Fellowship. Topic: Cholinesterase and glycation inhibition potential of Glycyrrhiza glabra and identification of bioactive molecules (s). Indian Council of Medical Research (ICMR: 45/06/2022/TRM/BMS). Grant Amount: 15 Lakh.

Ms Wasifa (Co-Mentor): Reiaz Ul Rehman; Mentor: Showket A. Ganai): ICMR Fellowship. Topic: Phytochemicals in modulating drug induced complications in type 2 diabetes. Indian Council of Medical Research (ICMR: 03/01/3(1)/Endo-fellowship/22-NCD-III). Grant Amount: 15 Lakh.

Dr. Peer Abdul Haseeb Shah

- 4th IndiaBioscience Outreach grant funded by IndiaBioscience entitled "Outreach and mentorship program for providing exposure to the underprivileged student community"
- Core Research grant (approx. 50 lakh) approved by SERB-DST for the period 2024-2027

Dr. Kiesar Sideeq Bhat

Development of sensors for biomedical applications (Under Ramanujan Fellowship Scheme)

Important publications

Dr. Manzoor Ahmad Mir

Author(s)	Title	Name of Journal	Volume	Page/Articl e No.	Year
Mehraj U, Mushtaq U, Manzoor A Mir, Wani NA.	Chemokines in triple- negative breast cancer heterogeneity: New challenges for clinical implications	Seminars in Cancer Biology (Elsevier) (Impact Factor-17.012)	86 (Pt 2)	769-783	2022
Burhan Ul Haq, Hina Qayoom, Shazia Sofi, Nusrat Jan, Aisha Shabir, M A Mir	Targeting p53 Misfolding Conundrum by Stabilizing Agents and their Analogues in Breast Cancer therapy: A comprehensive computational analysis	Frontiers in Pharmacology (Impact Factor-5.988)	14	1333447	2024
Shazia Sofi, Umar Mehra jNusrat Jan, Manzoor A Mir	Clinicopathological significance and expression pattern of Bcl2 in Breast Cancer: A comprehensive in silico and in vitro study	Saudi Journal of Biological Sciences, (Elsevier) (Impact Factor-4.052)	31	103916	2024
Nusrat J, Shazia S, Hina Q, Aisha S, Burhan Ul H, MA Mir	Metronomic Chemotherapy and Drug Repurposing: A paradigm Shift in Oncology	Heliyon (Cell Press) (Impact Factor- 3.776)			2024
Basharat Ahmad Bhat, Wajahat Rashid Mir, Manzoor A Mir*	Network pharmacology and experimental validation for deciphering the action mechanism of Fritillaria cirrhosa D. Don constituents in suppressing breast carcinoma	Journal of Biomolecular Structure and Dynamics (Taylor & Francis) (Impact Factor-5.235)	10	1-21	2023
Hina Qayoom, Burhan Ul Haq,., Manzoor A Mir*	Decoding the molecular mechanism of stypoldione against breast cancer through network pharmacology and experimental validation	Saudi Journal of Biological Sciences, (Elsevier) (Impact Factor-4.052)	30(12)	103848	2023
Hina Qayoom, Shazia Sofi & Manzoor A. Mir*	Targetingtumormicroenvironmentusinginfiltratinglymphocytesagainsttherapeuticsagainsttumorigenesis	Immunologic Research (Springer Link) (Impact Factor-4.423)	71	588-599	2023

Jan, N., Qayoom H, Manzoor A Mir*	Elucidation of Interleukin-19 as a therapeutic target for breast cancer by computational analysis and experimental validation.	Saudi Journal of Biological Sciences (Elsevier) (Impact Factor-4.052)	30(9)	103774	2023
Nusrat Jan, Shazi a Sofi, Manzoor A Mir*	Targeting breast cancer stem cells through retinoids: A new hope for treatment	Critical Reviews in Oncology/Haematology (Elsevier) (Impact Factor-6.625)	192	104156	2023
Mir, W. R, Manzoor A Mir*	Network pharmacology combined with molecular docking and in vitro verification reveals the therapeutic potential of Delphinium roylei munz constituents on breast carcinoma.	Frontiers in Pharmacology (Impact Factor-5.988)	14	1135898	2023
Qayoom, H., Alkhanani, M., Manzoor A Mir*	Mechanistic elucidation of Juglanthraquinone C targeting breast Cancer: A network Pharmacology-based investigation.	Saudi Journal of Biological Sciences (Elsevier) (Impact Factor-4.052)	30(7)	103705	2023
Qayoom, H., Alkhanani, Manzoor A Mir*	A network pharmacology-based investigation of brugine reveals its multi-target molecular mechanism against Breast Cancer	Medical Oncology (Springer-Nature) (Impact Factor-3.738)	40(7)	202	2023
Khalid Bashir Dar, Manzoor A Mir et. al.	Immunomodulatory Efficacy of Cousinia Thomsonii C.B. Clarke in Ameliorating iNOS, COX-2, PPAR-y, Rel-A, and CRP Expression and Molecular Docking Analysis	Journal of Ethnopharmacology (Elsevier) (Impact Factor-4.364)	300	115727	2023
M. Nadeem Lone, Shazia Gul, Manzoor A Mir*	Synthesis and Biological Evaluation of Novel Uracil Derivatives as Thymidylate Synthase Inhibitors	Applied Biochemistry and Biotechnology (Springer-Nature) (Impact Factor-3.094)	195(10)	6212-6231	2023
Aadil A. A, Manzoor A, Mir , Abdul H Shah*, Aijaz A. Dar*	Physicochemical and Anti-fungal Studies of the Pharmaceutical Co- crystal/Salt of Fluconazole	Molecular Pharmaceutics (ACS Publications) (Impact Factor-5.364)	20(7)	3471-3483	2023
Umar Mehraj, Irfan A Mir, Manzoor A Mir*	Adapalene and doxorubicin synergistically promote apoptosis of TNBC Cells by hyperactivation of the ERK1/2 pathway through ROS induction	Frontiers in Oncology (Impact Factor-6.244)	12	938052	2022
Umar Mehraj, Nissar A Wani, Manzoor A Mir*	Adapalene inhibits the growth of triple-negative breast cancer cells by S- phase arrest and potentiates the antitumor efficacy of GDC- 0941	Frontiers in Pharmacology (Impact Factor-5.988)	13	958443	2022
Hina Qayoon, Umar	<i>Expression patterns and therapeutic implications of CDK4</i>	Medical Oncology (Springer-Nature)	39(10)	158	2022

Mehrai Manzo	across multiple carcinomas: a	(Impact Factor-3.738)			
or A Mir*	molecular docking and MD	(
	simulation study				
Umar Mehrai	Expression Pattern and	Clinical Breast cancer	22(6)	567-578	2022
Pador	Prognostic Significance of	(Elsevier)	22(0)	507-570	2022
Alshehri Manz	Chamakings in Progst agreen Ar	(Lisevier) (Impact Easter 2 128)			
Alshenni, man z	Chemokines in Breast cancer. An	(<i>Impaci Factor</i> -3.128)			
oor A Mur	Integrated Bioinformatics				
	Analysis		00/17)	2025 2025	2022
Mehraj Umar,	Cryptolepine Targets TOP2A and	Anti-Cancer Agents in	22(17)	3025-3037	2022
Qayoom Hina,	Inhibits Tumor Cell Proliferation	Medicinal Chemistry			
Manzoor A Mir*	in Breast Cancer Cells - An in	(Impact Factor-2.473)			
	vitro and in silico Study				
Bhat BA, Mir	In vitro and in silico evaluation of	Journal of	291	115046	2022
WR, Manzoor A	antimicrobial properties of	Ethnopharmacology			
Mir*	Delphinium cashmerianum L., a	(Elsevier)			
	medicinal herb growing in	(Impact Factor-4.364)			
	Kashmir, India.	_			
Umar Mehraj,	Expression Pattern and	Cancer Biomarkers	34(3)	505-519	2022
Shazia sofi	Prognostic significance of CDKs	IOS-Press Netherlands			
Manzoor A Mir*	in Breast Cancer: An Integrated	(Impact Factor-3.828)			
	Bioinformatic Study.				
Wajahat R Mir.	Molecular docking analysis and	Scientific Reports	12	12547	2022
Rasharat A	evaluation of the antimicrobial	(Springer Nature)		12017	2022
Rhat Manzoor	properties of the constituents of	(Impact Factor-4 663)			
A Mir*	Geranium wallichianum D Don	(Impact Pactor -4.005)			
	or Sweet from Kashmir Himalaya				
Shazia Sofi Umar	Cyclin Dependent Kingses in	Medical Oncolom	30(6)	106	2022
Mahrai	Cycun-Dependent Kindses in Broast Canoar: Expression	(Springer Nature)	59(0)	100	2022
Manzoor A	Dreast Cuncer. Expression	(Springer Nature)			
Wanzoor A	Pallern and Inerapeutic	(<i>Impaci Factor</i> -3.738)			
		C. '	10	17649	2022
Suliman A.,	In silico investigations identified	Scientific Reports	12	1/048	2022
Manzoor A Mir	Butyl Xanalterate to competently	(Springer Nature)			
et. al.	target CK2a (CSNK2AI) for	(Impact Factor-4.663)			
	therapy of chronic lymphocytic				
	leukemia		20101	100	
Shazia Sofi, Umar	Targeting Cyclin-dependent	Medical Oncology	39(9)	133	2022
Mehraj,	kinase 1 (CDK1) in Cancer:	(Springer-Nature)			
Manzoor A	Molecular Docking and Dynamic	(Impact Factor-3.738)			
Mir*	Simulations of potential CDK1				
	Inhibitors				
Mehraj U, Aisha	Expression pattern and prognostic	Advances in Cancer	4	100037	2022
S, Manzoor A	significance of baculoviral	Biology- Metastasis			
Mir*	inhibitor of apoptosis repeat-	(Elsevier)			
	containing 5 (BIRC5) in breast	(Cite Score-1.8)			
	cancer: A comprehensive				
	analysis.				
Umar Yousuf.	Identification and analysis of	Medical Oncology	39	256	2022
Shazia Sofi.	dysregulated fatty acid	(Springer Nature)			
~~~;~,	metabolism genes in breast cancer	(Impact Factor-3.738)			

Manzoor A	subtypes				
Mohd Zahoor ul haq Shah, Manzoor A Mir et. al.	Gallic acid reverses ovarian disturbances in mice with Letrozole-Induced PCOS via modulating Adipo R1 expression	Toxicology Reports (Elsevier) ( <b>Impact Factor-3.952)</b>	9	1938-1949	2022
Mohd Zahoor ul Haq Shah,Vinoy Kumar Shrivastava, <b>Manzoor A Mir*</b>	Chlorogenic Acid Restores Ovarian Functions in Mice with Letrozole-Induced Polycystic Ovarian Syndrome Via Modulation of Adiponectin Receptor	Biomedicines ( <b>Impact Factor-4.757</b> )	11(3)	900	2023
Basharat Ahmad Bhat, Rakeeb A Mir , <b>Manzoor</b> A <b>Mir*</b>	Integrons in the development of antimicrobial resistance: critical review and perspectives	Frontiers in Microbiology ( <b>Impact Factor-6.064</b> )	14	1231938	2023
Hafsa Qadri, Abdul Haseeb*, <b>Manzoor A Mir</b>	Quinidine Drug Resistance transporter Knockout Candida cells modulate glucose transporter expression and accumulate metabolites leadingto enhanced azole drug resistance	Fungal Genetics and Biology (Elsevier) ( <b>Impact Factor-3.883)</b>	161	103713	2022
<i>Manzoor A Mir*,</i> Bilkees Mir, et. al.	Manipulation and exploitation of host immune system by pathogenic Mycobacterium tuberculosis for its advantage	Future Microbiology (Future Medicine) ( <b>Impact Factor-3.553)</b>	17	1171-1198	2022
Mohd Zahoor ul haq Shah* Vinoy kumar Shrivastva, Manzoor A Mir et. al.	Effect of quercetin on steroidogenesis and folliculogenesis in ovary of mice with experimentally-induced polycystic ovarian syndrome	Frontiers in Endocrinology ( <b>Impact Factor-5.234</b> )	14	1153289	2023
Basharat A Bhat, Abdullah Almilaibary, <b>Manzoor A</b> <b>Mir*</b>	Natural therapeutics in aid of treating Alzheimer's disease (AD): A green gateway towards ending the quest for treating neurological disorders	Frontiers in Neuroscience ( <b>Impact Factor-4.253</b> )	16	884345	2022
Basharat A Bhat, Wajahat R Mir,Bashir A Sheikh, Mustafa Al & Manzoor A Mir*	Metabolite fingerprinting of phytoconstituents from Fritillaria cirrhosa D. Donand molecular docking analysis of bioactive peonidin with microbial drug target proteins	Scientific Reports (Nature Springer) ( <b>Impact Factor-4.663</b> )	12(1)	7296	2022
Wajahat Rashid Mir, Basharat Ahmad Bhat, <b>Manzoor A</b> <b>Mir*</b>	Evaluation of the In Vitro Antimicrobial Activities of Delphinium roylei: An Insight from Molecular Docking and MD- Simulation Studies	Medicinal chemistry (Bentham Science) ( <b>Impact Factor-2.434</b> )	18(10)	1109-1121	2022
Mohd Zahoor ul haq	Role of diacerein on steroidogenesis and	Chemico-Biological Interactions (Elsevier)	377	110468	2023

Shah <b>Manzoor</b> <b>A Mir</b> et. al.	folliculogenesis related genes in ovary of letrozole-induced PCOS	(Impact Factor-5.192)			
	mice				
Mohd Zahoor ul	Metformin treatment ameliorates	Obesity Medicine	31	100392	2022
haq Shah, Vinoy S	endocrine- metabolic	(Elsevier)			
Manzoor A	disturbances in the letrozole-	(Cite Score-4.5)			
Mir*	induced PCOS mice model by				
	modulating adiponectin status				
Suliman A.	In silico investigations identified	Scientific Reports	12	17648	2022
Alsagaby, Danish	Butyl Xanalterate to competently	(Springer Nature)			
Iqbal,	target CK2a (CSNK2A1) for	(Impact Factor-4.663)			
Manzoor A Mir*	therapy of chronic lymphocytic				
	leukemia				
Hafsa Qadri,	Immunotherapies against human	Frontiers in Medicine	10	1135541	2023
Abdul Haseeb	bacterial and fungal infectious	(Impact Factor-3.978)			
Shah, Manzoor	diseases: A review				
		<u> </u>	22(14)	1704 1720	2022
Basnir A Sneikn,	Strategies employed to evade the	Current Pharmaceutical	23(14)	1/04-1/20	2022
Manzoon A Mir*	nosi immune response and ine	(Boutham Soience)			
	Muchaetanium tubeneulogis. In	(Deninum Science) (Impact Eastor 3 078)			
	Mycobucierium iuberculosis. In search of finding new targets	(Impact Factor-5.9/8)			
Rashir Ahmad	Antimicrobial resistance: new	Applied Microbiology	106(19	6427-6440	2022
Sheikh Basharat	insights and therapeutic	and Biotechnology	-20)	012/ 0110	2022
Ahmad Bhat &	implications	(Springer Nature)	20)		
Manzoor A Mir*		(Impact Factor-5.562)			
Bashir A. Sheikh,	Nano-Drug Delivery Systems:	Journal of Biomedical	17(12)	2298-2318	2021
Basharat A. Bhat,	Possible End to the Rising Threats	Nanotechnology			
Manzoor A	of Tuberculosis	American Scientific			
Mir *		Publishers			
		(Impact Factor-2.973)			
Hina Qayoom,	An insight into the cancer stem	Future Oncology	17(31)	4185-4206	2021
Nissar A Wani,	cell survival pathways involved in	(Future Medicine Group)			
Bader Alshehri &	chemoresistance in triple-	(Impact Factor-3.674)			
Manzoor A Mir*	negative breast cancer		1.1.5		
Umar M, Rais A,	The tumor microenvironment as	Cellular Oncology	44(6)	1209-1229	2021
Manzoor A	driver of stemness and therapeutic	(Springer Nature)			
Mur* & Nissar A	resistance in breast cancer: New	(Impact Factor-0.079)			
wani*	challenges and therapeutic				
Umar Mahrai	Prognostic significance and	Broast Cancor	18	101/08	2021
Hing Ogyoom &	targeting typer associated	(Springer Nature)	40	101400	2021
Manzoor A Mir*	macrophages in cancer new	(Imnact Factor-4 074)			
	insights and future perspectives	(Impuci 1 acioi - 7.024)			
Umar Mehrai	Tumor microenvironment	Cancer Chemotherany	87(2)	147-158	2021
Abid Hamid Dar	promotes breast cancer	and Pharmacology	57(2)	11, 150	
Nissar A. Wani &	<i>chemoresistance</i>	(Springer Nature)			
Manzoor A Mir*		(Impact Factor-3.288)			

Manzoor A Mir*, Hina Qayoom,, Nissar A. Wani	Targeting Different Pathways Using Novel Combination Therapy in Triple Negative Breast Cancer	Current Cancer Drug Targets (Bentham Science) ( <b>Impact Factor-2.907</b> )	20(8)	586-602.	2021
Hafsa Qadri, Abdul H. Shah, <b>Manzoor A Mir*</b>	Novel Strategies to Combat the Emerging Drug Resistance in Human Pathogenic Microbes	Current Drug Targets (Bentham Science) ( <b>Impact Factor-3.234</b> )	22(12)	1424-1436	2021
Bashir A. Sheikh, Basharat A. Bhat, <b>Manzoor A Mir*</b>	Development of New Therapeutics to Meet the Current Challenge of Drug Resistant Tuberculosis	Current Pharmaceutical Biotechnology (Bentham Science) (Impact Factor-2.829)	22(4)	480-500	2021
Mahak Majeed,Tanveer B Pirzadah, <b>Manzoor A Mir</b> et.al.	Comparative Study on Phytochemical Profile and Antioxidant Activity of an Epiphyte, Viscum album L. (White Berry Mistletoe), Derived from Different Host Trees	Plants ( <b>Impact Factor-4.658</b> )	10(6)	1191	2021
Hafsa Qadria, Munazah F Qureshi, <b>Manzoor A Mir*,</b> Abdul H Shah*	Glucose - The X factor for the survival of human fungal pathogens and disease progression in the host	Microbiological Research (Elsevier) ( <b>Impact Factor-6.763)</b>	247	126725	2021
Samra Hafeez, Mahwish Urooj, , <b>Manzoor A</b> <b>Mir</b> et.al.	BAD, a Proapoptotic Protein, Escapes ERK/RSK Phosphorylation in Deguelin and siRNA- Treated HeLa Cells	PLOS ONE Impact Factor (4.293)	11(1)	e0145780	2015
Marta Mila, Marina Garriga, <b>Manzoor A Mir</b> et.al.	¹²³ I-FP-CIT SPECT imaging, clinical diagnosisof common types of dementia and contributionof ischemia to brain damage	Frontiers in Systems Neuroscience <b>Impact Factor (3.673)</b>	9	99	2015
<b>Manzoor A Mir and</b> Javed N. Agrewala	Signaling through CD80:an approach for treating lymphomas	Expert Opinion in Therapeutic Targets (Taylor & Francis) Impact Factor (6.324)	12(8)	969-79	2008

# Important Books- Dr. Manzoor Ahmad Mir

1. Books/Reports/Chapters/General articles etc.

S. No	Title	Author's Name	Publisher	Year of
				Publication
1	Novel Approaches in Metronomic	Manzoor A Mir	Taylor & Francis Group	2024
	Chemotherapy for Breast Cancer		CRC Press	
	Treatment			
2	Cytokine and Chemokine Networks in	Manzoor A Mir	Springer-Nature	2023
	Cancer		Singapore	
3	Therapeutic potential of Cell Cycle	Manzoor A Mir	Springer-Nature	2022
	Kinases in Breast Cancer		Singapore	
4	Role of tumor microenvironment in	Manzoor A Mir	Elsevier Science	2022
	breast cancer and targeted Therapies		Publishers	

5	Combinational Therapy in Triple	Manzoor A Mir	Elsevier Science	
	Negative Breast Cancer		Publishers	2022
	Combination Therapies and their	Manzoor A Mir	Nova Biomedical USA	
6	Effectiveness in Breast Cancer			2021
	Treatment			
7	Cytokines and their Therapeutic	Manzoor A Mir	Nova Science Publishers	2020
	potential			
8	Plant Metabolites in Treatment of Cancer	Manzoor A Mir	Omics International	
	and Cerebrovascular Diseases	and Umar		2019
		Mehraj		
9	Natural Medicine for Cerebrovascular	Manzoor A Mir,	Ariana Publishers	2018
	Diseases	Umar Mehraj,		
10	Natural Herbs in the Prevention and	Manzoor A Mir	Nova Science Publishers	2016
	treatment of Stroke	(Single Author)	USA	
11	Developing Costimulatory Molecules for	Manzoor A Mir	Elsevier Publishers USA	2015
	Immunotherapy of Diseases	(Single Author)		
12	<b>Recent Advances in Stroke Therapeutics</b>	Manzoor A Mir,	Nova Biomedical	2014
		Raid S Albaradie,	Publishers New York	
		Malik D		
		Alhusainwi		
13	Costimulation Immunotherapy for	Manzoor A Mir,	Nova Science Publishers	2013
	Autoimmunity, Transplantation and	Raid S Albaradie	USA	
	Lymphomas	Abdul R Alharbi		
14	Polyphenols in Human Health	Manzoor A Mir	Nova Science Publishers	2008
		and Javed N	USA	
		Agrewala		
15	Human pathogenic microbes : diseases	Manzoor A Mir	Elsevier Science	2022
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### Dr. Reiaz ul Rehman

#### Important publications

- 1 Saleem, S., Mushtaq, N., ...Reiaz ul Rehman (2023). Computational and experimental analysis of foxtail millet under salt stress and selenium supplementation. Environmental Science and Pollution Research https://doi.org/10.1007/s11356-023-30364-4. ISSN:1614-7499. (Scopus/Web of science-Indexed) (IF5.8).
- 2 Saleem, S., Mushtaq, N., ...Reiaz ul Rehman (2023). Zinc Mediated Modulation of the Ascorbate–Glutathione Cycle for Salinity Stress Mitigation in Foxtail Millet (Setaria italica L.). J Soil Sci Plant Nutr. https://doi.org/10.1007/s42729-023-01436-8. ISSN: 0718-9508. (Scopus/ Web of science-Indexed) (IF3.9).
- 3 Saleem, S., Mushtaq, N., ...Reiaz ul Rehman (2023). Millets as smart future food with essential phytonutrients for promoting health. Journal of Food Composition and Analysis, 124,105669,ISSN 0889-1575, https://doi.org/10.1016/j.jfca.2023.105669. (Scopus/ Web of science-Indexed) (IF4.3).
- 4 Rasool, A., Hafiz Shah, W.,....Reiaz ul Rehman (2023). Exogenous selenium treatment alleviates salinity stress in Proso Millet (Panicum miliaceum L.) by enhancing the antioxidant defence system and regulation of ionic channels. Plant Growth Regul 100, 479–

494. https://doi.org/10.1007/s10725-022-00826-9. ISSN:0167-6903. (Scopus/ Web of science-Indexed) (IF4.0)

- 5 Mushtaq, N.,...**Reiaz ul Rehman** (2023).Exogenous zinc mitigates salinity stress by stimulating proline metabolism in proso millet (Panicum miliaceum L.). Front. Plant Sci. 14. https://www.frontiersin.org/articles/10.3389/fpls.2023.1053869. ISSN=1664-462X. (Scopus/ Web of science-Indexed) (IF5.6).
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- 7 Shah, W.H.,.... Reiaz ul Rehman (2023). Decarboxylation mechanisms of the C4 cycle in foxtail millet observed under salt and selenium treatments. Plant Growth Regul 99, 65–83 (2023). https://doi.org/10.1007/s10725-022-00888-9. ISSN:0167-6903. (Scopus/ Web of science-Indexed) (IF4.0).
- 8 Mushtaq NU,.....**Rehman RU**, Hakeem KR (2022). Selenate and selenite transporters in proso millet: Genome extensive detection and expression studies under salt stress and selenium. Front. Plant Sci.13:1060154. https://doi.org/10.3389/fpls.2022.1060154 ISSN=1664-462X. (Scopus/ Web of science-Indexed) (IF 5.6).
- 9 Malik, Bisma.,...Reiaz ul Rehman(2022). "Molecular and Phytochemical Characterizations of Cichorium intybus L. in Diverse Ecogeographical Regions of Kashmir Himalaya" Applied Sciences 12 (23): 12061. https://doi.org/10.3390/app122312061 __ISSN: 2076-3417 (Scopus/ Web of science-

https://doi.org/10.3390/app122312061. ISSN: 2076-3417. (Scopus/ Web of science-Indexed) (IF 2.7).

- 10 Aadil Rasool,...Reiaz ul Rehman (2022). Amelioration of salinity induced damage in plants by selenium application: A review, South African Journal of Botany, 147, 98-105.https://doi.org/10.1016/j.sajb.2021.12.029.(https://www.sciencedirect.com/science/articl e/pii/S0254629921005470) ISSN 0254-6299. (Scopus/ Web of science-Indexed) (IF 3.1).
- 11 Mahak Majeed, ....Reiaz ul Rehman (2022). Synergistic effect of plant extract coupled silver nanoparticles in various therapeutic applications- present insights and bottlenecks. Chemosphere, 288: 132527. https://doi.org/10.1016/j.chemosphere.2021.132527. ISSN: 0045-6535. (Scopus/ Web of science-Indexed) (IF8.9).
- 12 Fayaz Ahmad Dar, ...Reiaz ul Rehman (2022). Role of epigenetics in modulating phenotypic plasticity against abiotic stresses in plants. International Journal of Genomics, 2022. https://doi.org/10.1155/2022/1092894 ISSN:2314-4378. (Scopus/ Web of science-Indexed) (IF2.9)
- 13 Fayaz Ahmad Dar, Inayatullah Tahir, Khalid Rehman Hakeem, Reiaz ul Rehman (2022). Silicon Application Enhances the Photosynthetic Pigments and Phenolic/Flavonoid Content by Modulating the Phenylpropanoid Pathway in Common Buckwheat under Aluminium Stress. Silicon, 14: 323–334 https://doi.org/10.1007/s12633-021-01501-w. ISSN:1876-9918. (Scopus/ Web of science-Indexed) (IF3.4).
- 14 Fayaz Ahmad Dar, Inayatullah Tahir, Sameer H Qari, Aala A Abulfaraj, Maha Aljabri, Hesham F Alharby, Khalid Rehman Hakeem, Reiaz Ul Rehman (2021). Molecular Characterization and Population Genetic Structure of Fagopyrum Species Cultivated in Himalayan Regions. Sustainability 13 (21): 12165. https://doi.org/10.3390/su132112165. ISSN:2071-1050. (Scopus/ Web of science-Indexed) (IF3.9).
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- Fayaz Ahmad Dar.....Reiaz ul Rehman (2021). Morphological characterization reveals high intraspecies diversity in Fagopyrum esculentum Moench and Fagopyrum sagittatum Gilib from North-Western Himalayan regions. Agri Res. https://doi.org/10.1007/s40003-021-00581-9. ISSN: 2249-720X. (Scopus/Web of science-Indexed) (IF1.4)
- 19 Mahak Majeed, ... Reiaz ul Rehman (2021). Mistletoe lectins: From interconnecting proteins to potential tumour inhibiting agents. Phytomed Plus 1(3):10039. https://doi.org/10.1016/j.phyplu.2021.100039. ISSN:2667-0313. (Scopus/ Web of science-Indexed) (IF1.8).
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236. <u>doi: 10.1080/15226514.2017.1374332</u> ISSN: 1522-6514. (Scopus/Web of Science-Indexed) (IF:3.7).

- 29 Malhó R, ....Rehman RU (2015). Ion and lipid signaling in apical growth—a dynamic machinery responding to extracellular cues. Front. Plant Sci. 5.6 <u>doi:10.3389/fpls.2015.00816</u>. ISSN: 1664-462X. (Scopus/Web of Science-Indexed). (IF5.7).
- 30 **Reiaz Ul Rehman,** .....Gian Pietro Di Sansebastiano (2011). Nicotiana tabacum protoplasts secretome can evidence relations among regulatory elements of exocytosis mechanisms. Plant Signaling and Behavior. 6(8):1140-1145. <u>doi:</u> 10.4161/psb.6.8.15750. ISSN: 1559-2316. (Scopus/Web of Science-Indexed) (IF2.9).
- 31 **Reiaz Ul-Rehman**, ....Rui Malho (2011). Localization of Arabidopsis SYP125 syntaxin in the plasma membrane Sub-apical and distal zones of growing pollen tubes. Plant Signaling and Behavior. 6(5):665-670. <u>doi:10.4161/psb.6.5.14423.</u> ISSN: 1559-2316. (Scopus/Web of Science-Indexed) (IF2.9).
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- 34 Reiaz ul Rehman,.....M.Z.Abdin (2003). In vitro regeneration of witloof chicory (Cichorium intybus L.) from the leaf explants and accumulation of esculin. In Vitro Cell. Dev. Biol.-Plant 39: 142- 146. https://doi.org/10.1079/IVP2002381. ISSN: 1054-5476. (Scopus/Web of Science-Indexed) (IF2.7).

### Dr. Peer Abdul Haseeb Shah (Important Publications)

- Novel role of a family of major facilitator transporters in biofilm development and virulence of Candida albicans. <u>Shah AH</u>, et al. Biochem. J. (2014) 460: 223–235. (IF-4.1)
- Mutational analysis of intracellular loops identify cross talk with nucleotide binding domains of the yeast ABC transporter Cdr1p. <u>Shah AH</u>, et al. Sci Rep. (2015) 5:11211. (**IF-4.6**)
- Molecular basis of substrate polyspecificity of the Candida albicans mdr1p multidrug/H+ antiporter. Redhu AK, Banerjee A, **Shah AH**, et al. J Mol Biol. (2018) 430:682-694. (**IF-5.6**)
- Resistance to antifungal therapies. Prasad R, Banerjee A, Shah AH. Essays in Biochemistry (2017) 61:157-166 (IF-6.4)
- Quorum sensing: A less known mode of communication among fungi. Padder SA, Prasad R, Shah AH*. Microbiol Res. (2018) 210:51-58 (IF-6.7)
- Glucose-The X-factor for the survival of human fungal pathogens and disease progression in the host. Qadri H, Qureshi MF, Mir MA, Shah AH* Microbio. Res (2021) 247, 126725. (IF-6.7)
- Metabolic flexibility and extensive adaptability governing multiple drug resistance and enhanced virulence in Candida albicans. Padder SA, Ramzan A, Tahir I, R Reiaz ul, Shah AH*. Crit Rev Microbiol. (2022);48:1-20 (IF-6.5)
- β-Nitrostyrene derivatives as broad range potential antifungal agents targeting fungal cell wall. Ramzan A., Padder S.A., Masoodi K.Z., Shafi S., Tahir I., Rehman R., Prasad R., Shah AH*. Eur J Med Chem. (2022);240:114609 (IF-6.7)

- Quinidine drug resistance transporter knockout Candida cells modulate glucose transporter expression and accumulate metabolites leading to enhanced azole drug resistance. Qadri H, Shah AH*, et. al. Fungal Genet Biol. (2022);161:103713 (IF-3.0)
- Glucose metabolic reprogramming and modulation in glycerol biosynthesis regulates drug resistance in clinical isolates of Candida. Padder SA, Padder RA, Ramzan A, Bashir G, Tahir I, Rehman RU, Shah AH*. J Appl Microbiol. (2023);134:1xad091 doi: 10.1093/jambio/1xad091 (IF-4.00)
- Physicochemical and anti-fungal studies of pharmaceutical cocrystal/salt of fluconazole. Ahangar AA, Qadri H, Malik AA, Mir MA, **Shah AH*** and Dar AA. ACS Mol. Pharmaceutics. (2023) doi: 10.1021/acs.molpharmaceut.3c00087 (**IF:4.9**)

#### Publications: •Citations:1295 •h-index:19 • i10-index: 23 (01.02.2024)

- 1. *Kiesar Sideeq Bhat*, Hyejin Kim, Asrar alam, Myunggon Ko, Jungeun An, Sooman Lim. Rapid and label-free detection of 5-hydroxymethylcytosine in genomic DNA using an Au/ZnO nanorods hybrid nanostructure based electrochemical sensor. Adv. Healthcare Mater.2021, 2101193. (*Impact factor 11.092*).
- 2. *Kiesar Sideeq Bhat*, *Rafiq Ahmad*, *Tahmineh Mahmoudi*, *and Yoon-Bong Hahn*. *High performance chemical sensor with field-effect transistors array for selective detection of multiple ions*. *Chemical Engineering Journal 417 (2021) 128064*. (*Impact factor 16.744*).
- 3. *Kiesar Sideeq Bhat*, Umesh T. Nakate, Jin-Young Yoo, Yousheng Wang, Tahmineh Mahmoudi, and Yoon-Bong Hahn* Cost-effective Silver Ink for Printable and Flexible Electronics with Robust Mechanical Performance. Chemical Engineering Journal, 373 (2019) 355-364, (**Impact factor 16.744**).
- 4. *Kiesar Sideeq Bhat*, Umesh Tukaram Nakate, Jin-Young Yoo, Yousheng Wang, Tahmineh Mahmoudi, and Yoon- Bong Hahn* Nozzle-jet printed Ag/rGO based flexible FET sensor for phosphate ion detection. ACS Omega, 2019, 4 (5), pp 8373-8380. (Impact factor 4.132).
- 5. *Kiesar Sideeq Bhat*, *Rafiq Ahmad*,* *Jin-Young Yoo*, *Yoon-Bong Hahn** *Fully nozzle-jet printed non-enzymatic electrode for biosensing application. Journal of Colloid and Interface Science 512 (2018) 480-488. (Impact factor 9.965)*
- 6. *Kiesar Sideeq Bhat*, *Rafiq Ahmad*, *Jin-Young Yoo and Yoon-Bong Hahn* Nozzle-jet printed flexible field-effect transistor biosensor for high performance glucose detection. Journal of Colloid and Interface Science 506 (2017) 188-196. (Impact factor 9.965)*
- 7. *Kiesar Sideeq Bhat*, *Rafiq Ahmad*, *Yousheng Wang and Yoon-Bong Hahn* Low-temperature sintering of highly conductive silver ink for flexible electronics*. J. Mater. Chem. C, 2016,4, 8522-8527. (Impact factor 8.067)
- 8. *Kiesar Sideeq Bhat*, Shi Qian, Aidil Mohammad Johari, Song Juha. 4D mechanism of shape reconfigurable and recyclable smart plastics. (manuscript In progress, Target journal_Advanced Materials, Impact factor 32.086).
- 9. Kiesar Sideeq Bhat, Hyejin Kim, Asrar alam, Myunggon Ko, Jungeun An, Sooman Lim. A fast and label-free detection of hydroxymethylated DNA using a nozzle-jet printed AuNPs@Ti3C2 MXene-based electrochemical sensor. Talanta, 244, 123421, (Impact factor 6.556).
- Dattatray Chadar, Soniya S. Rao, Ayesha Khan, Shridhar P. Gejji, Kiesar Sideeq Bhat, Thomas Weyhermuller and Sunita Salunke-Gawali*. Benzo[α]phenoxazines and Benzo[α]phenothiazine from Vitamin K3: Synthesis, Molecular structures, DFT studies and Cytotoxic activity. RSC Adv., 2015, 5, 57917-57929. (Impact factor 4.036)
- 11. Rafiq Ahmad,* Nirmalya Tripathy, Muhammad Yasir Khan, Kiesar Sideeq Bhat, Min-sang Ahn, Gilson Khang, Yoon-Bong Hahn* Hierarchically assembled ZnO nanosheets microspheres for

enhanced glucose sensing performances. Ceramics International 42 (2016) 13464-13469. (Impact factor 5.532)

- 12. Rafiq Ahmad,* Nirmalya Tripathy, Muhammad Yasir Khan, **Kiesar Sideeq Bhat**, Min-sang Ahn and Yoon-Bong Hahn* Ammonium ion detection in solution using vertically grown ZnO nanorod based field-effect transistor. RSC Adv., 2016, 6, 54836-54840. (**Impact factor 4.036**)
- 13. Rafiq Ahmad, Kiesar Sideeq Bhat, Min-Sang Ahn and Yoon-Bong Hahn* Fabrication of a robust and highly sensitive nitrate biosensor based on directly grown zinc oxide nanorods on a silver electrode. New J. Chem., 2017, 41, 10992-10997. (Impact factor 3.925)
- 14. Yousheng Wang, Tahmineh Mahmoudi, Won- Yeop Rho, Hwa-Young Yang, Seunghui Seo, Kiesar Sideeq Bhat, Rafiq Ahmad, Yoon-Bong Hahn* Ambient-air-solution-processed efficient and highly stable perovskite solar cells based on CH3 NH3PbI3-xClx-NiO composite with Al2O3/NiO interfacial engineering. Nano Energy 40 (2017) 408- 417. (Impact factor 19.069)
- 15. Rafiq Ahmad, Nirmalya Tripathy, Min-Sang Ahn, **Kiesar Sideeq Bhat**, Tahmineh Mahmoudi, Yousheng Wang, Jin-Young Yoo, Dae-Wook Kwon, Hwa-Young Yang & Yoon-Bong Hahn* Highly efficient non-enzymatic glucose sensor based on cuo modified vertically-grown ZnO nanorods on electrode. Sci Rep 7, 5715 (2017). (**Impact factor 4.996**)
- 16. Min-Sang Ahn, Rafiq Ahmad,* Kiesar Sideeq Bhat, Jin-Young Yoo, Tahmineh Mahmoudi,Yoon-Bong Hahn* Fabrication of a solution-gated transistor based on valinomycin modified iron oxide nanoparticles decorated zinc oxide nanorods for potassium detection. Journal of Colloid and Interface Science 518 (2018) 277-283. (Impact factor 9.965)
- 17. Yousheng Wang, Tahmineh Mahmoudi, Hwa-Young Yang, **Kiesar Sideeq Bhat**, Jin-Young Yoo and Yoon-Bong Hahn* Fully-ambient-processed Mesoscopic Semitransparent Perovskite Solar Cells by Islands-structure-MAPbI3- xClx-NiO Composite and Al2O3/NiO Interface Engineering. Nano Energy 49 (2018) 59-66. (**Impact factor 19.069**)
- 18. Umesh Nakate, Rafiq Ahmad, Pramila Patil, **Kiesar Sideeq Bhat**, Yousheng Wang, Tahmineh Mahmoudi, Y. T Yu, Eun-kyung Suh, Yoon-Bong Hahn. High response and low concentration hydrogen gas sensing properties using hollow ZnO particles transformed from polystyrene@ZnO core-shell structures. Int. J. Hydrogen Energy 44 (2019) 15677-15688. (Impact factor 7.139)
- 19. Umesh Nakate, Rafiq Ahmad, Pramila Patil, Yousheng Wang, Kiesar Sideeq Bhat, Tahmineh Mahmoudi, Y. T Yu, Eun-kyung Suh, Yoon-Bong Hahn. Improved selectivity and low concentration hydrogen gas sensor application of Pd sensitized heterojunction n-ZnO/p-NiO nanostructures. Journal of Alloys and Compounds 797 (2019) 456-464. (Impact factor 6.371)
- 20. Xue Qi, Xinlin Li, Hyunjin Jo, **Kiesar Sideeq Bhat**, Sehyun Kim, Jungeun An, Jae-Wook Kang, Sooman Lim. Mulberry paper-based graphene strain sensor for wearable electronics with high mechanical strength. Sensors and Actuators A-Physical, 301(2020), 111697. (**Impact factor 4.291**)
- 21. Jingyi Zhang, Lydia Chong, **Kiesar Sideeq Bhat**, Derrick Yong, Juha Song* Supramolecular and Additive Coatings for Designing Artificial Spores in Biomedical Engineering and Beyond: Overview and Prospects. Biomaterials, 266, 120473, 2021. (**Impact factor 15.304**)
- 22. Anha Bhat, Shoaib Anwer, **Kiesar Sideeq Bhat**, M. Infas H. Mohideen, Kin Liao, and Ahsanulhaq Qurashi. Prospects challenges and stability of 2D MXenes for clean energy conversion and storage applications, Nature npj journal of 2D materials 5(1), 61, 2021. (**Impact factor 11.541**)
- 23. Saqib Qazi Muhammad, Chougale Mahesh, Khan Muhammad Umair, Shaukat Rayyan Ali, Kim Jungmin, **Kiesar Sideeq Bhat**, Bae Jinho. Lignocellulosic Waste Fruit Shell Based Tribopositive Materials for Harnessing Green Energy: A Comparative Analysis. Materials Today Sustainability 18, 100146, (**Impact factor 7.244**).
- 24. Marya Khan, Vandana Nagal, Sakeena Masrat, Talia Tuba, Nirmalya Tripathy, Shamshad Alam, Ajit Khosla, Mansoor Ali Syed, **Kiesar Sideeq Bhat** and Rafiq Ahmad. Vertically-Oriented Zinc Oxide Nanorods Based Electrolyte-Gated Field-Effect-Transistor for High-Performance Glucose Sensing. ACS Anal. Chem. 2022, 94, 25, 8867–8873 (**impact factor 8.008**).

- 25. Sakeena Masrat, Vandana Nagal, Marya Khan, Iqra Moid, Shamshad Alam, **Kiesar Sideeq Bhat**, Ajit Khosla, Rafiq Ahmad. Electrochemical Ultrasensitive Sensing of Uric Acid on Non- enzymatic Porous Cobalt Oxide Nanosheets-Based Sensor. Biosensors **2022**, 12(12), 1140.
- 26. Sakeena Masrat, Vandana Nagal, Marya Khan, Akil Ahmad, Mohammed B. Alshammari, Shamshad Alam, Ajit Khosla, **Kiesar Sideeq Bhat***, Rafiq Ahmad*. Boosted electrochemical sensing of uric acid with zinc oxide nanorods and copper oxide nanoseeds based hybrid nanostructures. ACS Appl. Nano Mater. 6, 18, **2023**.
- 27. Vandana Nagal, Sakeena Masrat, Marya Khan, Shamshad Alam, Akil Ahmad, Mohammed B Alshammari, **Kiesar Sideeq Bhat**, Sergey M Novikov, Prabhash Mishra, Ajit Khosla, Rafiq Ahmad. Highly Sensitive Electrochemical Non-Enzymatic Uric Acid Sensor Based on Cobalt Oxide Puffy Balls-like Nanostructure. Biosensors **2023**, 13(3), 375.
- 28. Nagal, Vandana; Khan, Marya; Masrat, Sakeena; Alam, Shamshad; Ahmad, Akil; Alshammari, Mohammed; Bhat, Kiesar Sideeq; Ahmad, Rafiq. Hexagonal Cobalt Oxide Nanosheets Based Enzymeless Electrochemical Uric Acid Sensor with Improved Sensitivity. New J. Chem., 2023,47, 4206-4212.
- 29. Metabolic modulation to improve MSC therapeutic potential for articular cartilage repair Ching Ann Tee; Daniel Ninio Roxby; Rashidah Othman; Vinitha Denslin; Kiseer Sideeq Bhat; Zheng Yang; Jongyoon Han; Lisa Tucker-Kellogg; Laurie A. Boyer. Stem Cell Research & Therapy (Submitted)
- 30. Muthu, Yie-Hou Lee, Rhodolfo, Andrea, Chester Lee-Drum. Magnetic resonance relaxometric study of cardiomyocytes. (Manuscript in progress for Science translational medicine journal)

#### →Invited Talks/Presesntations/Workshops:

- 1. Poster presentation, ACGT worshop, Singapore, 16-05-2023. Detection of paramagnetic ferric ions in Mesenchymal Stem Cells by highly sensitive and non-invasive magnetic resonance relaxometry. Kiesar Sideeq Bhat, Yie Hou Lee, Jongyoon Han.
- 2. Invited participant/viewer of 10th Global Young Scientist Summit Singapore 17-21, 01, 2022.
- 3. Invited talk at international conference of Nanotechnology for better living (ICNBL-2021), NIT, Srinagar, India 07- 11.09.2021. Kiesar Sideeq Bhat, Song Juha. Shape reconfigurable and recyclable 4D smart plastics.
- 4. Tech Talk, HP-NTU, Singapore, 13.10.2020. *Kiesar Sideeq Bhat*, Juha Song. In situ or postfunctionalization conductive inks for 3D printed electronics.
- 5. Virtual workshop, HP-NTU, Singapore, 25-28 August 2020, **Kiesar Sideeq Bhat**, Juha Song. 4D printed smart systems through material and structural designs.
- 6. Virtual workshop, HP-NTU, Singapore, 09.05.2020, **Kiesar Sideeq Bhat**, Mohammad Aidil, Juha Song, Tico Ballagas. Development of 4D printed smart systems.
- 7. Oral Talk at CMCEE, Singapore, 22-27.02.2018. *Kiesar Sideeq Bhat*, Jin-Young Yoo, Yousheng Wang and Yoon- Bong Hahn. Nozzle-jet printed flexible enzymatic field-effect transistor (FET) and non-enzymatic electrochemical based glucose biosensors.
- 8. Invited Talk at MCARE, South Korea, 20-24.02.2017. Kiesar Sideeq Bhat, Rafiq Ahmad, Yousheng Wang and Yoon- Bong Hahn. Low-temperature sintering of highly conductive silver ink for flexible electronics.
- 9. Poster Presentation at NANO KOREA, South Korea, 12-14.07.2017. Kiesar Sideeq Bhat, Jin Young Yoo, Rafiq Ahmad, Min-Sang Ahn and Yoon-Bong Hah. Nozzle-jet printed flexible biosensor-based field-effect transistor for high performance glucose detection.
- 10. Poster Presentation at IWFPE, South Korea, 23-24.11.2016. Kiesar Sideeq Bhat, Rafiq Ahmad, Yousheng Wang, and Yoon-Bong Hahn* Low-temperature sintering highly conductive silver ink for flexible electronics.

- 11. Poster Presentation at IWFPE, South Korea, 04-06.11.2015. Kiesar Sideeq Bhat, Rafiq Ahmad, Muhammad Yasir Khan, Hwa-Yong Yang, Won-Yeop Rho and Yoon-Bong Hahn* Synthesis of Low-temperature Sintering Silver Precursor Ink for the Fabrication of Highly Conductive Flexible Electronics by Spin Coating.
- 12. Poster Presentation at KiChe, South Korea, 27.10.2018. Kiesar Sideeq Bhat, Jin-Young Yoo, Umesh Nakate, Yousheng Wang and Yoon-Bong Hahn* Fully nozzle-jet printed non-enzymatic electrode for biosensing application.
- 13. Poster Presentation at KiChe, South Korea, 27.04.2018. Kiesar Sideeq Bhat, Jin-Young Yoo,, Yousheng Wang, Tehmineh mahmoudi, Dae-Ook Kwan and Yoon-Bong Hahn* Fully nozzle-jet printed non-enzymatic electrode for biosensing application.
- 14. Poster Presentation at KiChe, South Korea, 28.04.2017. Kiesar Sideeq Bhat, Rafiq Ahmad, Yoo Jin Young, Min- Sang Ahn, Yousheng Wang and Yoon-Bong Hahn. Nozzle-jet printed flexible biosensor-based field-effect transistor for high performance glucose detection.
- 15. Poster Presentation at KiChe, South Korea, 20.10.2016. Kiesar Sideeq Bhat, Rafiq Ahmad, Wang Yousheng, and Yoon-Bong Hahn* Low temperature Sintering Highly Conductive Silver Ink for Flexible electronics.
- 16. Poster Presentation at KiChe, South Korea, 28.04.2016. Kiesar Sideeq Bhat, Rafiq Ahmad, Wang Yousheng, and Yoon-Bong Hahn* Low-temperature Sintering Highly Conductive Silver Ink for Flexible electronics.
  - Research highlights of importance

#### Dr. Manzoor Ahmad Mir

No. of Publications: 76 Cumulative Impact Factor: 314 Reads on Research Gate: 3.87 Lacs No. of Citations: 2108 (RG)/ 1813 (GS) H-index/i-10 Index: 24/ 55 (RG/GS)

Our Research Group started working in Cancer Biology with a focus on Breast Cancer in 2019 & since then we have published almost 36 Papers in high impact Journals like Seminars in Cancer Biology (Impact Factor 17.107), Cellular Oncology (IF-7.127), Critical Reviews in Oncology/Hematology (IF-6.786), Frontiers in Oncology (IF-6.280), Frontiers in Pharmacology (IF-5.983), Molecular Pharmaceutics (IF-5.263), Chemico-Biological Interactions (IF-5.428), Frontiers in Medicine (IF-5.765), Biomedicines (IF-5.347), Heliyon (IF-4.023), Frontiers in Endocrinology (IF-5.876), Journal of Ethnopharmacology (IF-5.171), Applied Microbiology and Biotechnology (IF-5.760), Scientific Reports (IF-4.996), Breast Cancer (IF-4.567), Cancer Biomarkers (IF-4.338), Immunologic Research (IF-4.784), Journal of Biomedical Nanotechnology (IF-4.833), Saudi Journal of Biological Sciences (IF-4.056), Clinical Breast Cancer (IF-3.457), Medical Oncology (IF-3.786), Current Drug Targets (IF-3.234), Medicinal Chemistry (IF-3.023), Natural Products (IF-2.345), Current Pharmaceutical Biotechnology (2.832), Applied Biochemistry and Biotechnology (IF-2.735), Anti-cancer Agents in Med Chemistry (IF- 2.505), Advances in Cancer Biology, etc. to name a few & we have also published five Books on various aspects of Breast Cancer with Elsevier, Springer and CRC Press. I being the Coordinator of the group have got more than 1000 citations in 2023 and was listed by Stanford University USA among the top 2% of global scientists list.

*My* research Group has published more than 5 international books in last two years with Publishers like Elsevier, Springer and CRC Taylor & Francis listed below:

1. Role of Tumor Microenvironment in Breast Cancer and Targeted Therapies

https://www.sciencedirect.com/book/9780443186967/role-of-tumor-microenvironment-in-breastcancer-and-targeted-therapies

2. Combinational Therapy in Triple Negative Breast Cancer

https://www.sciencedirect.com/book/9780323961363/combinational-therapy-in-triple-negative-

 breast-cancer

 3. Therapeutic potential of Cell Cycle Kinases in Breast Cancer

 https://link.springer.com/book/10.1007/978-981-19-8911-7

 4. Cytokine and Chemokine Networks in Cancer

 https://link.springer.com/book/10.1007/978-981-99-4657-0

 5. Novel Approaches in Metronomic Chemotherapy for Breast Cancer Treatment

 https://www.routledge.com/Novel-Approaches-in-Metronomic-Chemotherapy-for-Breast-Cancer 

 Treatment/Mir/p/book/9781032620459

Besides this I have developed two websites Databases Developed related to research work: 1. Breast cancer awareness Website/Database https://breastcancer.uok.edu.in/Main/Default.aspx 2. Medicinal Plants Database of J&K. https://bioresources.uok.edu.in/Main/ViewPage.aspx?Page=database&active=lnk7s

## Dr. Peer Abdul Haseeb Shah

## **Research Stats**

Orcid ID:	0000-0003-2242-0551	<b>Scopus Author ID:</b>	54685076200	
<b>Research Interest Score:</b>	>535	<b><u>Researcher Id/Web of Science</u></b>	<u>ABH-8823-2020</u>	
Citations:	820	<b>Publications (International):</b>	23	
H-index:	12	Cumulative impact factor:	104.69	
i10-index:	17	Average impact factor:	4.55	
PhD students guided:		05		
Projects completed as PI:		02		
New Projects sanctioned as PI:		01		
Outreach Projects awarded as PA:		02		
Projects submitted as Co-PI:		01		

# **Research Projects**

1. Novel insights into the role of amino acid ... *Candida albicans* multidrug ABC transporter Cdr1p

	Agency	Amount (INR)	Status	Role
	UGC-GoI	~20 lakhs	<b>Completed (2015-18)</b>	PI
2.	Drug resistance in fu	ngi and the role of post-transla	ational modifications of membrane	
	proteins			
	Agency	Amount (INR)	Status	Role
	DST	35 Lakhs+ Salary Grant	<b>Completed (2015-20)</b>	PI
3.	Clinical drug resistan	a: of drug resistance and drug		
	tolerance			
	Agency	Amount (INR)	Status	Role
	SERB (DST)	42 lakhs	<b>Completed (2016-20)</b>	PI
4.	ASM Young Ambassa	-		
	Agency	Amount (INR)	Status	Role
	American SM	2.6 lakhs (Approx.)	<b>Completed (2020-22)</b>	PA
5	Outreach and mentors	hin program forunderprivil	eged student community (Outreach	

5. Outreach and mentorship program for ..... underprivileged student community (Outreach Project)

	Agency	Amount (INR)	Status	Role
	IndiaBioscience	1 lakhs	<b>Ongoing</b> (2023-24)	PA
6. Pharmaceutical co-crystals/salts of and anti-fungal properties and cytotoxicity studies				
	Agency	Amount (INR)	Status	Role
	SERB (DST)	46 lakhs (approx.)	Approved (2023-26)	PI

# Group (Ph.D. students awarded/ongoing)

- Dr. Sajad Ahmad Padder (Ph. D. awarded)
- Dr. Asiya Ramzan (Ph. D. Awarded)
- Ms. Hafsa (Ph. D. Submitted)
- Ms. Safura Nisar (Ph.D. Ongoing)
- Mr. Asif A Malik (Ph.D. Ongoing)

# **Research Highlights:**

- 1. We have developed crystalline form of antifungal drug fluconazole (FLC-C). FLC-C is active against several human pathogenic yeast strains, including the leading and emerging Candida strains (Candida albicans and Candida auris, respectively), at comparable and/or lower drug concentrations without showing any enhanced host cell toxicity.
- 2. Study related to elucidation of antifungal properties of  $\beta$ -Nitrostyrene derivatives show that  $\beta$ -Nitrostyrene derivatives have strong antifungal potential with a particular mode of activity similar to known cell wall perturbing antifungal agents and thus can be exploited as promising potential antifungal agents for further studies.
- 3. Study of Quinidine drug transporter knockout (QDRKO) Candida strains show that KO strains exhibit an enhanced azole drug resistance than the parental Candida strain, particularly at a low glucose concentration of the culture media. Our findings imply that deleting QDR genes (individually or collectively) alters cellular pathways, particularly those associated with glucose and glycerol accumulation. This possibly provides the cells with a mechanism to overcome stress and partially maintain the cellular pathogenicity/virulence in the absence of QDR MFS transporters.
- 4. Drug resistant clinical isolates of Candida show novel mechanisms of drug resistance. In the case of C. albicans drug resistance was mostly mediated by Hexokinase 2 (Hxk2) and Glucose-6-phosphate dehydrogenase (G6pd). Increased expression of Hxk2 was associated with increased glucose uptake, more lactate production, and more ATP generation in drug-resistant C. albicans. At the same time, increased G6pd expression was responsible for the increased production of NADPH, which imparts a better ROS scavenging potential. While in C. glabrata the resistance was linked with glycerol metabolism, where the drug-resistant isolate tends to accumulate more glycerol as an osmolyte in response to external stresses. This glycerol accumulation was found to be triggered by the HOG1-MAPK pathway.

### Industry Collaborations/Internship Hubs

• Collaboration with industry partners.

JKEDI, SKIMS, Central University of Kashmir, IIIM Srinagar, SKAUST-Kashmir, RRIUM Srinagar

• Major internship hubs

JKEDI, SKIMS, Central University of Kashmir, IIIM Srinagar, SKAUST-Kashmir, RRIUM Srinagar

#### **Placement Assistance and Support**

- Department/faculty's efforts in providing career counseling, placement support, and industry connections for students. Department has career counseling cell which along with CCPC Kashmir University Counsels and helps the students for placements in various agencies/institutions
- List of Prominent Recruiters *Higher Education, School Education, SKIMS, J&K Bank etc*

#### **Contact Information**

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