

Dr. Abida Shehzadi

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Centre of Excellence in Molecular Biology
University of the Punjab, Lahore.

EDUCATION

- **PhD Molecular Biology (2022)** from Centre of Excellence in Molecular Biology
 - **PhD Research Project** complete in Forensic DNA Typing Research Lab entitled “A New PCR Multiplex Assay Development for the Simultaneous Detection of Autosomal, Y-Chromosomal and X-STR Loci”. PCD No: 28465
 - **Subjects Studied in PhD**
Advances in Biosafety of GMO’s; Advances in Stem Cell Research; Introduction to Biosafety levels; Practical Approaches to DNA Microarray; Plant Production and Protection.
- **MPhil Zoology (2010)** from Govt. College University Lahore Pakistan.
 - **MPhil Research Project** area was Immunoinformatics entitled “*In Silico* Study of Promiscuous MHC I and MHC II Biding Epitopes of H1N1 Viral Proteome of Asian Origin, their Visualization and Phylogenetic Analysis”.
 - **Subjects Studied in MPhil**
Advanced Molecular Biology, Immunology, Advanced Physiology, Advanced Laboratory Techniques in Zoology, Regulation of Body Functions, Biodiversity and Phylogenetic Relationship, Advanced Environmental Science, Limnology.
- **MSc Zoology (2007)** from Govt. College University Lahore Pakistan
 - **MSc Final Research Project** entitled “Elimination of excessive iron by *Terminalia chebula* in the Iron overloaded rabbits”.

PATENT

A research project has been filed for patent related to “Development of new 21-plex STR process for the simultaneous detection of autosomal, Y and X-Chromosomal markers”. The patent application No. 725/2020; filing date is 27/10/2020 with receipt no. 15976.

PUBLICATIONS

- Shafique, Muhammad, Namra Sajid, Yasir Aziz, Muhammad Afzal, Muhammad Shahzad, **Abida Shehzadi**, Saliha Bashir, Shakeela Daud, and Ahmad Ali Shahid. "Genetic data of 22 autosomal STR loci in Khyber-Pakhtunkhwa, Balochistan and Gilgit Baltistan population of Pakistan using PowerPlex® fusion system." *Legal Medicine* 59 (2022): 102129.
- Javed, Faqeeha, Muhammad Shafique, Dennis McNevin, Muhammad Usama Javed, **Abida Shehzadi**, and Ahmad Ali Shahid. "Empirical Evidence on Enhanced

- Mutation Rates of 19 RM-YSTRs for Differentiating Paternal Lineages." *Genes* 13, no. 6 (2022): 946.
- **Shehzadi, Abida**, Muhammad Shafique, and Ahmad Ali Shahid. "Haplotype Diversity of 17 Y Chromosomal STRs in Jat Population of Pakistan." *Pakistan Journal of Zoology* 54, no. 4 (2022): 1981.
 - Piracha, Bakhtawar Javed, Muhammad Shafique, Ahmad Ali Shahid, Amna Sajid, Faqeeha Javed Faqeeha Javed, **Abida Shehzadi** Abida Shehzadi, and Muhammad Shehzad. "Forensic Genetic Analysis of 11 Rapidly Mutating Y-STRs (RM-YSTRs) in Sindhi Population of Pakistan." *Lahore Garrison University Journal of Life Sciences* 4, no. 02 (2020): 96-122.
 - Javed, Faqeeha, Sumbal Sumbal, Muhammad Shafique, Ahmad Ali Shahid, **Abida Shahzadi**, Noshaba Rani, Hira Javid, Madeeha Javed, Noman Gillani, and Tayyab Husnain. "Male individualization using 12 rapidly mutating Y-STRs in Araecin ethnic group and shared paternal lineage of Pakistani population." *International Journal of Legal Medicine* 132, no. 6 (2018): 1621-1624.
 - **Shehzadi, Abida**, Farah Rauf Shakoori, and Abdul Rauf Shakoori. "Immunoinformatics study of promiscuous HLA binding antigenic nanomers of surface glycoproteins of Influenza A (H1N1) pdm09 of Asian origin." *Pakistan Journal of Zoology* 45, no. 3 (2013).
 - Afzal, Muhammad, Ahmad Ali Shahid, **Abida Shehzadi**, Shahid Nadeem, and Tayyab Husnain. "RDNAnalyzer: A tool for DNA secondary structure prediction and sequence analysis." *Bioinformatics* 8, no. 14 (2012): 687.
 - **Shehzadi, Abida**, Shahid Ur Rehman, and Tayyab Husnain. "Selection of epitope-based vaccine targets of HCV genotype 1 of Asian origin: a systematic in silico approach." *Bioinformatics* 8, no. 20 (2012): 957.
 - **Shehzadi, Abida**, and Muhammad Idrees. "Promiscuous prediction and conservancy analysis of CTL binding epitopes of HCV 3a viral proteome from Punjab Pakistan: an in silico approach." *Virology journal* 8, no. 1 (2011): 1-13.
 - **Shehzadi, Abida**, and Khalid Masood. "In Silico Study of Human Gap Junction Beta-2 Protein by Homology Modeling." *Genomics & Informatics* 8, no. 2 (2010): 70-75.
 - **Shehzadi A**, et al. 2010. "In silico study of Promiscuous MHC I & MHC II binding Peptides of HCV glycoprotein". *Proceedings of Bioinformatics Opening New Frontiers In Molecular Biology Research*. P: 24-50, 15 May 2010.
 - **Shehzadi A** and Azizullah .2009. Elimination of excessive iron by *Terminalia chebula* in the iron overloaded rabbits. *BIOLOGIA (PAKISTAN)*, 55 (1 & 2), 13-19 PK ISSN 0006-3096.

Abstract:

- **Shehzadi A** et al. 2011. Analysis of gp41 antigenic epitopes of HIV 1a: an *in silico* approach. Bifx Africa-India, Joint Virtual Conference 10-11 2011, Organized by Bioinformatics Organization. <http://mat.edu.bioinformatics.org/BIFX11/Bifx11-Booklet.pdf>
- **Shehzadi A** and Shakoori R F. *In Silico* Study of Promiscuous MHC I and MHC II Biding Epitopes of H1N1 Viral Proteome of Asian Origin, their Visualization and Phylogenetic Analysis" published in proceedings of 31st Zoological Society of Pakistan (International) held in University of Azad Jamu & Kashmir **Muzafabad** 19-21 April 2011.

JOB EXPERIENCE:

Bioinformatics skills:

Important Bioinformatics Skills include

- Molecular Visualization Software: RasMol, Cn3d, SwissPDB Viewer, Pymol, PMV, Chimera.
- Protein Modeling: LOMETS, MUSTER, WHATIF, SwissModel, I-TASSER, SOPMA
- Sequence searching and alignment tools: BLAST, FASTA, CLUSTALW, T-Coffee and MUSCLE, EMBOSS, Dotlet,
- Epitope prediction: ProPred , ProPred 1, BIMAS, SYFPEITHI, CTLPred, PEPVAC, netMHCpan
- Protein 3D Validation Tools: NIH MBI
- Phylogenetic analysis tools - ClustalW, Clustal X, PHYLIP, MEGA5 and Phylogeny.fr.
- Online databases and tools NCBI-Entrez, GenBank, EMBL databases, EMBL SRS, JemBOSS, ExPASy PIR Tools.
- Molecular Docking: Auto Dock, Z dock, Hex
- GeneMapper, Corel, Adobe Photoshop, Flash Player, EndNote.

Forensic DNA Typing Lab skills:

Sample collection and storage, stain card preparation, DNA Extraction, Gel Electrophoresis, DNA Quantification and Polymerase Chain Reaction, genotyping, etc.

TEACHING EXPERIENCE:

Delivered lectures and conducted labs of Bioinformatics to Post Graduate students in National Center of Excellence in Molecular biology 2009 to date.

- Biological Databases
- Pairwise alignment
- Multiple sequence alignment
- Phylogenetic Analysis
- Protein Modeling
- Epitope Prediction
- Vaccine designing

PRESENTATION:

- Presented a paper titled “A new PCR multiplex assay development for the simultaneous Development of Autosomal, Y-chromosomal and X-STR loci.” at International Pak Health Expo-CEMB Conference, 9 Dec, 2022.
- Presented a Forensic DNA Typing Lab Model at International Pak Health Expo-CEMB Conference, 9-10 Dec, 2022.
- Published in proceedings of 31st Zoological Congress of Zoology (International) held in University of Azad Jamu & Kashmir Muzafrabad 19-21 April 2011.
- Presented a paper titled “*In Silico* Study of Promiscuous MHC I and MHC II Biding Epitopes of H1N1 Viral Proteome of Asian Origin, their Visualization and Phylogenetic Analysis” published in proceedings of **31st Zoological Congress of Zoology** (International) held in University of Azad Jamu & Kashmir Muzafrabad 19-21 April 2011.
- Presented a poster titled “Promiscuous Prediction of Antigenic Epitopes of HCV Viral proteome of Pakistani origin: an Immunoinformatics Approach” at **1st Annual HCV Management Symposium, NUST Centre of Virology and Immunology**, 11 Feb 2011.

- Presented a paper titled “*In silico* study of promiscuous MHC I and MHC II binding epitopes of HCV 3a viral proteome from Punjab Pakistan and their conservancy analysis” published in Proceedings of 4th **AYRCOB Matrix Biopolis Singapore**, p 77, 1 Dec 2010.
- Presentation on “*In silico* study of promiscuous MHC-I & MHC-II binding peptides of HCV glycoprotein” at **International Symposium 2009** (Future trends in Molecular Biological Research & It’s Applications in Agriculture and Health) **CEMB Lahore**.
- Presented paper titled “*In silico* study of human gap junction beta-2 protein by homology modeling”, in **Annual Presentations** of Bioinformatics wing CEMB.
- Presented a paper titled “A comparative *In silico* study of Promiscuous MHC I binding Peptides of HCV glycoprotein” at University of Veterinary & Animal Science, Lahore-Pakistan, published in Proceedings of **Bioinformatics Opening New Frontiers In Molecular Biology Research**. P: 132-136, 15 May 2010.

PARTICIPATION:

- Participated in a lecture “Change your water, Change your life” by Ghayoor Abbas on Kangen water at 28 Nov 2022 at Centre of Excellence in Molecular Biology, University of the Punjab Lahore.
- Participated in International Conference on Plant Molecular Biology (ICPMB) “” held on 14-15 Dec 2022 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated in Enlightening Lecture by Mr. Orya Maqbool Jan, Jointly organized by Creative Club-CAMB and Journal Club-CEMB, University of the Punjab Lahore held on 7th Oct 2022 at Riazuddin Auditorium, Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated International Symposium on “Hands-on Training Workshop on Structural Bioinformatics Tools” held on 21-23 Feb 2022 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated as Oral Presenter at 4th International Symposium on “**Advances in Molecular Biology of Plants and Health Sciences**” held on 23-24 Dec 2021 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated as organizer at 4th International Symposium on “**Advances in Molecular Biology of Plants and Health Sciences**” held on Dec 2021 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Actively participated in one day International symposium on “**Development of CKC Technology**” held on 15 Dec 2020 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated in International Conference “**Recent Innovations in Molecular Sciences**” held on 6-8 Nov 2019 at University of the Punjab, Lahore, Pakistan.
- Participated as Oral Presenter at 2nd International Symposium on “**Advances in Molecular Biology of Plants and Health Sciences**” held on 21-23 Nov 2017 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated as organizer at 3rd International Symposium on “**Advances in Molecular Biology of Plants and Health Sciences**” held on 19-21 Dec 2018 at National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Participated as poster presenter at 6th “**Invention to Innovation Summit**” held on 8-9 Mar 2017 at University of the Punjab, Lahore, Pakistan.
- Participated in one day National workshop “**Publishing Your Research**” held on 2nd April 2011 in Beacon House National University, Lahore, Pakistan.

- Participated in Symposium on “**1st annual HCV Management Symposium 2011 at NUST** Center of Virology and Immunology” organized by NCVI and HEC 10-11 Feb 2011.
- Participated in workshop on “**The Conduct of Responsible Science**” organized by Forman Christian College in collaboration with International council for Life Sciences (ICLS) and COMSTAC from 31 Jan-01 Feb 2011.
- Participated in workshop on “**Citation and Referencing in Research**” hands on training using EndNote Software held organized by IRP and University of Lahore on 27th January 2011.
- Participated in training “**Research Methodologies using Statistical Techniques in Biological Sciences**” Organized by Department of Statistical & Computer Science, Faculty of life Sciences & Business management, university of Veterinary and Animal Sciences, Lahore, 2010.
- Participated in workshop on **CEMB Vision 2015 & Celebration IDB 2008 Award of Excellence in Science and Technology** Centre for Molecular biology, University of the Punjab, August 16, 2008. (Islamic development bank).
- Participated in International Symposium **Future trends in Molecular Biological Research & It's Applications in Agriculture and Health** at CEMB University of Punjab Pakistan March 2009.
- Participated in workshop on “**Ethical Issues related to work on Stem Cells**” 2009 CEMB University of Punjab Pakistan.
- Participated in **3rd Virtual Training Workshop on Bioinformatics** by Asian Bioinformatics Research and Education Network (ABREN).
- Participated **DGV webinar** hosted by the Ontario Genomics Institute (OGI) & The Centre for Applied Genomics (TCAG) 2009. <http://projects.tcag.ca/variation/>
- Participated in **International Training Course on Microarray technology for Gene Discovery and Expression** 2009.

Membership:

- Remained as **Editor of Biological Sciences** of National Academy of Young Scientists (NAYS) (<http://www.nays.com.pk/e-newsletter.htm>)
- Remained a **Supervisor Virtual Internship Program** titled “An Insilico Study of HLA binding peptides of gp120 HIV-1, subtype C” of *ISCB-RSG-Pakistan* (<http://www.iscb.org/>).

AWARD AND ACHIEVEMENTS:

- **Best Poster Presentation Award 2018**
Best poster presentation award at 7th Invention to Innovation Summit 2018 held in University of the Punjab, 7-8 March 2018.
- **Award of APBioNet Travel Fellowship 2010**
Award of APBioNet Travel Fellowship for oral presentation “*In silico* study of promiscuous MHC I and MHC II binding epitopes of HCV 3a viral proteome from Punjab Pakistan and their conservancy analysis” at 4th AYRCOB Singapore Dec 2010.
- **Award of Winning Debate Team at 4th AYRCOB Singapore 2010**
Scientific Award of winning debate team at 4th AYRCOB, Singapore 3 Dec 2010.
- **Invited presenter at 1st CBAS-SYMBio Conference 2010**
“*In silico* study of promiscuous MHC I and MHC II binding epitopes of HCV 3a viral proteome from Punjab Pakistan and their conservancy analysis” published in proceedings of at 1th CBAS-SYMBio Conference 2 Dec 2010.

- **Poster Presentation at 4th AYRCOB Singapore 2010**
Presented a poster titled “*In silico* study of promiscuous MHC I and MHC II binding epitopes of HCV 3a viral proteome from Punjab Pakistan and their conservancy analysis” at 4th AYRCOB Singapore 1 Dec 2010.
- **Certificate of Attendance 4th AYRCOB Singapore 2010**
Actively participated for Oral presentation, poster presentation and debate team at 4th AYRCOB and CBAS-SYMBio Conference Singapore.
- **National Internship Programmed 2010**
Participated as internee and get training in different sections of Department of Fisheries, Lahore Pakistan.
- **ABREN Bioinformatics Workshop 2009**
Participated 3rd virtual Training Workshop by Asian Bioinformatics Research & Education Network.Online Workshop (ABREN) by Asian Countries, www.abren.net/.
- **HEC Scholarship Award (2007)**
HEC Scholarship Award for Unemployed Graduates as Lecturer titled “Support to scientific talent” at Govt. College University Lahore (2007).
- **Poster Competition 2004**
Participated in Innovative Poster competition of Zoology in
Samanabad College for Women Lahore
- **Quiz Competition 2004**
Participated in Quiz Competition for Science in
Samanabad College for Women Lahore
Position = 1st
- **Science Exhibition Competition 2003**
Participated in Innovative Models Science Exhibition (Zoology) in
Samanabad College for Women Lahore
Position = 2st position

LANGUAGES

- English (Good in communication)
- Urdu (Used as our national language)
- Punjabi (My mother language)

COUNTRIES VISITED

- Singapore
- Kingdom of Saudi Arabia