

SADIQ AZAM

Associate Professor

@ drazam@uop.edu.pk +92-332-9279970
✉ Centre of Biotechnology and Microbiology, University of Peshawar
📍 25120 Peshawar, PAKISTAN
🌐 <https://scholar.google.com/citations?user=fOjb74oAAAAJ&hl=en&oi=ao>
🌐 <http://www.uop.edu.pk/departments/Teaching-Faculty/?r=180&q=Dr-Sadiq-Azam>



EXPERIENCE

Associate Professor

University of Peshawar

📅 Feb 2023 – To date 📍 Peshawar

- Teaching and Research

Assistant Professor

Centre for Biotechnology and Microbiology, University of Peshawar

📅 Apr 2012 – Feb 2023 📍 Peshawar

- Teaching and Research

Lecturer

University of Peshawar

📅 Feb 2012 – Apr 2012 📍 Peshawar

- Teaching and Research

Assistant Professor

Department of Biotechnology Bacha Khan University

📅 Sep 2011 – Feb 2012 📍 Charsadda

PROJECTS

1. As Principal Investigator

DoST PKR Rs. 0.320m (Completed)

Directorate of Science and Technology (DoST)

📅 2014-2015 📍 Peshawar

- Pharmacological and phytochemical analysis of the aerial part of *Silene conoidea*

RESEARCH FIELDS

- Bacteriological profiling and identification of genes responsible for antibiotic resistance in clinical isolates.
- Assessment of Herbal Medicine and Natural Products for their Antimicrobial Activities Against Pathogenic Bacteria

AWARDS AND HONORS



HEC Indigenous Scholarship

2007 – 2011

HEC Indigenous Scholarship for M. Phil leading to Ph.D. studies

RESEARCH EXPERTIES

Antimicrobial Susceptibility Pattern

MIC Testing

Isolation of Pathogenic Bacteria

Analytical Profile Indexing

Microscopy

Polymerase Chain Reaction (PCR)

Medicinal Plants

Pathogenic Bacteria

Antimicrobial Activities

HEC PKR Rs. 3.035m (Completed)

Higher Education Commission (HEC)

📅 2015-2017

📍 Islamabad

- Bioassay Screening, Standardization and Phytochemical Investigations of *D. Phodocarpum*

HEC-PKR Rs. 2.63m (Completed)

Higher Education Commission (HEC)

📅 2019-2021

📍 Islamabad

- Molecular characterization and epidemiology of antibiotic resistance genes of extended-spectrum β -Lactamase (ESBL) and carbapenemase producing *Escherichia coli* from clinical isolates in tertiary care hospitals, in District Peshawar of Khyber Pakhtunkhwa

2. As Co-Principal Investigator

HEC PKR Rs. 2.014635 m (Completed)

Higher Education Commission (HEC)

📅 2015-2017

📍 Islamabad

- Biological and Phytochemical Investigations of the fruits of *Sarcococca saligna* (D. Don) Muel

HEC-PKR Rs. 2.60m (Completed)

Higher Education Commission (HEC)

📅 2017-2020

📍 Islamabad

- Bioassay screening and standardization of *Pinus wallichiana*

HEC-PKR Rs. 3.5m (Completed)

Higher Education Commission (HEC)

📅 2017-2020

📍 Islamabad

- Bacteriological Profiling and Gene(s) Identification Responsible for Antibiotic Resistance in Bacteria Causing Complicated Skin and Skin Structure Infections

LANGUAGES

English



Urdu



Pashto



EDUCATION

PhD in Biotechnology

University of Peshawar

📅 2007 – 2011

📍 Pakistan

BBT (Bachelor of Biotechnology)

University of Peshawar

📅 2003 – 2007

📍 Peshawar

FSc in Pre-Medical

Nisar Shaheed Degree College, Resalpur

📅 2000 – 2002

📍 Peshawar

SSc in Science

Govt. High School Swabi

📅 1998 – 2000

📍 Peshawar

ADMINISTRATION

- Teaching and Research
- Member of Board of Studies, Department of Microbiology, University of Swabi
- Member of Board of Studies, Institute of Biotechnology and Microbiology, Bacha Khan Khan University, Charsadda
- Member of Board of Studies, Department of Allied and Health Sciences, City University, Peshawar
- Coordinator BS Microbiology Program at Centre of Biotechnology and Microbiology, university of Peshawar
- Incharge Examinations at Centre of Biotechnology and Microbiology, university of Peshawar

RESEARCH SUPERVISION

- * HEC and IRTC Approved Supervisor
- * PhD:=04, M.Phil =23, and BS= 30, (Completed)
- * PhD:=07, M.Phil =05, (In Progress)

REFEREES

1. Dr. Ibrar Khan

@ ibrarkhan1984@uop.edu.pk

✉ Tenured Professor, Centre of Biotechnology & Microbiology, University of Peshawar
Contact: +92-331-5818733

2. Dr. Sumera Afzal

@ drsumera@uop.edu.pk

✉ Associate Professor, Centre of Biotechnology and Microbiology, University of Peshawar
Contact: +92-91-9222209

PUBLICATIONS

* Articles = 66, * IF $\approx$ 92, * Citations = 947, * h-index = 16, * i10-index = 28

1. Zermina Z, **Sadiq A**, Ibrar K, Ajmal K, Hamid A, Noor R, Riaz U and Ijaz A, Diversity of Extraintestinal Pathogenic Escherichia coli in relation To Adhesin Genes and their Antimicrobial Analysis, *Frontiers in Pharmacology*, **2024**.
2. Muhammad SI, Asad U, Aqdas Z, Haseen US, Sajjad A, **Sadiq A**, Amjad K, Sidra F. Phytochemical profile and synthesis of *Fernandoa adenophylla* syrup and its evaluation in multiple biological activities, *J. of Biol. Reg. and Homeostatic Agentss*. **2023**.
3. M Riaz, I Khan, S Khan , F Sattar, S Azam, MI Khan. Study on multidrug, extensive drug and pan drug resistance in septicemic infants *J. of Applied Microbiol and Biotechnol*. 2(01):40-45, **2023**.
4. MR Khan, S Azam, S Ahmad, Q Ali, Z Liaqat, N Rehman, I Khan, M Alharbi, A Alshammari. Molecular characterization and epidemiology of antibiotic resistance genes of β -Lactamase producing bacterial pathogens causing septicemia from Tertiary Care Hospitals. *Antibiotics*. 12(3): 617. **2023**.
5. S Quddus, Z Liaqat, S Azam, MU Haq, S Ahmad, M Alharbi, I Khan. Identification of efflux Pump mutations in *Pseudomonas aeruginosa* from clinical Samples. *Antibiotics*. 12(3):486, **2023**.
6. AA Khattak Naheed, S Rahman, S Azam, N Rehman, M Asghar, A Aziz. Phylogenetic analysis and molecular characterization of antibiotic resistant genes Of *Proteus mirabilis* recovered from infected patients Of skin and soft tissue wounds. *J. of Pharma. Neg. Results*. 2733-2741. **2023**.

DIDACTICS

- Techniques in Biotechnology
- Nucleic Acid
- Fundamental of Microbiology
- Environmental Biotechnology
- Medical Biotechnology
- Fundamental of Genetics

7. Z Liaqat, I Khan, S Azam, Y Anwar, EH Althubaiti, L Maroof. Isolation and molecular characterization of extended spectrum beta lactamase producing *Escherichia coli* from chicken meat in Pakistan. *PloS one*. 17(6): e0269194. **2022**.
8. L Maroof, I Khan, H Hassan, S Azam, W Khan. Microbial degradation of low density polyethylene by *Exiguobacterium* sp. strain LM-IK2 isolated from plastic dumped soil. *World J of Microbiol and Biotechnol* . 38(11):1-9. **2022**.
9. L Zainab, K Ibrar, A Sadiq, AK Hamid, M Ullah, R Noor. Extended Spectrum β Lactamases- producing *E. coli* in retail chicken meat from Khyber Pakhtunkhwa, Pakistan. *Saudi Journal of Biological Sciences*. 29 (6): 103280. **2022**.
10. Sadiq A, Nauman K, Ibrar k, M. Asghar, Amjad A, Azam H, Gul S, Anila F, Noor R. Molecular characterization and mutational analysis of fluoroquinolones and tetracycline resistant genes of *E. coli* isolated from UTI patients . *Brazilian Arch of Biol and Technol* . 65: **2022**.
11. Noor R, Sadiq A, Amjad A, Ibrar K, M. Asghar, Momena A, M. Waqas, Farman U, Gul S. Molecular epidemiology of antibiotic resistant genes and potent inhibitors against TEM, CTX-M-14, CTX-M-15, and SHV-1 proteins of *E. coli* in district Peshawar, Pakistan. *Saudi J of Biological Sci.*. 28(11):6568-6581. **2021**.
12. M Asghar, AA Khattak, S Azam, N Rehman, I Khan, Ge Sehra, A Farid. Bacterial profile and antimicrobial susceptibility pattern of aerobic vaginal pathogens in gynae patients visiting to Khyber Teaching Hospital Peshawar. *J. of Gandhara Medical and Dental Science* . 8 (4): 48-54. **2021**.
13. Ibrar K, Mamoon J, Rameen N, Akhtar N, Sadiq A, Inam U, Farhan A. Green synthesis, characterization and biological evaluation of zinc nanoparticles from flower extract of *Brassica Oleracea Italica* . *Pak J of Botany* . 53(1): 281-286. **2021**.
14. Nazish K, Ibrar K, Sadiq A, Farhan A, Hamid AK, Asma S, Midrar U. Potential cytotoxic and mutagenic effect of *Pinus wallichiana*, *Daphne oleiodes* and *Bidens chinensis*. *Saudi J of Biological Sci.*. 28(8):4793-4799. **2021**.
15. Zermine Z, Sadiq A, Noor R, Ibrar K, Sumera A, Gul S, Anhar U, Muhammad A. Phenotypic and molecular characterization of virulence factors of extra-intestinal pathogenic *E. coli* isolated from patients of Peshawar, Pakistan. *Pak J Pharm. Sciences*. 34(1): 085-094. **2021**.
16. Laleena M, Ibrar K, Han SY, Suji K, Hong TP, Bashir A, Sadiq A. Identification and characterization of low density polyethylene degrading bacteria isolated from soil of waste disposal sites. *Environ. Eng. Res*. 26(3): 200167. **2021**.
17. Noor R, Sadiq A, Amjad A , Ibrar K, Muhammad A , Muhammad W, Farman U, Zermine Z, Gul S, Muhammad A. Designing of potent inhibitors for metallo-beta-lactamases producing *E. coli* in molecular specification hereto. *Pak J Pharm. Sciences*. 33(6):2739-2750. **2020**.
18. Nazish K, Ibrar K, Akhtar N, Sadiq A, Inam U, Farhan A, Hamid A. *Pinus wallichiana* synthesized silver nanoparticles as biomedical agents: In-vitro and In-vivo approach. *Green Chem. Letters and Review* . 13:2, 69-82.**2020**.
19. Farhan U, Ibrar K, Sajjad A, Sadiq A, Shah F, Hashir M. Mutational Analysis of TYR Gene Causing Oculocutaneous Albinism in Families from District Peshawar. *Int J Hum Genet*, . 19(4): 170-178 **2019**.
20. Saif UK, Bashir A, Ibrar K, Shumaila R, Sadiq A, Irfan U. Optimization of Growth Conditions for the Maximum Production of Secondary Metabolites from *Trichoderma harzianum* and their Biological Activities. *Int. J. of Pharmacology*. 15(3): 351-360, **2019**.
21. Abdus S, Muhammad A, Muhammad N, Noor R, Naheed A, Sadiq A, Resham A, Ibrar K, Farman U. Identification of pathogenic bacteria isolated from tissues, bones infections and their antibiotic susceptibility pattern at Khyber Teaching Hospital, Peshawar. *Pak J Surg*. 35(1): 21-25, **2019**.
22. Sana FA , Ibrar K , Abdul W, Sadiq A , Noor R, Muhammad W, Kashif B, Asaf AK. Pathogens constancy, harbinger of nosocomial infection cum identification of resistant genes and drug design-

ing . *Computational Biology and Chemistry*. 74: 347-359, **2018**.

23. Nazish, Ibrar K, Khalid K, Sadiq A, Ikhwan A , Inam U. An insight into in-vitro and in-vivo pharmacological activities of *P. wallichiana*. *Pakistan Journal of Botany*. 50(4): 1487-1497, **2018**.
24. Ibrar k, Bashir A, Sadiq A, Fida, Nazish, Noor R. Pharmacological activities of *Justicia adhatoda*. *Pak J Pharm. Sciences*. 31(2): 371-377, **2018**.
25. Noor R, Muhammad B, Bashir A, Sadiq A, Ibrar K, Azam H, Zarmina Z. Prevalence of Hepatitis C Virus and its risk factors in blood donors in district Peshawar. *Pak J Pharm. Sciences*. 31(1): 083-087, **2018**.
26. Ibrar K, Naveed S, Bashir A, Sadiq A, Noor R. Identification and Antimicrobial Susceptibility Profile of Bacterial Pathogens Isolated From Wound Infections in a Teaching Hospital, Peshawar, Pakistan. *Advancement in life sciences* . 5(1): 08-12, **2017**.
27. Aamir A, Ibrar k, Sadiq A, Shaista M, Bashir A. Comparative antimicrobial, phytotoxic and haemagglutination potential of *E. japonica* leaves extract and its Zinc nanoparticles. *Pakistan Journal of Botany*. 49(5): 1917-1924, **2017**.
28. Bashir A, Muhammad R, Sadiq A, Abdur R, Shumaila B. Toxicity, analgesic and sedative potential of crude extract of soil borne phytopathogenic fungi *Aspergillus flavus*. *Advancement in life sciences*. 4(1): 14-21, **2017**.
29. Bashir A, Muhammad R, Abdur R, Muslim R, Sadiq A, Shumaila B, Joseph M, Akos C, Diana S. Isolation and structure elucidation, molecular docking studies of sclerotiumol from soil borne Fungi *S. rolfsii* and their reversal of MDR in mouse lymphoma cells. *Asian Pacific J of Cancer Prevention*. 17: 2083-2087. **2016**.
30. Sadiq A, Shahab MS, Faisal Z, Bashir A, Ibrar K, Imran K. Antibacterial, antifungal, phytotoxic, antioxidant and hemagglutination activities of organic fractions of *Arisaema tortuosum*. *Pak J Pharm. Sciences*. 29 (3): 991-997. **2016**.
31. Bashir A, Muhammad R, Sadiq A, Abdur R, Shumaila B, Jamshaid A. In vitro Antifungal and Phytotoxic Study of Metabolites Extracted from *Aspergillus flavus*. *Amer-Eurasia J. Agri. & Env. Sci*. 316 (6): 1196-1199. **2016**.
32. Bashir A, Nabia H, Gulshan A, Sadiq A, Shumaila B, Ibrar K . Antibacterial activity of crude MeOH extract and various fractions of *V. agnus castus* & *M. africana* against clinical isolates of MRSA. *Pak J Pharm. Sciences*. 29 (6): 1977-1983. **2016**.
33. Bashir A, Farah S, Shumaila B, Ibrar K, Sadiq A. Green synthesis, characterization & biological evaluation of AgNPS using *A. americana*, *M. spicata* & *M. indica* aqueous leaves extract. *IET-Nano Biotechnology*. PP 1-7, **2016**.
34. Bashir A, Nabia H, Shumaila B, Sadiq A, Ibrar K, Sahar N. Comparative analysis of the biological activities of bioinspired gold nanoparticles of *P. emblica* fruit & β - *vulgaris* bagasse with crude extracts. *Pak J of Botany*. 47(SI): 139-146, **2015**.
35. Bashir A, Saima N, Sadiq A, Ibrar K, Shumaila B, Fida H. Antimicrobial, phytotoxic, haemagglutination, insecticidal & antioxidant activities of the fruits of *S. saligna*. *Pak J of Botany*. 47(SI): 313-319. **2016**.
36. Amina R, Shumaila B, Khanzadi FK, Bashir A, Ibrar K, Sadiq A. Antifungal, antibacterial, phytotoxic & insecticidal activities of *N. sativa* seeds. *Asian J of Chemistry* . 27(12): 4591-4594, **2015**.
37. Ibrar K, Haroon A, Bashir A, Sadiq A. Antiglycation and anti-oxidation properties of *B. lyceum* & *Terminalia chebula*: possible role in curing Diabetes and slowing aging. *Pak J of Botany*. 46(4): 1469-1471, **2014**.
38. Sadiq A, Zeeshan K, Bashir A, Ibrar K, Javid A. Production of single cell protein from orange peels using *Aspergillus niger* & *Saccharomyces cerevisiae*. *Global J. Biotechnol & Biochemistry*. 9(1): 14-18, **2014**.
39. Sadiq A, Salman S, Farah S, Sajjad F, Hamayun K, Ziaullah. Pharmacological evaluation from leaves

- extracts of *Trigonella foenum-graecum*. *Int J of Res in App, Nat. & Social Sci* . 2(4): 61-66, **2014**.
40. Ibrar K, Haroon A, Nasir A, Bashir A, Sadiq A, Fida H. Screening of *Fumaria indica* for antibacterial, antifungal, Phytotoxic & haemagglutination activities. *Int J of Current Biotech*. 1(9): 13-16, **2013**.
 41. Shakeel M, Sadiq A. Cytological & morphological characterization of selected synthetic hexaploid wheats derived from tetraploid durum & diploid *A. tauschii*. *J Med Plant Research*. 326: 3228-3232, **2012**.
 42. B Ahmad, N Munir, S Bashir, Sadiq A, I Khan, M Ayub. Biological screening of *Hedera nepalensis*. *J Med Plant Research*. 6 (39): 5250-5257, **2012**.
 43. Shakeel M, Sadiq A. Microsatellite based investigation of genetic diversity in 24 Synthetic wheats providing germplasms for wheat improvement. *African J of Biotechnology*. 11: 13627-13632. , **2012**.
 44. Bashir A, Khan I, Sadiq A, Bashir S. Chemical composition & antifungal, phytotoxic, brine shrimp cytotoxicity, insecticidal & antibacterial activities of the essential oils of *A. modesta*. *J Med Plant Research*. 6(31): 4653-4659, **2012**.
 45. Sadiq A, Shumaila B, Bashir A. Anti-spasmodic action of crude methanolic extract of the aerial parts of *V. agnus castus*. *J Med Plant Research*. 6(3): 461-464, **2012**.
 46. Bashir A, Sajid A, Sadiq A, Shumaila B, Ijaz A. Response rates of standard interferon therapy in chronic HCV patients of KPK. *Virology J*. 9: 18, **2012**.
 47. B Ahmad, N Ali, Sadiq A, S Bashir. Blood pressure lowering effect of *Tylophora hirsuta* Wall. *African J of Biotechnology*. 11 (12): 3009-3013, **2012**.
 48. G Uddin, RA Waliullah, A Rauf, BS Siddiqui, TU Rehman, M Ali, Sadiq A. Phytochemical screening & antimicrobial activity of *Cornus microphylla* Wall, ex Roxb. *Middle-East J. Sci. Res*. 9 (4), 516-519, **2011**.
 49. Waliullah, Ghias U, Rauf A, Bina SS, Taj UR, Sadiq A. Chemical constituents & biological screening of *Grewia optiva* Drummond ex Burret whole Plant. *Ameri. Eurasia J. Agri & Env. Sci.*. 11 (4): 542-546, **2011**.
 50. Bashir A, Ghani H, Shumaila B, Sadiq A, Naseem B. The status of trace elements in Lymphoma and Esophageal cancer patients: A case study. *African J of Biotechnology*. 10(84): 19645-19649, **2011**.
 51. Bashir A, Khan I, Shumaila B, Sadiq A, Ali N. The antifungal, cytotoxic, antitermite & insecticidal activities of *Zizyphus jujube*. *Pak J Pharma sciences*. 24(4): 489-493, **2011**.
 52. Bashir A, Khan I, Shumaila B, Sadiq A, Hussain F, Jamshaid A. Screening of *Acacia modesta* for haemagglutination, antibacterial, phytotoxic & Insecticidal activities. *J. Med Plant Research*. 5(14): 3090-3096, **2011**.
 53. Bashir A, Khan I, Shumaila B, Sadiq A, Jamshaid A, Ali N. Screening of *Acacia modesta* for antifungal, anti-termite, anti-oxidant & brine shrimp cytotoxic activities. 5(15): 3380-3386. 8(19): 5084-5087, **2011**.
 54. Bashir A, S Azam, Shumaila B, Achyut A, Hussain F. Anti-inflammatory activity & a new compound isolated from aerial parts of *M. Africana*. *African J of Biotechnology*. 10(42): 8465 - 8470, **2011**.
 55. Sadiq A, Shumaila B, Bashir A. Anti-spasmodic action of crude methanolic extract and a new compound isolated from the aerial parts of *M. Africana*. *BMC Comp Alt medicine*. 11: 55, **2011**.
 56. Sajid A, Ijaz A, Sadiq A, Bashir A. Frequency Distribution of HCV genotypes among chronic Hepatitis C patients of Khyber Pakhtunkhwa. *BMC Virology J*. 8(1): 193, **2011**.
 57. Bashir A, Khan I, Shumaila B, Sadiq A, Hussain F. Screening of *Z. jujuba* for antibacterial, phytotoxic & haemagglutination activities. *African J of Biotechnology*. 10(13): 2514- 2519, **2011**.
 58. Bashir A, Sadiq A, Shumaila B, Khan I, Niaz A, Iqbal MC. Phytotoxic, Antibacterial and Haemag-

- glutination activities of the aerial parts of *Myrsine africana* L. *African J of Biotechnology*. 10(1): 97-102, **2011**.
59. Bashir A, Sadiq A, Shumaila B, Niaz A, Iqbal MC. Insecticidal, brine shrimp cytotoxicity, antifungal& nitric oxide free radical scavenging activities of the aerial parts of *M. africana* L.. *African J of Biotechnology*. 10(8): 1448-1453, **2011**.
60. Bashir A, Sadiq A, Shumaila B, Khan I, Achyut A, Iqbal MC. Anti-inflammatory and enzyme inhibitory activities of pterocarpan& biological activities of aerial parts of *Vitex agnus castus*. *Biotechnology Journal* . 5(11): 1207-1215, **2010**.
61. Hussain F, Bashir A, Ishfaq H, Ghulam D, Parveen S, Sadiq A. Antibacterial, antifungal& insecticidal activities of selected medicinal plants of family Polygonaceae. *African J of Biotechnology*. 9(31): 5032-5036, **2010**
62. Bashir A, Sadiq A, Shumaila B, Achyut A, Iqbal MC. Biological activities of a new compound isolated from the aerial parts of *V. agnus castus*. *African J of Biotechnology* . 9(53): 9063-9069, **2010**.
63. Bashir A, Sadia, Sadiq A, Shumaila B, Khan I. Biological Screening of the aerial parts of the *S. saligna*.. *J Med Plant Research*. 4(22): 2404-2410, **2010**.
64. Bashir A, Niaz A, Shumaila B, Iqbal MC, Sadiq A, I Khan. Parasitocidal, antifungal& antibacterial activities of *Onosma griffithii* Vatke. *African J of Biotechnology*. 4(22): 2404-2410, **2009**.
65. Bashir A, Ali N, Shumaila B, Sadiq A, Manzoor A. Calcium channel blocking activity of the *Withania coagulans*. *African J of Pharmacy and Pharmacology* . 3(9): 439-442, **2009**.
66. Bashir A, Ali N, Shumaila B, Sadiq A. Cholinomimatic and Ca⁺ channel blocking activity of the aerial parts of *T. hirsuta* wall. *J of Chemical Soc. Pakistan* . 31(4): 647, **2009**.
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