CONTACT DETAIL

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ACADEMIC REFEREES

Prof. Asad U Khan, PhD
Professor & Director
Former Cordinator IBU
AMU, Aligarh

Prof. Medhat Askat, MD, PhD, MSHPE, FRSCPath
Vice President for Clinical Affairs & Professor of Immunology
Qatar University, Qatar

Prof. Frederic J Reu, MD
VP Early Clinical Development at Deciphera Pharmaceuticals,
PI: Cleveland Clinic, USA

Dr. Mohd Adil, PhD
Scientist at MicroSintesis Inc.
PEI, Canada

Country Visited/ Residency
United States
Canada
Netherlands
Saudi Arabia

SHAHPER NAZEER KHAN- MS, MPhil, PhD

Associate Professor, Bioscience, Integral University
Dy Director, Int. Centre of Excellence for Interdisciplinary Research, Integral University

Working Experience

- Cleveland Clinic, **USA** (Top 2nd in World Ranking)
- University of Manitoba, **Canada**
- Aligarh Muslim University, **India**

Total 14 years of research cum teaching experience

Scientific profiles

Web of Science ID: KHD-2316-2024; **H-index: 20**
Google Scholar: Shahper N Khan, MPhil, PhD - Google Scholar; **Citations- 2586**
Orcid ID: 0000-0002-3931-6702
Loop Network: Loop | Shahper Nazeer Khan (frontiersin.org)

Academic Positions & Qualifications

- Research Associate at **Med. Biochemistry**, U of Manitoba, Canada (2024)
- Senior Scientific Officer (CSIR Pool) & **Assistant Professor** Interdisciplinary Nanotechnology Centre, Aligarh Muslim University, India (2021)
- **Assistant Professor** at Interdisciplinary Biotechnology Unit, AMU, India (2017)
- **Postdoc Research Associate** at Cleveland Clinic, USA
  Transplantation & Surgery, HLA Typing Lab (Allogen), (2014)
- **Postdoctoral Fellow** at Cleveland Clinic, USA
  Translational Hematology and Oncology Research, (2009-2013)
- **PhD in Biotechnology** from Interdisciplinary Biotechnology Unit, Aligarh Muslim University (AMU), India. (2009)
  Topic: Interaction of anticancer drugs with eukaryotic transcription
- **MPhil in Biotechnology** from Interdisciplinary Biotechnology Unit, Aligarh Muslim University, India. (2005)
  Topic: Interaction of anesthetic supplements with human serum albumin.

KEY SKILLS

- Laboratory Management & Accreditation Compliance (ASHI Standards)
- Quality Assurance & Quality Control Implementation
- Advanced Techniques: Serology and Molecular Testing
- Regulatory Compliance & Safety Protocols
- **Research Techniques**: Chromatin Immunoprecipitation (ChIP), ATAC-seq, RNA-seq, qRT-PCR, Western blotting, mammalian cell culture, cytotoxic assays, DNA and RNA isolation, FACS, transient/stable transfection, fluorescent microscopy etc.
- **Epigenetic and post translational modification**
- **Tumor Metabolism**: Investigating metabolic pathways and therapeutic resistance mechanisms.
- Proven ability to manage and mentor multidisciplinary teams.
- Effective communication and collaboration in team-based environments.
- **Disease models**: xenografts mice models and cell lines

Honors and awards

- CSIR-**Pool Officer**, Govt of India
- **Early Career Research Award**, DST-SERB, Govt of India
- **Caregiver award**, Cleveland Clinic, **USA**
- **Young Scientist Award**, Dept. of Science & Technology, Govt of India
- Postdoctoral Research Award, **Department of Defense (DOD), USA**
- Felicitated by the university as '**Best Researcher Award'** of the University' in the felicitation function as celebration of the 59th republic day of India, AMU.
- Received **Best Paper** award in 'International conference of Applied Bioengineering' (iCAB), at Chennai, India.
- Chaired a session at 33rd National Conference of Association of Clinical Biochemists of India, Pune.
- Research article selected among the **best papers of the year** in a reputed journal of elsevier "POLYHEDRON".
- Worked as secretary of 'Great Lineage of Biotechnological Envirotech Society (GLOBES)'.
- Research article rated among the **most assessed paper** in journal of "Proteomics & Bioinformatics".
- Ranked 1st in Master's Program in Biotechnology

Editor of International Journals

- Executive Guest Editor at Current Drug Targets (2020-present) *Impact Factor-2.4*
- Associate Editor at Frontiers in Pharmacology (2018- 2020) *Impact Factor-4*
- Associate Editor at Frontiers in Microbiology (2017-present) *Impact Factor-3.8*
- Editor: Int. e-Journal of Biotechnology, (2016- present)
- Editorial Member: Modelling & Simulation in Biotechnology, (2016- present)
- Speciality Editor: Webmed Central (2012- present)
  Guest Editor: Current Drug Discovery Technologies, 2012

Certifications

1. XM-Flow- cytometry cross match for non-HLA antibodies by OlerupInc/Absorber
2. Conexio SBT Resolver and Assign 3.6+ workshop
3. Animal Handling Training, BRU Cleveland Clinic Foundation, USA (January 2010 to January 2011) and University of Manitoba, Canada (on going)
4. OSHA Laboratory Standard
5. Hazardous Waste and Emergency Procedures, Cleveland Clinic Foundation, USA (January 2009)
6. Biosafety Training, Cleveland Clinic Foundation, USA (January 2010 to January 2012) and University of Manitoba, Canada (2022)
7.

International Collaborators

1. Prof. Octavio Franco, Catholic University of Brasilia (UCB), Brazil.
2. Dr. Varun Dwivedi, PhD, Staff Scientist, Texas Biomedical Research Institute, San Antonio, Texas, USA.
3. Prof. Arunas Ramanavicius, University of Lithuania.

Member of the Board of Studies/Councils

- Member of Board of Studies, Int. Biotechnology Unit, AMU (2014 – 2019)
- Member, Curriculum Development Committee, Int. Biotechnology Unit, AMU (2014 – 2017)
- Member, Local Grievance Committee, Int. Biotechnology Unit, AMU (2016 – 2017)

Administrative positions

- Moderator, for MS Biotechnology examinations, IBU, AMU (Jan 2016-March 2017)
- Verifying Officer, Admissions at Int. Biotechnology Unit, AMU (2014-March 2017)
- Observer, DBT-JRF exam, Govt. of India (2016-18)
- Research Coordinator, Allogen labs., Cleveland Clinic Foundation, USA (2012-2015)
- Secretary, Great Lineage of Biotechnological Envirotech Society (GLOBES) (2003-2005)

Professional Membership

- American society of hematology (2010-2012)
- American society of histocompatibility & Immunogenetics (2013)

Professional Experience:

Research Associate at **Medical Biochemistry**, **University of Manitoba, Canada** (till 2024)

- Independently designed and executed complex research studies investigating epigenetic regulation in cancer resistance.
- Established advanced methodologies, including Chromatin Immunoprecipitation (ChIP), ATAC-seq, and NGS.
- Actively participated in lab meetings to interpret data and develop innovative methodologies.
- Collaborated with team members in weekly journal clubs, departmental seminars, and collaborative research meetings.
- Mentored and guided graduate and undergraduate students in experimental design and data analysis.
- Prepared drafts of research manuscripts and successfully presented findings at local and international conferences.

Senior Scientific Officer (CSIR Pool) & **Assistant Professor** Interdisciplinary Nanotechnology Centre & Interdisciplinary Biotechnology Unit, **AMU**, India (till 2021)

- Led a research program on nanotechnology-assisted therapeutic interventions for drug resistance in cancer.
- Studied the interplay between cellular pathways and nanoparticles in modulating transcription factors and gene regulation.
- Directed research on therapeutic resistance mechanisms in cancer, emphasizing nanotechnology-based drug delivery.
- Utilized bioinformatics tools to analyze large transcriptomic datasets, identifying novel targets in tumor microenvironments.
- Regularly reviewed scientific literature to incorporate the latest findings into ongoing projects.
- Mentored graduate students and supervised interdisciplinary projects.
- Published findings on tumor suppressor reactivation and advanced delivery systems.

Postdoc & Project Coordinator at **Cleveland Clinic**, **USA** (from 2009)
(Translational Hematology and Oncology Research & Transplantation & Surgery, HLA Typing Lab)

- Pioneered high-throughput drug screening methods to identify epigenetic regulators in pancreatic cancer models.
- Established NGS and other molecular methods to be used in HLA typing for Transplantation and Surgery Lab. Investigated the role of tumor suppressor genes in therapeutic resistance using epigenetic and transcriptomic approaches.
- Lead high-impact studies on apoptosis, including EZH2-mediated leukemic stem cell renewal (Leukemia Nature, 2013).
- Conducted experiments utilizing flow cytometry, FACS, and fluorescence microscopy to elucidate cell death pathways.
- Developed a novel epigenetic drug screening assay (Plos One, 2012), facilitating high-throughput drug discovery.

Peer-reviewed Publications: *(Selected list)*

S. No.	Title of Journal, Year	Title of the Paper	First/Corresponding author (-) Co-author	Impact Factor
1	Biochemistry & Cell Biology, 2024	Protein Arginine Methltransferase1, a major regulator of biological processes	-	**3.7**
2	ACS Omega, 2024 (Under review)	Deep learning assisted high quality and high throughput screening to identify novel EZH2 Inhibitors	Corresponding	4.1
3	Frontiers in Immunology, 2023	Directional preference for glioblastoma cancer cell membrane encapsulated nanoparticle population: A probabilistic approach for cancer therapeutics	-	5.7
4	Emerging Materials Research, 2023	Modified-ZnO-mediated dye detoxification by a heterogeneous Fenton process	-	2.2
5	Molecules, 2021	Insights into Multifunctional Nanoparticle-Based Drug Delivery Systems for Glioblastoma Treatment	-	4.9
6	Bioinformation, 2021	Optimization of methods for peripheral blood mononuclear cells isolation and expansion of human gamma delta T cells	-	1.9
7	Bioinformation, 2021	Combinational therapeutics to combat cancer	-	1.9
8	Frontiers in Oncology, 2021	Biologically Active α-Amino Amide Analogs and γδ T Cells—A Unique Anticancer Approach for Leukemia	-	3.5
9	Seminars of Haematology, 2021 **(Clinical trial)**	DNA methylation inhibition in myeloma: Experience from a phase 1b study of low-dose continuous azacitidine in combination with lenalidomide and low-dose dexamethasone in relapsed or refractory multiple myeloma	-	5.0
10	Current Drug Targets, 2020	New framework for the discovery of PRC2 inhibitors: Epigenetic Drugs	Corresponding	3.4
11	Eur. J. Pharma Biopharma, 2020	Inhibition of multi-drug resistant Klebsiella pneumoniae: Nanoparticles induced photoinactivation in presence of efflux pump inhibitor	-	5.5
12	**S**urfaces and Interfaces, 2020	Exfoliation synthesis of graphene and optimization with alkali halides salts	-	6.2

13	Molecules, 2020	Glycation and Oxidative Stress Increase Autoantibodies in the Elderly	-	4.9
14	BBRC, 2019	Synergistic fungicidal activity with low doses of eugenol and amphotericin B against Candida albicans	First and Corresponding	3.5
15	Drug Discovery Today, 2018	Polycomb repressive complex 2 inhibitors: emerging epigenetic modulators	Corresponding	14.8
16	J. Pharm Biomedical Anal, 2018	Sulfaguanidine cocrystals: Synthesis, structural characterization and their antibacterial and hemolytic analysis	-	3.5
17	J. Molecular Recognition, 2018	Understanding the mode of binding mechanism of doripenem to human serum albumin: Spectroscopic and molecular docking approaches.	-	2.1
18	Frontiers in microbiology, 2017	Enhanced anti-candida activity of encapsulated cinnamaldehyde (CNMA): Novel antibiofilm action	First	4.0
19	PlosOne, 2017	Anthelmintic Potential of Thymoquinone and Curcumin on Fasciola gigantica	-	3.5
20	Advances in Biotech & Microbiol, 2016	Old wine in new bottles: Drug repurposing	First and Corresponding	0.8
21	International e-Journal Biotechnology, 2016	Tailoring Epigenomics by CRISPR: The Next Halt	First and Corresponding	0.5
22	Photochemistry & Photobiology, 2016	Targeted photoinactivation of multidrug resistant bacteria by Concanavalin-A (ConA) conjugated gold nanoparticles	-	4.0
23	Frontiers in Microbiology, 2015	Breaking the spell: New tools to knock down Multi-drug resistant 'Superbugs'	First	4.3
24	The Journal of Heart and Lung Transplantation, 2014	High Molecular Weight Serum Adiponectin Levels in Advanced Heart Failure Patients Before and After Continuous Flow Left Ventricular Assistance Device	-	7.9
25	Human Immunology, 2013	Complement fixing donor-specific antibodies identified by the c1q assay in combined liver-kidney transplants with AMR	-	**3.1**
26	Leukemia, 2013	Multiple mechanisms deregulate EZH2 and histone H3 lysine 27 epigenetic changes in myeloid malignancies	First	11.2
27	Journal of Immunol, 2013	Myeloma Is Characterized by Stage-Specific Alterations in DNA Methylation That Occur Early during Myelomagenesis	-	5.2
28	PlosOne, 2012	Hypotonic Conditions Allow Differentiation of Chromatin States during Thermal Cycling	-	3.5

29	Blood, 2012	Very Low to Low Doses of Continuous Azacitidine in Combination with Standard Doses of Lenalidomide and Low-Dose Dexamethasone (Rd) in Patients with Relapsed or Refractory Multiple Myeloma (RRMM): Interim Results of a Phase I/II Study	-	22.1
30	PlosOne, 2012	Inhibition of N-terminal lysines acetylation and transcription factor assembly by epirubicin induced deranged cell homeostasis	First	3.5
31	Blood, 2011	A Novel Small Molecule with Epigenetic Activity Prolongs Survival in a Mouse Model of Multiple Myeloma Refractory to Standard Drugs	-	22.1
32	Bioinformation, 2011	Proteomic approach for exploring biofilm in Streptococcus mutans	-	1.9
33	Cell Biochem Biophys, 2011	Mitoxantrone Induced Impediment of Histone Acetylation and Structural Flexibility of the Protein	First	1.8
34	Spectrochim Acta A Mol Biomol Spectrosc, 2011	Synthesis and spectroscopic studies on the Schiff base ligand derived from condensation of 2-furaldehyde and 3,3'-diaminobenzidene, L and its complexes with Co(II), Ni(II), Cu(II) and Zn(II): comparative DNA binding studies of L and its Cu(II) and Zn(II) complexes	-	3.8
35	Clin Chim acta, 2010	Role of histone acetylation in cell physiology and diseases: An update.	First	2.5
36	Journal of Molecular Modeling, 2010	Molecular interactions between mitochondrial membrane proteins and the C-terminal domain of PB1-F2: an in silico approach	-	2.2
37	Biosci Rep, 2010	Effect of mitoxantrone on proliferation dynamics and cell cycle progression	First	3.8
38	Biosci Rep, 2010	Inhibition of transcription factor assembly and structural stability on mitoxantrone binding with DNA	First	3.8
39	Bone Marrow Transplant, 2010	Reduced-Intensity conditioning using fludarbine with either antithymocyte globulin and BU or Low-Dose TBI allowing allogeneic hematopoietic SCT.	-	5.8
40	Spectrochim Acta A Mol Biomol Spectrosc, 2009	Synthesis and spectral characterization of 14- and 16-membered tetraazamacrocyclic Schiff base ligands and their transition metal complexes and a comparative study of interaction of calf thymus DNA with copper(II) complexes.	-	4.4
41	Spectrochim Acta A Mol Biomol Spectrosc, 2009	Template synthesis and physico-chemical characterization of 14-membered tetraimine macrocyclic complexes, [MLX(2)] [M=Co(II), Ni(II), Cu(II) and Zn(II)]. DNA binding study on [CoLCl(2)] complex.	-	4.4
42	Bioinformation, 2009	Phylogenetic analysis of surface proteins of novel H1N1 virus isolated from 2009 pandemic.	-	1.9
43	J of Applied Microbiology, 2009	Novel Effect of Plant Lectins on the Inhibition of Streptococcus mutans Biofilm Formation on Saliva-coated Surface	-	2.1

44	Acta Biochimica Polonica, 2008	Characterizing the interaction of anesthetic supplement thiopental with human serum albumin	First	1.2
45	J. Pharm Biomedical Anal, 2008	Characterization of doxorubicin binding site and drug induced alteration in the functionally important structural state of oxyhemoglobin	First	3.5
46	European Journal of Pharmaceutical Sciences, 2008	Interaction of mitoxantrone with human serum albumin: Spectroscopic and molecular modeling studies	First	5.2
47	Bioinformation, 2008	In silico approach to map the binding site of doxorubicin on hemoglobin	First	1.9
48	Proteomics & Bioinformatics, 2008	Computational simulation of mitoxantrone binding with Human Serum Albumin	First	0.5
49	Journal of Antimicrb & Chemother, 2008	Novel anti-adherence activity of Mulberry Leaves: Inhibition of Streptococcus mutans Biofilm by 1-Deoxynojirimycin isolated from Morus alba	-	5.2
50	Trans. Met. Chem, 2008	Template synthesis and physico-chemical studies on 14 membered hexaazino crocyclic complexes of Co (II, Ni(II), Co (II and Zn (II): A comparative approach in binding studies of DNA with Cu (II) and Ni (II) complex.	-	1.6
51	Asian Pac J Trop. Med, 2007	Ribozyme: an antiviral agent	-	3.4

Books/Monograph authored

S. No.	Book/ Monographs title & publisher	Year	ISSN/ ISBN NO.	Complete Book if chapter only (Specify title & page Nos.)	Whether you are the author/ Editor	No. of Co-author (s)/ Co- Editor(s)	International/ National Publisher specify
1	Surveying Antimicrobial Resistance, Approaches, Issues, and Challenges to overcome **(Ebook)**	**2017**	**-**	Combating multidrug resistance superbugs	Author	**02**	Frontiers
2	Epigenetic diseases	(Under Process, Initial stage)	-	-	Editor	02	Elsevier

Novel Sequence submitted to NCBI

Shahper N Khan *et al*. subtypes

Accession #: GQ414774.1, GQ449382.1, GQ449381.1, GQ449383.1, GQ449380.1, GQ414773.1

Research Funding/Grants:

1.Project Title: Evaluation of Nano-therapy against multidrug resistant (MDR) bacterial infections; **Principal Investigator**
Funding agency: CSIR
Cost (INR): 2400000
Duration: 3 years; 2019-2022

2. Project Title: 'Cancer cell membrane encapsulated HSA nanoparticles for enhanced delivery of Cisplatin against glioblastoma'; **International- Principal Investigator** (International grant with University of Hail, Saudi Arabia)
Funding agency: RDO, SA

3. Project Title: 'Design, Synthesis and Biological evaluation of EZH2 inhibitor for the Treatment of cancerous malignancies' (**Early Career Award**, DST-SERB, India); **Principal Investigator**
Funding agency: DST, India
Cost (Rs): 5000000
Duration: 3 years; 2016-19

4. Clinical Trial 2011-13: Low-Dose Azacitidine, Lenalidomide, and Low Dose Dexamethasone in Relapsed or Refractory Multiple Myeloma (USA); **Co-Investigator**

Thesis Supervision

(Name)	(Year)
Postdoc	
1. Danishuddin	2019
MS/MTech Students	
1. Akash Varshney	2020
2. Areeba Ahmad	2020
3. Abubakr Saddique	2019
4. Moin Khan	2019
5. Muaz Ahmad	2018
6. Mehboob Alam	2018
7. Amiruddin Hashmi	2017
8. Farheen Khan	2017
9. Ashima	2017
10. Muzzamil sharief Dar	2016
11. Nurul Hasan	2016

Workshops/ Symposium Organized

1. National Symposium 'New Facets of Biotechnology: from Genes to Proteins' at AMU (2014)
2. Workshop of 'Flow Cytometry and its Applications' at AMU (2015)
3. National Symposium 'Macromolecular Structure, Function, Interaction & Prediction' at AMU (2016)
4. National Symposium 'Current trends in Proteomics & Bioinformatics' at AMU (2017)

Conferences, Invited talks & workshop: *(Selected list)*

1. **Shahper N Khan, Jim Davie** Protein arginine methyltransferase (PRMT1) driven epigenetic dysregulation in mixed lineage leukemia (MLL) CancerCare Research Day, Manitoba **2023 (Oral)**.
2. **Shahper N Khan**, Microscopy, Optics Imaging and Analysis in Health Research. November 27 to December 1**, 2022**.
3. Medhat Askar, **Shahper Khan**, John Fung, Malek Kamoun *et al.* Complement fixing donor-specific antibodies identified by the C1q assay in combined liverkidney transplants with AMR. **(Poster Session) 39th American Society of Histocompatibility & Immunogenetics, 2013** Chicago, USA.
4. Frederic J Reu, **Shahper N Khan**, Reda Z Mahfouz, RM Dean, B Faiman, J Reed, MA Karam. Very Low to Low Doses of Continuous Azacitidine in Combination with Standard Doses of Lenalidomide and Low-Dose Dexamethasone (Rd) in Patients with Relapsed or Refractory Multiple Myeloma (RRMM): Interim Results of a Phase I/II Study. **Blood** (2012). **American Society of Hematology Annual Meeting 2012,** USA
5. Sergei Vatolin, **Shahper N Khan**, Yvonne Parker, Frederic J. Reu. A Novel Small Molecule with Epigenetic Activity Prolongs Survival in a Mouse Model of Multiple Myeloma Refractory to Standard Drugs **Blood** (2011), **American Society of Hematology Annual Meeting 2011,** USA
6. Hideki Makishima, **Shahper N Khan** *et al. EZH2* Is Either Mutated or Downregulated in Patients with Loss of Heterozygosity of Chromosome 7/7q and Leads to Epigenetic Dysregulation Via Histone H3K27. (**Oral Session**: Disordered Gene Expression in Hematologic Malignancy, including Disordered Epigenetic). **53nd American Society of Hematology Annual Meeting 2011,** USA
7. Sergei Vatolin, **Shahper N Khan** and Frederic J. Reu. A Novel PCR-Based Gene-Specific Chromatin Condensation Assay (**Poster Session**: Disordered Gene Expression in Hematologic Malignancy, including Disordered Epigenetic). **52nd American Society of Hematology Annual Meeting 2010,** USA
8. **Shahper N. Khan**, Barira Islam and Asad U. Khan "Investigating the interaction of general anesthetic propofol with DNA by optical spectroscopy" Proceedings at International Symposium on the Predictive, Preventive and Mechanistic Mutagenesis & XXXIII EMSI Annual Meeting, AMU, Aligarh (2008) **(Poster present'n)**
9. **Shahper N. Khan**, Barira Islam and Asad U. Khan. "Probing Midazolam Interaction with Human Serum Albumin and Its Effect on Structural State of Protein" Proceedings at 2nd International Conference on Perspectives in Vibrational Spectroscopy, Kerela. (2008) (**Oral present'n**)
10. **Shahper N. Khan**, Barira Islam and Asad U. Khan. "Characterizing the Interaction of Adriamycin with Hemoglobin" Proceedings at International Conference on "Free Radicals & Natural Products in Health and Seventh Annual Meeting of the Society of Free Radical Research India, Jaipur (2008). (**Poster present'n**)