

Azhar Rasul
Professor
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Biography: Prof. Dr. Azhar Rasul is a distinguished Professor of Zoology at Baba Guru Nanak University with an extensive academic and research portfolio. He earned his MSc and M.Phil from Bahauddin Zakariya University and completed his PhD from Northeast Normal University under a joint MOE–CSC fellowship. He has received prestigious international postdoctoral fellowships, including Japan Society for the Promotion of Science and Tokyo Biochemical Research Foundation. His research contributions include the discovery of novel anti-cancer and anti-metastasis agents targeting Topo-II, Tubulin, 6PGD, and ME-2.

He has published 150+ research papers with over 9100 citations and supervised numerous MPhil and PhD scholars. Dr. Rasul has secured multiple national and international research grants worth ~50 million PKR and established advanced research laboratories in Pakistan. He is currently serving as Chairperson of Zoology and Director ORIC at BGNU, contributing significantly to research, innovation, and commercialization.

He has been recognized with several prestigious awards, including the Young Scientist Award by International Union of Biochemistry and Molecular Biology in 2018 and the Mufti Mehmood Award by the Education and Science Committee. He also received the RPA Award from Government College University Faisalabad in 2023, the Prof. A.R. Shakoori Gold Medal from Zoological Society of Pakistan in 2024, and the Prof. Dr. Nazir Ahmed Gold Medal for Overall Academic Excellence from Government College

Education

PhD: Northeast Normal University, China 2008 – 2012

MPhil and MSc: Bahauddin Zakariya University (BZU), Pakistan 2002 – 2008

BSc: Punjab University (PU), Lahore, Pakistan, 2000 – 2002

Employment and Research Experiences (13+ Years)

July, 2024– Present– *Professor, Department of Zoology, Baba Guru Nanak University, NANKANA SAHIB*

April, 2017 – July, 2024 – *Assistant Professor; GC University, Faisalabad, Pakistan*

April, 2016 – March, 2017 – *TBRF Postdoctoral Fellow; RIKEN, Japan*

December, 2015 – March, 2016 – *Special Postdoctoral Researcher; RIKEN, Japan*

November, 2013 – November, 2015 – *JSPS Postdoctoral Fellow; RIKEN, Japan*

July, 2012 – November, 2013 – *Post-doctoral Researcher, Northeast Normal University/Chinese Academy of Sciences, Changchun, China*

Research Contributions and Achievements

<i>Research Articles Published</i>	142		
<i>Review Articles Published</i>	52		
<i>Books Authored</i>	02		
<i>Book Chapters Authored</i>	30		
<i>Books Edited</i>	02		
<i>Total Impact Factors</i>	~530		
<i>Average Impact Factor/Article</i>	3.0 (ranging from 0.5 to 7)		
<i>Total Number of Citations</i>	9200+		
<i>H-Index</i>	49		
<i>i10-Index</i>	153		
<i>Fellowships and Awards</i>	18		
<i>Research Projects Grants</i>	15		
<i>Total Funding of Research Projects</i>	~50 million PKRs		
<i>Conferences/Symposiums/ Forums</i>	25		
<i>Newspaper Columns</i>	07		
<i>Invited Talks</i>	20		
<i>MPhil Students Supervised</i>	29 (Completed)		
	02(In Progress)		
<i>PhD Students Supervised</i>	14 (Completed)		
	05 (In Progress)		
<i>MoUs Signed with International Universities</i>	03		
<i>Patents</i>	04	Patent Awarded	02
		Patent Filed	02

Technical Skills and Competencies

Cell Culture (2D and 3D); High Through Screening; Flow cytometry (analysis of apoptosis, MMP, ROS, and cell cycle); In Vitro Assays; Western Blotting; Co-Immunoprecipitation; Transient transfection; Transformation; Plasmid Purification; Immunostaining; Reporter assays; Primer designing; Target identification techniques: DARTS, Cellular Thermal Shift Assay (CESTA) and affinity chromatography; Protein expression and purification; Adobphotoshop; SPSS; End-Note.

Achievements

- 1) Discovery of Topoisomerase II (Topo-II) inhibitor as an anti-cancer agent
- 2) Discovery of novel 6PGD inhibitors
- 3) Discovery and development of Tubulin inhibitor as antineoplastic agent
- 4) Discovery of Malic Enzymes 2 (ME-2) inhibitors as non-cytotoxic anti-metastasis agents

Research Interests:

- 1) Cancer stem cells, tumor metabolism, and tumor hypoxia
- 2) Natural product-based therapeutics and bioactive compound libraries
- 3) Green extraction methodologies for bioactive compounds
- 4) Human and mammalian cell culture, diagnostics, and translational research
- 5) Interdisciplinary approaches to tumor biomarkers and cancer-related health disparities

List of selected publications

Total Publications: 194;

Total Impact Factor: ~530;

Total Citations:9300

H-Index: 49;

i10-Index: 154

1. Iqra Sarfraz, **Azhar Rasul***, Ghulam Hussain, Syed Makhdoom Hussain, Farhat Jabeen, Zeliha Selamoglu, Muhammad Ali, Malic Enzyme 2 as a Potential Therapeutic Drug Target for Cancer, IUBMB Life, IF: 3.09, **2018**; 70(11):1076-1083. (***As a corresponding Author**).
2. Iqra Sarfraz, **Azhar Rasul***, Ghulam Hussain, Muhammad Ajmal Shah, Ameer Fawad Zahoor, Muhammad Asrar, Zeliha Selamoglu, Xin-Ying Ji, Şevki Adem, Satyajit D. Sarker, 6-phosphogluconate dehydrogenase fuels multiple aspects of cancer cells: from cancer initiation to metastasis and chemoresistance. **2020**, doi: 10.1002/biof.1624. Biofactors, IF: 3.598. (***As a corresponding Author**).
3. Gul Bushra Khan, Muhammad Qasim, **Azhar Rasul**, Usman Ali Ashfaq and Abdullah M. Alnuqaydan. Identification of Lignan Compounds as New 6-Phosphogluconate Dehydrogenase Inhibitors for Lung Cancer, Metabolite; IF: 5.581, **2022**.
4. Iqra Sarfraz, **Azhar Rasul***, Farhat Jabeen, Tayabba Sultana and Sevki Adem. Identification of Natural Compounds as Inhibitors of Pyruvate Kinase M2 for Cancer Treatment, Molecules; IF: 4.927, **2022** (***As a corresponding Author**).
5. Ayesha Sadiqa, **Azhar Rasul***, Mudassir Hassan, Salma Sultana, and Farhat Jabeen, Identification of novel natural Inhibitors to human 3-phosphoglycerate dehydrogenase (PHGDH) for cancer treatment, Molecules; IF: 4.927, **2022**.
6. Rabia Zara, **Azhar Rasul***, Tayyaba Sultana, Farhat Jabeen, Zeliha Selamoglu, Identification of *Macrolepiota procera* extract as a novel G6PD inhibitor for the treatment of lung cancer, *Saudi Journal of Biological Sciences* IF:4.219, **2022**,; DOI: 10.1016/j.sjbs.2022.02.018 (***As a corresponding Author**).
7. Mudassir Hassan, **Azhar Rasul***, Muhammad Ajmal Shah, Farhat Jabeen, and Ayesha Sadiqa. Effect of PENN-DIABEX, A Novel Polyherbal Formulation, in High Fat Diet Streptozotocin-Induced Diabetic Rats, Saudi Journal of Biological Sciences; IF: 4.4, 2023 (***As a corresponding Author**).

Patents

Sr. No	Patent	Patent Number	Patent Filing Date	Patent Awarding Date
1	Green Preparation of Berberine Rich Extracts and Bioequivalent Studies to be Used as a Phytopharmaceutical Alternative of Commercially Available Berberine. Dr. Muhammad Ajmal Shah, Iram Naz, Dr. Muhammad Shareef Masoud, Dr. Pharkphoom Panichayupakaranant, Dr. Zunaira Chaudhry and Dr. Azhar Rasul .	626/2021	27/08/2021	19/09/2025
2	A novel polyherbal formulation (PENN-DIABEX) for the treatment of diabetes mellitus. Mudassir Hassan, Dr. Azhar Rasul* , Dr. Muhammad Ajmal Shah, Prof. Dr. Farhat Jabeen and Ayesha Sadiqa.	506/2023	03/08/2023	--
3	"Polyherbal Nanomaterial-Based Wound Dressing for Enhanced Healing and Infection Control." Azhar Rasul , Mudassir Hassan, Ayesha Sadiqa, and Saba Riaz Lecturer.	111/2025	20/02/2025	--
4	A Polyherbal Oral Formulation, Arthitecl, for Treatment of Rheumatoid Arthritis. Dr. Ejaz Basheer, Prof. Dr. Iqbal Azhar. Prof. Dr. Shazia Anwar Bukhari, Dr. Azhar Rasul and Dr. Ali Sharif (Pakistan).	480/2025	10/07/2025	--

Administrative Duties

Sr. No	Administrative Duty	Date
1	Member of the Committee to Propose Amendments to Baba Guru Nanak University Nankana Sahib Employee.	January 28, 2026
2	Director ORIC, BGNU	December 3, 2015
3	Member of Board of Study, BGNU	March 20, 2025
4	Focal Person of All Punjab Universities Innovations Expo 2025	February 27, 2025
5	Director ORIC, BGNU	February 3, 2025
6	International Visiting Scholar, Covenant University	November 12, 2024
7	Co-opted Member of Technical Committee for Procurement, BGNU	September 16, 2024
8	Secretary of ORIC Steering Committee, BGNU	August 29, 2024
9	Member of Appellate Body for Appeals against the decision of Inquiry Committee	August 19, 2024
10	Member of Discipline Committee, BGNU	August 8, 2024
11	Director ORIC, BGNU	August 1, 2024
12	Convener of Inspection Committee, BGNU	July 25, 2024
13	Chairperson of Department of Zoology, BGNU	July 22, 2024
14	Member of Environmental Health Safety and Social Safeguard Policy, Government College University, Faisalabad	June 1, 2022
15	Manager of Innovation and Commercialization, ORIC GCUF	January 5, 2022
16	Member of Canteen Committee (New Campus) GCUF	December 3, 2021
17	Coordinator of QEC for Department of Physics and Zoology, GCUF	October 22, 2021
18	Manager of Innovation and Commercialization, ORIC GCUF	June 11, 2021
19	Member of International Foreign Faculty Adjunct/Vising Professor, GCUF	March 17, 2021
20	Member of Chemical Purchase Committee, GCUF	March 1, 2021

List of Research Projects/Grants as Principal Investigator

Total Number of Grants: 15

Awarded as a PI: 11

Awarded as a Co-PI: 04

Total Funding: ~50 Million PKRs

Sr.No	Project Title	Duration	Total Amount of Grant	Funding Agency	Present Status
Grants Awarded as a PI					
1	Targeting NF- κ B and STAT3 by small molecules	November 28 th , 2013 – November 27 th 2015	3.0 million JPY	Japan Society for Promotion of Science (JSPS), Tokyo Japan	Completed
2	Targeting cancer cell metabolism by small molecules	April 1 st 2016 – March 31 st 2017	3.0 million JPY	Tokyo Biochemical Research Foundation (TBRF), Tokyo Japan	Completed
3	Development of Potent and Selective Tumor Glycolysis Inhibitors from Natural Products as Lead Structures.	March 8 th , 2017- To date	600,000JPY/570,000PKRs	The Nagai Foundation Tokyo, Japan- Grant Award_NFT-R4	Completed
4	Identification and Characterization of Tumor-Stromal Cell Interactions Modulators – A Promising Novel Therapeutic Approach.	December 19 th 2018 – To date	8000US\$/880,000PKRs	TWAS-COMSTECH Research-Grant Award_17180RG/PH/AS_C-FR3240300069	Completed
5	Targeting the metabolic reprogramming of cancer cells by small molecule-mediated inhibition of Malic Enzymes 2 (ME2).	March 20 th 2018 – To date	400,000JPY/413,000PKRs	The Nagai Foundation Tokyo, Japan-Grant Award_NFT-R4-2018	Completed
6	Identification and characterization of cancer stem cells and cancer metabolism reprogramming inhibitors from natural products as lead structures	June 12 th 2018 – To date	3.9 Millions PKRs	Higher Education Commission (HEC) under National University Research Program 8381/Punjab/NRPU/R&D/HEC/2017	Completed
7	Development of potent and selective tumor stromal cell interaction modulators from natural products as lead structures	June 12 th 2018 – To date	5.4 Millions PKRs	Higher Education Commission (HEC) under National University Research Program 8382/Punjab/NRPU/R&D/HEC/2017	Completed
8	Determining the mechanism of action of a novel human 6 phosphogluconate dehydrogenase (h6PGD) specific inhibitor that kills chemo-resistant cancer cells	November 14 th 2018 – To date	10000US\$	Head of ICPSR – ISESCO, Avenue des F.A.R – P O Box 2275 – Code 10104, Hay, Ryad, Rabat, Kingdom of Morocco	Completed
9	Targeting the Energy Metabolism with Dietary Nutrients for Cancer Treatment	February 26 th 2019 – To date	1,425,000 PKR	Higher Education Commission (HEC) under Pak-Turk Researchers Mobility Grant Program (Phase II) – 2017	Completed
10	Development of herbal supplements for diabetes and low-cost nanomaterial-based wound dresser using green technology for diabetic foot ulcers	August 2021 - To date	6,500,000/- PKRs	Punjab Higher Education Commission	In progress
11	Development and lead optimization of novel ME2 and 6PGD inhibitors that halt fibroblast accelerated migration of cancer cells	January, 2023- To date	9,990,000 PKRs	Pakistan Science Foundation	In progress
Grants Awarded as a Co-PI					
12	Novel Therapeutic Approach of Capped Magnetic Nanoparticles for Cancer Treatment via Hyperthermia Therapy	January, 2023- To date	4.8 Million	Pakistan Science Foundation	In progress
13	Screening of SFRP4 Inhibitor as Potential Medicine for the Treatment of Type 2 Diabetes	2017	4895780/- PKRs	Higher Education Commission	
14	Identification and Characterization of Plant Pathogen Interactions (PPI) Inhibitors from Natural Products as Lead Structure	April, 2022	3,559,500/- PKRs	Higher Education Commission (HEC) under National University Research Program	In progress
15	Transforming Fruit Waste Biomass into Health Dietary Supplements for Cancer Treatment	December, 2020	1,918,933/- PKRs	International Foundation for Science	In progress

References are available upon request