

CURRICULUM VITAE

DR. MUHAMMAD FAROOQ SABAR

Professor of Biochemistry & Biotechnology

School of Biochemistry & Biotechnology,

University of the Punjab

Lahore

Former Incharge:

Genomics of Human Diseases Research Group & DNA Core Facility

Centre for Applied Molecular Biology

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HEC Approved PhD Supervisor: 18407

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Google Scholar: <https://scholar.google.com.pk/citations?user=J3kOzQ4AAAAJ&hl=en>

SALIENT ACADEMIC ACHIEVEMENTS

Total Publications:	84
W-Category Publications:	35
X-Category Publications:	17
Y-Category Publications:	30
Other Publications:	02
Total Impact Factor	>300
Citations	>1150
Gene Sequence Submissions in the Database:	210
PhDs Produced	05
PhDs Under Supervision	03
MPhil/MS Produced	44
MPhil/MS Under Supervision	06

ACADEMIC QUALIFICATION

Postdoctoral Fellow (Cancer Genomics)

2012

King Fahad National Centre of Children's Cancer, King Faisal Specialist Hospital & Research Centre, Al-Riyadh, Kingdom of Saudi Arabia

Ph.D (Molecular Biology)

2010

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

Thesis Title: Studies on the Physiological Effects of Different Form of Therapeutic Alpha Interferons

PROFESSIONAL, RESEARCH & TEACHING EXPERIENCE:

Professor of Biochemistry & Biotechnology

[May 2024—Contd.]

School of Biochemistry & Biotechnology, University of the Punjab, Lahore

Associate Professor/HoD DNA Core Facility

[January 2022 – May, 2024]

Centre for Applied Molecular Biology, University of the Punjab, Lahore

Assistant Professor/ Incharge CAMB (Acting)

[March 2021 – July 2021]

Centre for Applied Molecular Biology, University of the Punjab, Lahore

Assistant Professor/HoD DNA Core Facility

[July 2015 – January 2022] .

Centre for Applied Molecular Biology, University of the Punjab, Lahore

Postdoctoral Fellowship

[2011 – 2012]

King Faisal Specialist Hospital and Research Centre, Al Riyadh, Saudi Arabia. Cancer genomics, Thyroid cancer genetics, extensive cancer gene sequencing and mutation analysis.

PhD Scholar

[2004 – 2010]

Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore. Biopharmaceutical and therapeutics research. Synthesis, purification and chemical modification of therapeutic proteins. FPLC and HPLC of proteins.

Senior Research Officer/Assistant Professor/ HoD DNA Core Facility [2007 – 2015]

Centre for Applied Molecular Biology (CAMB), Ministry of Science & Technology, Govt of Pakistan. Postgraduate, M. Phil and Ph.D. coaching and research guidance to the students. Career counselling and International Scholarship recommendation. Head DNA Genomics and analysis department of CAMB.

Research Officer/HOD DNA Sequencing lab

[2000 – 2007]

Centre for Applied Molecular Biology (CAMB), Ministry of Science & Technology, Govt of Pakistan. Postgraduate, M. Phil and Ph.D. coaching and research guidance to the students. Established DNA Sequencing lab in CAMB. Head DNA analysis department of CAMB.

Assistant Research Officer

[1996 – 2000]

Centre for Applied Molecular Biology (CAMB), Ministry of Science & Technology, Govt of Pakistan. Established DNA primer Synthesis lab, Assistance in DNA Sequencing, tissue culturing, and enzyme assays etc. Helped MPhil and PHD students and researcher in their experiments.

MoUs

1. King Edward Medical University, Lahore
2. Breed Improvement department of Livestock department of Punjab
3. University of Hazara, Mansehra

Awards/Appreciations

- | | |
|--|------------------------------|
| 1. Research Incentive Award (PU) | 2016, 2017, 2018, 2019, 2020 |
| 2. Performance Evaluation Award (PU) | 2019-20 |
| 3. Performance Evaluation Award (PU) | 2018-19 |
| 4. Performance Evaluation Award (PU) | 2016-17 |
| 5. Performance Evaluation Award (PU) | 2015-16 |
| 6. Performance Evaluation Award (PU) | 2014-15, |
| 7. Productive Scientist of Pakistan (PCST) | 2017-18 |
| 8. Productive Scientist of Pakistan (PCST) | 2016-17 |

Academics:

1. Member DDPC, School of Biochemistry & Biotechnology, University of the Punjab, Lahore (2024-)
2. Member BoS, School of Biochemistry & Biotechnology, University of the Punjab, Lahore (2024-)
3. Member BoF, Faculty of Life Sciences, University of the Punjab, Lahore (2024-)
4. Coordinator PhD Molecular Biology and Forensic Sciences Studies (2022-2024.)
5. Coordinator MPhil Molecular Biology and Forensic Sciences Studies (2017-2022.)
6. Member Board of Studies at CAMB (2015-2024)
7. Prepared Applied Molecular Biology and Forensic Sciences curriculum for MPhil and PhD at CAMB
8. Member Departmental Doctoral Program Committee (DDPC) at CAMB (2015-2024)
9. Member BS, MS, MPhil and PhD Biochemistry and Molecular Biology curriculum review committee, University of Central Punjab (2017-20)
10. Teaching MS Biochemistry and Biotechnology courses on DNA Forensics and Biomolecules Analysis Techniques at SBB, PU (2024-)
11. Teaching BS Biochemistry and Biotechnology courses on Genomics, Enhancement of Writing Skills and Research Dissertation, Research Projects, Internship and Special Paper at SBB, PU (2024-)
12. Teaching MPhil and PhD courses on Nucleic Acid Sequencing, Genomics, Molecular Genetics, Molecular Biology Techniques and Forensic DNA analysis at CAMB (2015-2024)
13. Identified and published genomic variants associations with asthma in Pakistani population.
14. Published research on Chronic Myeloid Leukemia (CML) in international peer reviewed journals
15. Published research on hereditary hearing loss and vision impairment in international peer reviewed journals
16. Published research on population genetics in international peer reviewed journals
17. Postdoc on cancer genetics from King Faisal Specialist Hospital and Research Centre (KFSH&RC), KSA

18. Training of various trainees on DNA Sequencing and Genotyping and analysis from different departments of the government
19. Headed Genomics of Human Diseases Research Group of CAMB (2018-2024)
20. Headed DNA sequencing/genotyping group (2000-2024)

Commercial

21. **Commercialization of DNA Sequencing and genotyping** services in Pakistan
22. **Commercialization of DNA primers/oligos synthesis facility** within the country as well as abroad
23. Generated more than *120 million rupees* revenue for CAMB by providing the **Analysis of millions of DNA samples and DNA synthesis services** to researchers
24. Focal Person for CAMB **Incubation/Display Centre** (Commercialization) (2013-15)

Acknowledgements of Services:

25. Letter of appreciation from **Commandant Armed Forces Institute of Pathology (AFIP), MH, Rawalpindi** for training and solving their long standing issues regarding analysis of their forensic samples in their institute
26. Appreciation Letter from **Professor Dr. S. Riazuddin**, National Distinguished Professor and a prominent scientist of Pakistan
27. Rectification of issues in Genetic Analyzer of Faculty of Life Sciences at **BUIITEMS, Quetta**
28. Helped **UVAS, Lahore** in their DNA Sequencing facility issues.
29. Contributed in more than **1000 MPhil/PhD theses** from different universities of Pakistan
30. Provided **Technical help in DNA Sequencing and Genotyping** to researchers throughout Pakistan
31. Trained researchers from Breed Improvement, Live Stock department of Punjab in genotyping and parentage analysis of cattle.
32. Trained interneers from different universities of Pakistan

STUDENTS SUPERVISED

PHDs-COMPLETED

1. **Dr. Mariam Shahid (HEC Indigenous Scholar) (2015)**
Shahid, M., Sabar, M. F., Rahman, Z. 2015. *Population based Case-Control Asthma Association Studies of Single Nucleotide Polymorphisms in Chromosome 17 Potential Genomic Regions*.
CEMB, University of the Punjab, Lahore, Pakistan
2. **Muhammad Umer Kahn (2015-19)**
Khan, M. U., Sabar, M. F. (2020). *Mtdna Profiling of Yashkun and Shin Population of Gilgit- Pakistan*. Centre for Applied Molecular Biology, University of the Punjab, Lahore
3. **Muhammad Usman Ghani (2015-2019)**
Ghani, M. U., Sabar, M. F. (2020). *Evaluation of Single Nucleotide Polymorphisms in Cytokine Gene Cluster and Risk of Asthma in Pakistani Children*. Centre for Applied Molecular Biology, University of the Punjab, Lahore
4. **Sana Ashiq (2025). Molecular Genetic Characterization of Congenital Heart Diseases in Pakistani Population.** Centre for Applied Molecular Biology, University of the Punjab, Lahore.
5. **Aqsa Aslam (2025-HEC Indigenous Scholar). A Comparative Study of the Association of Genomic Variants in Candidate Genes of 6p21 with the Pathogenicity of Asthma.** Centre for Applied Molecular Biology, University of the Punjab, Lahore.

PHDs -IN PROCESS

6. **Sameen Shahid**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
7. **Sherish Khan**
Centre for Applied Molecular Biology, University of the Punjab, Lahore

M.PHILs COMPLETED

8. **Natiq Ali Asghar (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
9. **Samra Tahir (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
10. **Hafiza Shifa Ahmad (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
11. **Saleha Khalid (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
12. **Muhammad Muneeb Bilal, (2025)**
School of Biochemistry and Biotechnology, University of the Punjab, Lahore
13. **Sheeza, (2025)**
School of Biochemistry and Biotechnology, University of the Punjab, Lahore
14. **Javeria Sajid, (2025)**
School of Biochemistry and Biotechnology, University of the Punjab, Lahore
15. **Hafiza Shifa (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
16. **Saleha (2025)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
17. **Miss Sehar Ilahi (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
18. **Miss Zartash Butt (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
19. **Miss Nimra (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
20. **Ms. Aima Zahid (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
21. **Miss Zartashay Naeem (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
22. **Mariam Aman (2024)**
Centre for Applied Molecular Biology, University of the Punjab, Lahore
23. **Mr. Taha Hussain**
Sabar, M. F., Hussain, T. Ghani, M. U. (2023). In-silico and mutational analysis of targeted region (exon 6) of ACIN1 gene in the initial phase of chronic myeloid leukemia patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
24. **Miss Uroosa Tabarak**
Sabar, M. F., Tabarak, U., Awan, F. I. (2023). Bioinformatics & Mutational Evaluation of the targeted region (Exon-6) of ACIN1 Gene in the Accelerated Phase of Chronic Myeloid Leukemia Patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
25. **Miss Iqra Arshad**

- Arshad, I., Ghani, M. U., **Sabar, M. F.** (2023). Mutational Analysis of CFTR Gene (Exon13) in Cystic Fibrosis Patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 26. Ms. Hafiza Noor Afshan Tauqir Malik**
Arshad, I., Awan, F. I., **Sabar, M. F.** (2023). Association of MTHFR & MTR Gene Polymorphisms in Development of Hyper/Hypo Thyroidism: A Case-Control Study Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 27. Miss Ayesha Mumtaz**
Mumtaz, A., Ghani, M. U., **Sabar, M. F.** (2022) Development of Low Cost Assay to Diagnose $\Delta F508$ Mutations in Cystic Fibrosis Patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 28. Mr. Ghulam Fareed**
Fareed, G., Awan, F. I., **Sabar, M. F.** (2022) Genetic Characterization and Population Structure of Critically Endangered, White-backed Vulture (*Gyps bengalensis*) in an *In-situ* Conservation Center. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 29. Ms. Kokab Durri**
Durri, K., **Sabar, M. F.**, Mehboob, Sumaira. (2022). Mutation Analysis of Nucleophosmin-1 (*NPM1*) Gene Variants Associated with Chronic Myeloid Leukemia in Patients from Oncology Department of Tertiary Care Hospitals. School of Biochemistry, Minhaj University Lahore
- 30. Miss Sadia Anjum**
Anjum, S., **Sabar, M. F.** (2022). Evaluation of Association of Single Nucleotide Polymorphism rs2495636 in IL-13R α Gene with Asthma. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 31. Miss. Afifa**
Afifa., **Sabar, M. F.** (2022). Study of CYP1A1 Gene Polymorphism (rs1048943) in Chronic Myeloid Leukemia Pakistani Patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 32. Mr. Rehmatullah**
Rehmatullah., **Sabar, M. F.** (2022). Analysis of Genetic Polymorphisms in Exon 7 of CYP1A1 Gene in Chronic Myeloid Leukemia and their Clinicopathological Correlations. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 33. Miss Faiza Naeem (2018-20)**
Naeem, F., **Sabar, M. F.** (2020). Screening of IL-13 gene mutations in Pakistani asthmatic children. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 34. Miss Qurat-ul-Ain (2018-20)**
Ain, Q. U., **Sabar, M. F.** (2020). Identification of single nucleotide variants in promoter region of RAD-50 gene in asthmatic Pakistani children. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 35. Miss Qurat-ul-ain Zafar (2018-20)**
Zafar, Q. A., **Sabar, M. F.** (2020). Sequence analysis of IL-4 gene promoter region in pediatric asthma in Pakistan. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 36. Miss Sundus Aslam (2019)**
Aslam, S., Ghani, M.U., **Sabar, M.F.** (2019). Thymic Stromal Lymphopoietin- A Candidate Gene to Study Asthma Associations. Centre for Applied Molecular Biology, University of the Punjab, Lahore

- 37. Miss Hafiza Sidra Bashir (2019)**
Bashir, H.S., **Sabar, M.F. (2019).** Frequency Distribution and Association of Genomic Variant rs2289276 With Asthma in Pakistani Population. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 38. Miss Saba Tariq (2019)**
Tariq, S., **Sabar, M.F. (2019).** Role of Thymic Stromal Lymphopoietin Gene Polymorphism in Asthma Pathogenesis. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 39. Ms. Suneela Raza (2019)**
Raza, S., **Sabar, M.F. (2019).** Detection of SNPs in IL4R gene in local population of Sargodha. Department of Biotechnology, University of Sargodha, Sargodha.
- 40. Mr. Muhammad Akram (2018)**
Akram, M., **Sabar, M.F. (2018).** Asthma susceptible variants in Vascular Endothelial Growth Factor-A and Transforming Growth Factor- β genes. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 41. Miss Ayesha Noor (2018)**
Noor, A., **Sabar, M.F. (2018).** Analysis of association of Interleukin-33 genetic variants (rs2381416 and rs3939286) with pediatric asthma. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 42. Miss Iqra Noor (2018)**
Noor, I., **Sabar, M.F. (2018).** Interleukin-1 Receptor-L1 polymorphism and asthma susceptibility in children of Punjab. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 43. Mr. Obaid Ullah (2018)**
Ullah, O., **Sabar, M.F. (2018).** Detection of potential SNPs in coding region of ADRB2 gene in the local Punjabi Population and to find out the association of the detected SNPs with asthma. Department of Biotechnology, University of Sargodha, Sargodha.
- 44. Miss Saddiqa Riaz (2018)**
Riaz, S., Hafeez, S., **Sabar, M.F. (2018).** The Detection of Potential SNPs in HLA-DRB1 gene related to asthma in local population of Pakistan. Department of Biotechnology, University of Sargodha, Sargodha.
- 45. Miss Ifrah Khalid (2017)**
Khalid, I., **Sabar, M. F. (2017).** Study of TSLP, IL4R α and IL13R α gene polymorphisms in asthmatic patients. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 46. Miss Alishba Maryam (2017)**
Maryam, A., **Sabar, M.F. (2017).** Significance of Vitamin D Receptor (VDR) gene polymorphisms as biomarkers for asthma. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 47. Miss Irsa Akhtar (2017)**
Akhtar, I., **Sabar, M.F. (2017).** IL-10 Upstream Nucleotide Variants involvement in Predisposition of Asthma in Pakistan. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 48. Miss Annam Shafqat (2017)**
Shafqat, A., **Sabar, M.F. (2017).** TH₂ Cytokine Single Nucleotide Polymorphisms and susceptibility of asthma. Centre for Applied Molecular Biology, University of the Punjab, Lahore
- 49. Mr. Muhammad Usman Ghani (2014).**

Ghani, M.U., **Sabar, M. F.**, Ali, A. 2014. A Study on Association of Genetic Variants in gene ADAM33 with Asthma in Local Population of Lahore Region, Pakistan. University of Lahore, Lahore

50. Ms. Saadia Tabassum (2012)

Tabassum, S., Ahmad, H. and **Sabar. M. F.** (2012). Genetic elaborations of some ethnic groups of Hazara through X chromosome specific markers. M. Phil Thesis, Department of Genetics, Hazara University, Mansehra.

MS COMPLETED:

51. Ms. Sayeda Saadia Fatim Ali (2011)

Ali, S. S. F., **Sabar, M. F.** 2011. **Association Studies of Single Nucleotide Polymorphisms (SNPs) with Asthma in Pakistani Population.** University of Lahore, Lahore.

PUBLICATIONS

MUTATION ANALYSIS FOR NUCLEOPHOSMIN-1 (NPM1) GENE VARIANT
OF CHRONIC MYELOID LEUKEMIA PATIENTS FROM LAHORE-PAKISTAN

1. Safdar, A., Rafique, H., Bano, I., Ghani, M.U., Sadaqat, N., Sabar, M.F., Khan, M.U., Shahid, M., Arooj, R., Akram, A. and Kanwal, F., 2025. IDENTIFICATION OF EXON 12 MUTATIONS IN THE CFTR GENE USING A COST-EFFECTIVE CAPILLARY ELECTROPHORESIS (CE) ASSAY. *Bulletin of Biological and Allied Sciences Research*, 2025(1), pp.103-103.
2. Taleb, Y.S., Memon, P., Jalbani, A., Al-Anazi, N., Al-Garni, A., Altaweel, M., Khan, M.A., **Sabar, M.F.** and Iqbal, Z., (2025). Genotype–phenotype correlations in inherited cardiomyopathies, their role in clinical decision-making, and implications in personalized cardiac medicine in multi-omics as well as disease modeling eras. *Saudi Journal for Health Sciences*, 14(1), pp.30-41.
3. Gul, R., Firasat, S., Hussain, M., Akbar, F., Fatima, K., **Sabar, M.F.** and Afshan, K., (2025). Genetic Variants in Mucopolysaccharidosis Type I Patients from Pakistan: Identification of a Novel 14-Nucleotide Deletion and A Highly Prevalent Missense Variant in a Cohort of 10 Families.
4. Safdar, A., Ghani, M.U., Bano, I., Mehmood, T., Rafique, H., **Sabar, M.F.**, Akbar, A. and Shaikh, R.S., 2025. Cystic fibrosis in Pakistan: population harbouring rare variants non-responsive to CFTR modulators and the dilemma of poor health facilities. *Molecular Biology Reports*, 52(1), pp.1-13.
5. Khan, M.U., Zahid, T., **Sabar, M.F.**, Masood, T., Ali, Q., Han, S. and Ahmad, A., 2024. Ethnogenetic analysis reveals the Bronze Age genetic affiliation of Yashkuns with West Eurasians. *Scientific Reports*, 14(1), p.31414.
6. Aslam, A., Vijverberg, S.J.H., van der zee, A.H.M., **Sabar, M.F.** (2024). Genetic Variations on Chromosome 6p21 Are Associated with Asthma Risk and Disease Severity: A Case–Control Study from Pakistan. *Genes* **2024**, 15, 1608.
7. Mehboob, S., Durri K., **Sabar, M. F.**, Muzzamal, H., Manzoor, F. (2024). Mutation Analysis for Nucleophosmin-1 (*NPM1*) Gene Variant of Chronic Myeloid Leukemia Patients from Lahore-Pakistan. *International Journal of Pharmacy & Integrated Health Sciences*. 6(1).
8. Khan, S., **Sabar, M.F.**, Akbar, M. and Waris, A. (2024). Dilemma in Diagnosis and Management of CML in Pakistan. *Turkish Journal of Hematology*, 41(4), pp.286-287.
9. Safir, W., Altaf, S., Ullah Jan, P. F., Shujaat, N., Khan, F. U., Rehman, A., Kousar, S., Ghani, M. U., **Sabar, M. F.**, Shahid, M. (2024). Association of ORMDL3 single nucleotide polymorphic variants with bronchial asthma in Pathan population. *Gene Reports*, 36:101958
10. Safdar, A., Ghani, M.U., Bano, I., Mehmood, T., Akbar, A., Awan, F.I., Rafique, H., Sabar, M.F., Tajamal, M. and Shaikh, R.S., (2024). P258: Diversity of CFTR mutations in a Pakistani population: Implications for comprehensive genetic testing and genetic counseling in cystic fibrosis. *Genetics in Medicine Open*, 2.
11. Naeem, F., **Sabar, M. F.**, Ghani, M. U., Ain, Q. U., Zafar, Q. A. (2024). Identification of Prognostic Genes Associated with Asthma in Pakistan. *Pakistan Journal of Zoology*. 56 (1): 77-85

12. Safdar, A., Ghani, M. U., **Sabar, M.F.**, Khan, M. U., Hussain, M., Hussain, T. (2024). Advancement in the treatment of alzheimer's disease, 2023. *International Journal of Pharmacy & Integrated Health Sciences*. 5(1): 72-83
13. Ashiq, S., Hyder, S.N., Ashiq, K., **Sabar, M.F** (2023). Role of vascular endothelial growth factor (VEGF) as a potential biomarker in congenital heart diseases (CHDs): a systematic review. *The Journal of Tehran University Heart Centre*. 18(4):237-243
14. Shahid, S., **Sabar, M. F.**, Iqbal, Z., Saleem, Z., Khokhar, M. A., Ashiq, S. (2024). Molecular biology and drug therapies of chronic myeloid leukemia: a review of recent literature. *International Journal of Pharmacy & Integrated Health Sciences*. 5(1): 34-44.
15. Wasti, Q. Z., **Sabar, M. F.**, Farooq, A., Khan, M. U. (2023). Stepping towards Pollen DNA metabarcoding; A breakthrough in Forensic Sciences. *Forensic Science, Medicine and Pathology*. 1-11
16. Shahid, S., **Sabar, M. F.**, Jamil, A., Khokar, M.A., Absar, M., Iqbal, M., Shammash, M.A., Saglio, G., Basit, S., Afzal, S. and Ramzan, K., (2023). Discovery of Mutated MUC3A Gene as a Novel Transcription Factor Exclusively Associated with Accelerated Phase Chronic Myeloid Leukemia: Hunt for Common Biomarker of Fatal CML Progression. *Blood*, 142, p.7429.
17. Iftikhar, A., **Sabar, M.F.**, Farooq, R. and Akhtar, M. (2023). Different Covid-19 Vaccines in Pakistan: Administration and Effectiveness. *National Journal of Health Sciences*, 8(3), pp.132-136.
18. Rashid, J., **Sabar, M. F.***, Gill, Z., Mustafa, Z., Fatima, F., Ashiq, S. (2023). Cosmeceuticals: The Bioactive Elements in New-Age Beauty Products. *International Journal of Pharmacy & Integrated Health Sciences*. 4(2): 70-82.
19. **Sabar, M. F.**, Ghani, M. U., Farooq, A., Ashiq, S., Awan, F. I., Ashiq, K. (2023). A comprehensive review on asthma: pathophysiology, treatment and role of genetics. *International Journal of Pharmacy & Integrated Health Sciences*. 4(2): 94-100.
20. Ashiq, S., **Sabar, M.F***, and Hyder, S.N. (2023). Genetic Risk Score Constructed from Polymorphisms in the VEGFA, TBX5, and SMAD7 Genes Provides Novel Insights into the Molecular Mechanisms of the Tetralogy of Fallot and Ventricular Septal Defect (Case-Control Study from the Pakistani Population). *The American Journal of Cardiology*, 203, pp.368-375.
21. Safdar, A., Ghani, M.U., Bano, I., Rafique, H., **Sabar, M.F.**, Mumtaz, A., Akbar, A. and Shaikh, R.S. (2023). P027 Mutational analysis of CFTR gene in Pakistani cystic fibrosis patients. *Journal of Cystic Fibrosis*, 22, pp.S71-S72.
22. Mehdi, Z., Khalid, I., Bano, I., Ghani, M. U., **Sabar, M. F.**, Khan, M. U., Rehman, H. M., Hussain, M., Anjum, S., Mumtaz, Aysha., Amin, I., Shahid, M. (2023). Association of TSLP Gene's SNP variants with asthma disease in Pakistan. *Pakistan Journal of Zoology*. <https://dx.doi.org/10.17582/journal.pjz/20230218070210>

23. Ullah, U., Khan, W. A., Mustafa, H., **Sabar, M. F.**, Shah, S. F. H., & Mohyuddin, S. G. (2023). DEMOGRAPHIC DETAILS COMPARISON OF ASTHMATIC PATIENTS IN THE DISTRICT OF SARGODHA. *Pakistan Journal of Science*, 75(1): 63-70.
24. Ashiq, S. and **Sabar, M.F.** (2023). Association of maternal hypertension and diabetes with variants of the NKX2-5, LEFTY1 and LEFTY2 genes in children with congenital heart defects: a case-control study from Pakistani Population. *Molecular Biology Reports*, 50(6), pp.5013-5020.
25. Alanazi, N., Iqbal, Z., Akhtar, T., Khalid, A.M., Aleem, A., Shahzadi, S., Akram, A.M., Rasool, M., Shah, I.H., Khalid, M., **Sabar, M.F.** and Iqbal, M., (2023). Association Of BCR-ABL Alternative Splice Variants with Disease Progression, Treatment Response and Survival in Chronic Myeloid Leukemia Patients Treated with Firstline imatinib Monotherapy. *Advancements in Life Sciences*, 9(4), pp.612-617.
26. Akram, M., **Sabar, M. F.**, Bano, I., Ghani, M. U., Shahid, M. (2022). Single Nucleotide Polymorphisms of Transforming Growth Factor-B1 Gene as Potential Asthma Susceptible Variants in Punjabi Population of Pakistan. *J Ayub Med Coll Abbottabad*. 34(4 Suppl 1): 944-948
27. Bashir, H.S., Ashiq, S. and **Sabar, M.F.** (2022). Covid-19 Pandemic and Chronic Myeloid Leukemia: A Review. *International Journal of Pharmacy & Integrated Health Sciences*, 3(2): 14-35.
28. ULLAH, R., MEHDI, Z., GHANI, M. U., **SABAR, M. F.**, & KHAN, M. U. (2022). ROLE OF SINGLE-NUCLEOTIDE VARIATIONS OF TSLP IN ASTHMA DISEASE. *Chest*, 162(4), A1541.
29. Ashiq, S., Ashiq, K. and **Sabar, M.F.**, 2023. The Role of Integrin Beta 3 Polymorphisms in Coronary Artery Disease: A Systematic Review and Meta-analysis. *Pakistan Heart Journal*, 56(1), pp.66-71.
30. Ashiq, S., Ashiq, K. And **Sabar, M.F.** (2022). The Complex Relationship of Paraoxonase Gene Polymorphisms with Coronary Artery Disease and Lipid Metabolism. *Pakistan Heart Journal*, 55(3), pp.307-308.
31. Zulfiqar, I., Wahab, A., Saeed, M.U., Hussain, N., **Sabar, M.F.**, Bilal, M. and Iqbal, H.M., 2022. Nanoarchitectonics: role of nanomaterials in vaccination strategies for curbing SARs-CoV-2/COVID-19. *Nanofabrication*, 7, pp.261-279.
32. Ghani, M.U., **Sabar, M.F.** and Awan, F.I. (2022). WS21. 03 Low-cost chain termination DNA sequencing PCR reaction to diagnose CFTR gene mutations. *Journal of Cystic Fibrosis*, 21, p.S41.

33. Jaffer, M., Shahzad, M. S., Rahman, Z. U., Ali, A., Kalsoom, S., Bajwa, J. I., **Sabar, M. F.**, Alvi, A. (2022). Genetic Characterization of Wakhi People from Hunza Valley of Pakistan by employing Mitochondrial DNA Control Region. *Advancements in Life Sciences*, 9(1), 13-17.
34. **Sabar, M. F.**, Ashiq, S., & Shahid, M. (2022). The Impact of COVID-19 on Asthma Patients: Current Knowledge and Future Perspective. *Journal of the Dow University of Health Sciences*, 16(1), 41-45.
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INTERNATIONAL CONFERENCE, PAPER PRESENTATIONS AND ABSTRACTS:

1. **Muhammad Farooq Sabar** (2023) Insight of Sanger Sequencing Chemistry and Genetic Analyzers. DNA Sequencing A Hands-On Training Workshop at CAMB, University of the Punjab, Lahore (29th January-2nd February 2024)
2. **Muhammad Farooq Sabar** (2022) Association of vitamin d receptor gene with the risk of asthma. 1st International Conference on innovations in chemistry, Biochemistry, Biotechnology & Bioinformatics (ICBBB-2022), Islamia University Bahawalpur, Bahawalpur.
3. **Muhammad Farooq Sabar** (2018), Study On Vitamin D Receptor Gene Polymorphisim And Risk Of Asthma In Punjabi Population Of Pakistan. 2nd International Conference on "New Trends in Natural Sciences and Public Health, Food, Nutrition & Safety" Lahore College for Women University, Lahore.
4. **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Mariam Shahid, Muhammad Akram and Iqbal Bano (2017). Asthma in Pakistan: Role of Genetics and Environmental Factors. International Conference on Solid State Physics, ICSSP'17 at University of the Punjab, Lahore
5. Saba Altaf, Mariam Shahid, Iqbal Bano, Samra Kausar, Muhammad Ayuob, Raheela Aslam, **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Ujala Tayyab, Sarooj Nadeem, and Tayyab Hasnain (2017). Association between genetic variant (rs11650680) of TOP2A and early onset asthma in population of Lahore, Pakistan. 2nd

International Conference on Advanced Molecular Biology of Plant and Health Sciences. ALS-Abstract Book, p48

6. **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Farheena Iqbal Awan, Mariam Shahid, Muhammad Akram and Iqbal Bano (2017). Role of Genomic Variants in the predisposition of Asthma in Pakistani Patients. Proceedings of 3rd Internatinal Conference on Biotechnology, USA journal of R&D, Page 58
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8. **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Mariam Shahid, Muhammad Akram and Iqbal Bano (2017). Both Genetic and Environmental Factor are Involved in the Development of Asthma in Pakistan. International Conference on New Trends in Natural Sciences: From Basic to Applied at Lahore College for Women University, Lahore. Abstract book
9. **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Farheena Iqbal Awan, Mariam Shahid, Muhammad Akram and Iqbal Bano (2017). Significance of Vitamin-D Receptor Gene Polymorphism as a Biomarker for Asthma in Punjabi Population of Pakistan. International Conference on Agricultural and Food Science (ICAFS2017) & the 7th International Conference on Biotechnology and Bioengineering (7th ICBB2017) at Virtual University, Lahore. Abstract book
10. Muhammad Usman Ghani, **Muhammad Farooq Sabar**, Iqbal Bano, Mariam Shahid, Muhammad Akram, Nadeem Sheikh (2017). ADAM33 gene variants rs2280089, rs2280090, rs2280091 are not associated with asthma in local Patients. 2nd International Biennial CardioRespiratory Conference-2017” 03-05 March, 2017. Abstract Book
11. Ifrah Khalid, Muhammad Usman Ghani, Iqbal Bano, Ahsan Waheed Rathore, Mariam Shahid, Alishba Maryam, Muhammad Akram, **Muhammad Farooq Sabar*** (2017). rs1837253, rs1805010 and rs2495636 SNPs as asthma risk factors in Pakistan. Poster presentation in an International Symposium on Advances in Molecular Biology of Plants and Health Sciences at CEMB, PU, Lahore. Advancements in Life Sciences. Abstract Book
12. Muhammad Ayoub, Mariam Shahid, Saba Altaf, Iqbal Bano, Samra Kousar, Raheela Aslam, **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Ujala Tayyab, Sarooj Nadeem, Tayyab Husnain. (2017). Case-control Association Study of HLA-B variant (rs866916063) with asthma in local population of Lahore, Pakistan. Poster presentation in an International Symposium on Advances in Molecular Biology of Plants and Health Sciences at CEMB, PU, Lahore. Advancements in Life Sciences. Abstract Book
13. **Muhammad Farooq Sabar** (2015). Genomics Associated with Asthma in Pakistan. International Symposium on Advances in Molecular Biology of Plant and Health Sciences, CEMB, PU, Lahore. ALS Abstract Book, Page 42.
14. **Muhammad Farooq Sabar**, Muhammad Usman Ghani, Mariam Shahid, Aleena Sumrin, Amjad Ali, Muhammad Akram, Muhammad Akram Tariq (2015). Genetic Association of ADAM33’s SNP variants with Asthma in the Population of Lahore Region, Pakistan. 4th international molecular biology and biotechnology congress & conference on life sciences research 2015. Isra University, Islamabad. MBB06.

15. Shahid M., **Sabar M.F.**, Rahman Z., Bano I., Ghani M.U., Kousar S., Akram M., Husnain T. (2015). Urbanization triggers asthma in 'C' allele carriers for rs12603332 European Academy of Allergy and Clinical Immunology (EAACI), P04, Istanbul, Turkey
(https://www5.shocklogic.com/scripts/jmevent/programme.php?client_Id=EAACI&project_Id=ASIST15). The poster won the travel grant.
16. Shahid, M., **Sabar, M. F.**, Bano, I., Rahman, Z., Iqbal, Z., Ali, S. S., Ghani, M. U., Iqbal, M., Husnain, T. (2014). Chromosome 17q21 is Associated with Asthma in the Population of Lahore, Pakistan. International Conference "Emerging Trends in Life Sciences for Sustainable Development" held at FC College University, Lahore

GENEBANK (NCBI) SUBMISSIONS OF DNA SEQUENCES:

Following are some of the sequences submitted to GenBank database (**Total >210 sequences**)

1. Homo sapiens isolate SHN-009-F D-loop, partial sequence; mitochondrial.
GenBank: MH998117.1
2. Homo sapiens protocadherin 15 isoform B (PCDH15) mRNA, complete cds, alternatively spliced
GenBank: AY388963.1
3. Hepatitis C virus subtype 1a isolate Pk-1a polyprotein gene, partial cds
GenBank: GU736411.1
4. Hepatitis C virus subtype 3a isolate Pk-E2 polyprotein gene, partial cds
GenBank: GU736410.1
5. Hepatitis C virus polyprotein gene, partial cds
GenBank: GQ898898.1
6. Hepatitis C virus isolate PK-1a polyprotein gene, partial cds
GenBank: GQ451336.1
7. Hepatitis C virus subtype 3a isolate PK1 non-structural protein NS5a gene, partial cds
GenBank: GQ300882.1
8. Hepatitis C virus isolate PK1 non-structural protein NS4b gene, partial cds
GenBank: GQ325251.1
9. Hepatitis B virus isolate HBVpk44 polymerase (P) gene, partial cds
GenBank: FJ966118.1
10. Hepatitis B virus isolate HBVpk23 polymerase (P) gene, partial cds
GenBank: FJ966117.1
11. Hepatitis B virus isolate HBVpk32 polymerase (P) gene, partial cds
GenBank: FJ966116.1
12. Hepatitis B virus isolate HBVpk25 polymerase (P) gene, partial cds
GenBank: FJ966115.1
13. Hepatitis B virus isolate HBVpk34 polymerase (P) gene, partial cds
GenBank: FJ966114.1
14. Hepatitis B virus isolate HBVpk26 polymerase (P) gene, partial cds
GenBank: FJ966113.1
15. Hepatitis B virus isolate HBVpk22 polymerase (P) gene, partial cds
GenBank: FJ966112.1

16. *Bubalus bubalis* haplotype NR-6 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946524.1
17. *Bubalus bubalis* haplotype NR-5 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946523.1
18. *Bubalus bubalis* haplotype NR-4 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946522.1
19. *Bubalus bubalis* haplotype NR-3 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946521.1
20. *Bubalus bubalis* haplotype NR-2 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946520.1
21. *Bubalus bubalis* haplotype NR-1 cytochrome b gene, partial cds; mitochondrial
GenBank: JF946519.1
22. *Psittacula krameri* isolate PKPr24 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823255.1
23. *Psittacula krameri* isolate PKPr23 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823256.1
24. *Psittacula krameri* isolate PKPr22 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823254.1
25. *Psittacula krameri* isolate PKPr21 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823253.1
26. *Psittacula krameri* isolate PKPr20 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823252.1
27. *Psittacula krameri* isolate PKPr19 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823251.1
28. *Psittacula krameri* isolate PKPr18 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823250.1
29. *Psittacula krameri* isolate PKPr17 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823249.1
30. *Psittacula krameri* isolate PKPr16 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823248.1
31. *Psittacula krameri* isolate PKPr15 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823247.1
32. *Psittacula krameri* isolate PKPr14 NADH dehydrogenase subunit 2 (ND2) gene,
complete cds; mitochondrial
GenBank: KC823246.1

33. *Psittacula krameri* isolate PKPr13 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823245.1
34. *Psittacula krameri* isolate PKPr12 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823244.1
35. *Psittacula krameri* isolate PKPr11 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823243.1
36. *Psittacula krameri* isolate PKPr10 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823242.1
37. *Psittacula krameri* isolate PKPr9 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823241.1
38. *Psittacula krameri* isolate PKPr8 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823240.1
39. *Psittacula krameri* isolate PKPr7 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823239.1
40. *Psittacula krameri* isolate PKPr6 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823238.1
41. *Psittacula krameri* isolate PKPr5 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823237.1
42. *Psittacula krameri* isolate PKPr4 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823236.1
43. *Psittacula krameri* isolate PKPr3 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823235.1
44. *Psittacula krameri* isolate PKPr2 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823234.1
45. *Psittacula krameri* isolate PKPr1 NADH dehydrogenase subunit 2 (ND2) gene, complete cds; mitochondrial
GenBank: KC823233.1

PHD THESES REVIEWER/EXTERNAL EXAMINAR:

1. Liaquat University of Health and Medical Sciences, Jamshoro, Sindh, Pakistan
2. University of Veterinary and Animal Sciences, Lahore, Pakistan

FOREIGN TRAININGS:

1. (2002) DNA sequencing and genotyping on ABI-310 and 3100 machines (Switzerland)
 2. (2002) Human Identification analysis using DNA forensic techniques (Identifiler kit) on ABI-machines (Switzerland)
 3. (2005) Synthesis of recombinant interferon and its PEGylation (ICGEB-Italy)
 4. (2006) DNA sequencing and gene mapping on ABI-3730 machine (UK)
 5. (2007) Real Time PCR of ABI (Dubai)
 6. (2010) Training workshop on ABI Next Generation DNA Sequencer "SOLiD" (Germany)
 7. (2011-2012) Postdoctoral Fellowship training on cancer genetics and mutation screening (King Faisal Specialist Hospital and Research Centre, Al-Riyadh, Saudi Arabia)
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SOME SIGNIFICANT WORKSHOPS AND SYMPOSIA ATTENDED:

International:

1. (2006) Bioforums at CAMB/CEMB campus
2. (2008) Delivered a lecture on DNA sequencing at CAMB/CEMB in a Bioforum at CAMB/CEMB campus
3. (2009) Research tools in proteomics, organized by National Centre for Proteomics, University of Karachi
4. (2014) International conference on "Emerging Trends in Life Sciences for Sustainable Development" at FC College University, Lahore
5. (2015) 4th international molecular biology and biotechnology congress & conference on life sciences research 2015 held at Isra University, Islamabad.
6. (2015) International Symposium on Advances in Molecular Biology of Plant and Health Sciences, CEMB, PU, Lahore
7. (2017) 3rd International Conference on Biotechnology at University of South Asia, Lahore
8. (2017) Two days Workshop on "Patent Filing & Introduction to Intellectual Property System of Pakistan" at Punjab University, Lahore
9. (2017) International Conference on "New Trends in Natural Sciences: From Basic to Applied" at Lahore College for Women University, Lahore
10. (2017) One week "42nd International Nathiagali Summer College on Physics and Contemporary Needs"
11. (2017) International Conference on Solid State Physics, ICSSP'17 at University of the Punjab, Lahore
12. (2018) 2nd International Conference on "New Trends in Natural Sciences and Public Health, Food, Nutrition & Safety" at Lahore College for Women University, Lahore
13. (2023) 2023 Highlights of ASH in Asia-Pacific, Hanoi, Vietnam

National:

1. (2007) Seminar on "New Possibilities in LC/MS" at Lahore
2. (2007) Workshop on proteomics at MMG, PU, Lahore
3. (2013) **Planning, Establishing and Managing Technology Incubators.** A two days training workshop at NUST, Islamabad; organized by Ministry of Science and Technology

4. (2016) National workshop “Organic Food And Health: Avenues of Innovation and Entrepreneurship”
5. (2016) One day awareness seminar on “Lungs and Bronchial Diseases” at CAMB, PU, Lahore
6. (2016) Hands on Training on Advances in Nucleic Acid Technology at CAMB, PU, Lahore.
7. (2016) “Four Days National Hand on Training Workshop on Clinical Diagnostics by Real Time PCR, Western Blot and Cell Culturing” jointly organized at Institute Biochemistry and Biotechnology, PU, Lahore.
8. (2017) one day seminar on “Advances in PCR Technology; Power to Detect Single Copy Without Standard Curves”
9. (2016) A 3 days Workshop on “Drug Discovery and Development” held at COMSATS Institute of Information Technology, Islamabad.
10. (2017) Two days training workshop on “Writing Winning Research Proposals” held at COMSATS Institute of Information Technology, Islamabad.
11. (2017) 6th Invention to Innovation Summit 2017 at Punjab University, Lahore
12. (2018) One day symposium on “Industrial Biotech & Biorefining” at CAMB, PU, Lahore
13. One day symposium on “DNA in Crime Investigations” at PU, Lahore.
14. (2018) One day seminar on “Biosafety Training for Young Researchers” at CAMB, PU, Lahore

REVIEWER OF INTERNATIONAL SCIENTIFIC JOURNALS:

1. Journal of Asthma
 2. International Journal of Peptide Research and Therapeutics
 3. Journal of Chemical Society of Pakistan
 4. Pakistan Journal of Pharmaceutical Sciences
 5. Molecular and Cellular Biochemistry
 6. Expert Review of Respiratory Medicine
 7. Molecular Biosystems etc.
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ADMINISTRATIVE/MANAGEMENT EXPERIENCE:

Served or serving

1. (2010-2015) Member CAMB Executive Committee, headed by Secretary, Ministry of Sc.&Tech. (The committee was supreme governing body of CAMB)
2. (2000-2024) Head of CAMB DNA Core Facility
3. (2010-2011 & 2013-2015) Chairman CAMB Purchase Evaluation Committee
4. (2015-continued) Member departmental Purchase Evaluation Committee
5. (2010-2011) Chairman CAMB Management Committee
6. (2010-2011) Chairman CAMB Maintenance Committee
7. (2012-2015) Chairman Technical Evaluation Committee
8. (2015- 2024) Member Technical Evaluation Committee
9. (2010-2015) Chairman CAMB Departmental Inquiry Committees
10. (2015-2024) Member Board of studies CAMB, PU, Lahore
11. (2016-2024) Member Departmental Doctoral Program Committee (DDPC), CAMB, PU, Lahore
12. (2016-2022) Focal Person Laptop Scheme

13. (2017-2022) Coordinator MPhil studies program “Molecular Biology and Forensic Sciences” at CAMB, PU
14. (2022-2024) Coordinator PhD studies program “Molecular Biology and Forensic Sciences” at CAMB, PU
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16. (2018-2024) Member Scholarship and Financial Assistance Committee of the CAMB
17. (2015-2024) Member Admission Committee for MPhil and PhD admissions
18. (2018-2024) Member Student Disciplinary and Advisory Committee
19. (2024-Contd.) Member DPCC, School of Biochemistry and Biotechnology, PU, Lahore
20. (2024-Contd.) Member DTRC, School of Biochemistry and Biotechnology, PU, Lahore
21. (2024-Contd.) Member Board of Studies, School of Biochemistry and Biotechnology, PU, Lahore.
22. (2024-Contd.) Member Board of Faculty of Geo Sciences, PU, Lahore
23. (2025- Contd.) Member Board of Studies, Institute of Industrial Biotechnology, GCU, Lahore
24. (2025-Contd.) Member Management Committee, Department of Mosques, PU, Lahore

TEACHING:

MPhil and PhD Courses

1. Trends in Nucleic Acid Sequencing Techniques
 2. Advance Molecular Biology & Biotechnology
 3. Advances in Practical Approaches to Nucleic Acid Sequencing
 4. Recent Advances in Forensic Molecular Biology
 5. Paper Writing Skills
 6. Recent trends in Molecular Biology Techniques
 7. DNA Forensics
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PROJECTS/ MOUS/TASKS:

1. HEC has funded more than >**1.3M** in year 2023 for DNA Analysis service to researchers of QAU and other organizations.
2. HEC has funded more than >**4.0M** in year 2018 for DNA Analysis service to researchers.
3. Provision of DNA analysis services to Pakistani researcher (**HEC Sponsorship->4.5M-2017**) *Continuous activity since 2005*
4. DNA Genotyping and Fragment analysis for samples from Animal Husbandry Department of Directorate of Breed Improvement, Government of the Punjab (Services). Funded by Punjab Government (**1.81343M-2018**)
5. MoU with King Edward Medical University, Lahore for research collaboration providing DNA analytical services
6. DNA Genotyping and Fragment analysis for samples from Directorate of Breed Improvement, L&DD Department of Punjab (Services). Funded by Punjab Live Stock Department (**1.5 M-2017**)
7. Identification of new biomarkers associated with the progression of Chronic Myeloid Leukemia (CML) (Funded by Punjab University)

8. Association of *NKX2-5* polymorphisms with the ventricular septal defects in Pakistan (Funded by Punjab University)
9. TSLP association with asthma can be important biomarker in diagnosis and therapeutics. population (Funded by Punjab University)
10. Investigation of association of CHI3L1 gene variants with the manifestation of asthma in Pakistani population (Funded by Punjab University Project)
11. MOU of training of scientist from Department of Breed Improvement Livestock and Dairy Development, Punjab and Molecular Evaluation (Genotyping) of Breeding Bulls (8.43M-2012)
12. Establishment of DNA sequencing lab (1999) CAMB/CEMB, Lahore.
13. Establishment of DNA synthesis lab (2006) CAMB/CEMB, Lahore.
14. Developed PEGylation of recombinant proteins Technology at CAMB
15. Completed a project of DNA analysis for breed improvement from the department of Breed Improvement and Live Stock, Punjab.

POINEER IN AUTOMATED DNA SEQUENCING IN PAKISTAN:

1. Started Sanger technology based automated DNA sequencing and DNA primer/oligos synthesis first time in Pakistan
 2. Managed and maintained DNA Core facility of CAMB since 1999-2024
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PROCESS & TECHNOLOGY DEVELOPMENT:

1. Established first state of the art lab for DNA Sequencing and Genotyping in Pakistan. This setup later made the basis of DNA Forensic Labs, first time in Pakistan
 2. Established DNA primer synthesis setup first time in Pakistan
 3. Process for the modification (PEGylation) of interferon alpha with a novel PEG molecule, its purification and bioactivity testing was developed.
 4. Establishment of Single Base Extension (SBE) sequencing setup
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TECHNICAL AND ANALYTICAL SERVICES PROVIDED:

1. Providing DNA sequencing, genotyping and synthesis services to the researchers and academia of almost all universities and R&D organizations of the country. Technical services in these fields are also being rendered. (1999-to date)
 2. Letter of appreciation from **Commandant Armed Forces Institute of Pathology (AFIP), MH, Rawalpindi** for identifying and solving their long standing problem in the analysis of their forensic samples in their institute.
 3. Trained researchers from different organizations of the country including Punjab Live Stock department on DNA sequencing and genotyping
 4. Helped approximately 1000 students in their PhD/MPhil theses.
 5. Analyzed more than 10,00,000 DNA samples in the lab and synthesized approximately 400,000 nucleotides as DNA primers locally in the lab
 6. Spirometry (Lungs Function Test)
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MAJOR WORKSHOPS, SEMINARS CONFERENCES ORGANIZED

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1. (2024) Hand on Training Workshop on Next Generation Sequencing. Analysis 28th-30th August 2024
 2. (2024) DNA Sequencing, A Hands-On Training Workshop 29th January-2nd February 2024 at CAMB, PU, Lahore
 3. (2016) One day awareness seminar on “Lungs and Bronchial Diseases” at CAMB, PU, Lahore
 4. (2016) Hands on Training on Advances in Nucleic Acid Technology at CAMB, PU, Lahore.
 5. (2016) “Four Days National Hand on Training Workshop on Clinical Diagnostics by Real Time PCR, Western Blot and Cell Culturing” jointly organized at Institute Biochemistry and Biotechnology, PU, Lahore.
 6. (2017) One day seminar on “Advances in PCR Technology; Power to Detect Single Copy Without Standard Curves”
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ADDITIONAL SPECIALIZATION AND EXPERTISE

- Over 29 years of extensive experience of research and teaching in Research Centre and University to postgraduate, MPhil and Ph.D. scholars
- Molecular biological research/supervision experience, proficient in variety of molecular, genomic and analytical techniques, including but not limited to performing DNA sequencing analysis, genotyping, DNA forensic analysis, therapeutic protein production purification and modification and experiments on animals.
- Experienced in advanced molecular biology techniques including DNA & RNA extraction, sequencing & genotyping, mutation analysis, population genetics studies, disease associations with genomic variants, human identification analysis, protein production & isolation, chemical modifications, electrophoresis and Real Time polymerase chain reaction (PCR) etc.
- Extensive experience on Sanger sequencing based DNA Sequencers and Genetic Analyzers
- Highly experienced in molecular biology research tools, GeneMapper, DNA Sequencing Analysis software, Mutation Surveyor and SeqScap mutation analysis software MS office, Reference Manager, EndNote etc.
- Active research supervision, publication and conference participation with oral and poster presentations.