

CURRICULUM VITAE

DR. MUHAMMAD FAROOQ SABAR

Assistant Professor

Incharge

Genomics Reserach Group & DNA Core Facility

Centre for Applied Molecular Biology

University of the Punjab

Lahore



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ACADEMIC QUALIFICATION

Postdoctoral Fellow (Cancer Molecular Genetics)

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-Therapeutic Proteins)

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 (Applied Molecular Biology)

M.Sc. (Chemistry) University of the Punjab, Lahore

1995

B.Sc. (Phy, Chem, Stat) University of the Punjab, Lahore

1991

PROFESSIONAL, RESEARCH & TEACHING EXPERIENCE:

Assistant Professor/HoD DNA Core Facility

[2015 – Continued]

Centre for Applied Molecular Biology (CAMB), University of the Punjab, Lahore, Pakistan. M. Phil and Ph.D. teaching and Research guidance to the students. Student Coordination, career counseling and International Scholarship recommendation, Member departmental doctoral program committee and Board of studies in CAMB. Head DNA Genomics and analysis department of CAMB.

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 Studies [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/Asstt. 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 counseling and International Scholarship recommendation. Only Senior Research Scientist at CAMB who supervised PhD students. 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, enzyme assays etc. Helped MPhil and PHD students and researcher in their experiments.

SALIENT ACHIEVEMENTS

Total Impact Factor	=113.914
Citations	=477
h-index	=9
i10-index	=9
Publications in Impact Factor Journals	= 25
Publications in HEC Recognized Journals	=02
Total Publications	= 27
Accepted	=01

MoUs

1. King Edward University of Medical Sciences
2. Breed Improvement department of Livestock department of Punjab

Awards/Appreciations

1. Performance Evaluation Award (PU) 2016-17
2. Performance Evaluation Award (PU) 2015-16
3. Performance Evaluation Award (PU) 2014-15
4. Productive Scientist of Pakistan (PCST) 2016-17
5. Productive Scientist of Pakistan (PCST) 2017-18

Commercial

1. **Commercialization of DNA Sequencing and genotyping services in Pakistan**

2. **Commercialization of DNA primers/oligos synthesis facility** within the country as well as abroad
3. Earned more than *100 million rupees* by providing the **Analysis of millions of DNA samples** and **DNA synthesis services** to researchers
4. Focal Person for **CAMB Incubation/Display Centre** (Commercialization)- 2013-15

Services:

5. 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
6. Appreciation Letter from **Professor Dr. S. Riazuddin**, National Distinguished Professor and a prominent scientist of Pakistan
7. Rectification of issues in Genetic Analyzer of Faculty of Life Sciences at **BUIITEMS, Quetta**
8. Helped **UVAS, Lahore** in their DNA Sequencing facility issues.
9. Contributed in more than **1000 MPhil/PhD theses** from different universities of Pakistan
10. Provided **Technical help in DNA Sequencing and Genotyping** to researchers throughout Pakistan
11. Trained researchers from Breed Improvement, Live Stock department of Punjab in genotyping and parentage analysis of cattle.
12. Trained interneers from different universities of Pakistan

Academics:

13. Coordinator MPhil Studies
14. Member Board of Studies at CAMB
15. Prepared Applied Molecular Biology and Forensic Sciences curriculum for MPhil and PhD at CAMB
16. Member Departmental Doctoral Committee at CAMB
17. Teaching MPhil and PhD courses on DNA sequencing and Forensic DNA analysis at CAMB
18. Member BS, MS, MPhil and PhD Biochemistry and Molecular Biology curriculum review committee, University of Central Punjab
19. Detected genomic variants associations with asthma in Pakistani population.
20. Postdoc on cancer genetics from King Faisal Specialist Hospital and Research Centre (KFSH&RC), KSA
21. **Supervised PhD, MPhil and MS** scholars and trained many trainees
22. Heading Genetic Diseases Research Group of CAMB
23. Heading DNA sequencing group since 1999

STUDENTS SUPERVISED

PhD:

1. Dr. Mariam Shahid (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

M.Phil:**2. Muhammad Akram (2018)**

Akram, M., Sabar, M.F. (2018). Asthma susceptible variants in Vascular Endothelial Growth Factor-A and Transforming Growth Factor- β genes. University of the Punjab, Lahore

3. Ayesha Noor (2018)

Noor, A., Sabar, M.F. (2018). Analysis of association of Interleukin-33 genetic variants (rs2381416 and rs3939286) with pediatric asthma. University of the Punjab, Lahore

4. Iqra Noor (2018)**5. Noor, I., Sabar, M.F. (2018). Interleukin-1 Receptor-L1 polymorphism and asthma susceptibility in children of Punjab. University of the Punjab, Lahore****6. Miss Ifrah Khalid (2017)**

Khalid, I., Sabar, M. F. (2017). Study of TSLP, IL4R α and IL13R α gene polymorphisms in asthmatic patients. University of the Punjab, Lahore

7. Miss Alishba Maryam (2017)

Maryam, A., Sabar, M.F. (2017). Significance of Vitamin D Receptor (VDR) gene polymorphisms as biomarkers for asthma. University of the Punjab, Lahore

8. Miss Irsa Akhtar (2017)

Akhtar, I., Sabar, M.F. (2017). IL-10 Upstream Nucleotide Variants involvement in Predisposition of Asthma in Pakistan. University of the Punjab, Lahore

9. Miss Annam Shafqat (2017)

Shafqat, A., Sabar, M.F. (2017). TH₂ Cytokine Single Nucleotide Polymorphisms and susceptibility of asthma. University of the Punjab, Lahore

10. 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

11. 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:**12. 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.

SPECIALIZATION AND EXPERTISE

- Applied Molecular Biologist/ University Teacher/Researcher
- Over 21 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 western blotting, Immunohistochemistry and Real Time polymerase chain reaction (PCR), Virology etc.
- Extensive experience on Sanger sequencing based DNA Sequencers and Genetic Analyzers
- Experienced in using molecular biology research tools, GeneMapper, DNA Sequencing Analysis software, Mutation Surveyor and SecScap mutation analysis software MS office, Reference Manager, EndNote etc.
- Active research supervision, publication and conference participation with oral and poster presentations.

PUBLICATIONS IN IMPACT FACTOR JOURNALS

2017:

1. Imran, A., Qamar, H. Y., *Ali, Q., Naeem, H., Riaz, M., Amin, S., Kanwal, N., Ali, F., ***Sabar, M. F.**, Nasir, I. A. (2017) Role of Molecular Biology in Cancer Treatment. Iranian Journal of Public Health. 46(11):1475-85 **(IF-0.768)**
2. Akram, A. M., Iqbal, Z., Akhtar, T., Khalid, A. M., **Sabar, M. F.**, Qazi, M. H., Aziz, Z., Sajid, N., Aleem, A., Rasool, M., Asif, M. (2017) Presence of novel compound BCR-ABL mutations in late chronic and advanced phase imatinib sensitive CML patients indicates their possible role in CML progression. Cancer Biology & Therapy. 18(4):214-21 **(IF-3.294)** <http://tandfonline.com/doi/abs/10.1080/15384047.2017.1294289>
3. **Sabar, M. F.**, Shahid, M., Bano, I., Ghani, M. U., Akram, M., Iqbal, F., Kousar, S., Iqbal, Z., Altaf, S., & Husnain, T. (2017). rs12603332 is associated with male asthma patients specifically in urban areas of Lahore, Pakistan. Journal of Asthma, 54(9), 887-892 **(IF-1.746)** <http://www.tandfonline.com/doi/abs/10.1080/02770903.2016.1277539>

2016:

4. Iqbal, Z., Akram, A. M., Akhtar, T., Aleem, A., **Sabar, M. F.**, Aziz, Z., Sajid, N., Rasool, M., Asif, M., Qazi, M. H., Oraibi, S., Gill, A. T., Al Jamaan, K., Iqbal, M., & Khalid, A. M. (2016). Brief Research Report: Novel Compound BCR-ABL Mutations in Late Chronic Phase Imatinib Sensitive CML Patients Are Associated with Progression to Advance Disease Phase. Blood, 128(22), 3089 **(IF-13.164)** <http://www.bloodjournal.org/content/128/22/3089?sso-checked=true>
5. **Sabar, M. F.**, Ghani, M. U., Shahid, M., Sumrin, A., Ali, A., Akram, M., Tariq, M. A., & Bano, I. (2016). Genetic variants of ADAM33 are associated with asthma susceptibility in the Punjabi population of Pakistan. Journal of Asthma, 53(4), 341-348 **(IF-1.746)** <http://www.tandfonline.com/doi/abs/10.3109/02770903.2015.1124441>

2015:

6. Iqbal, Z., Akram, A. M., Akhtar, T., Khalid, M., Aziz, Z., Aleem, A., Gill, A. T., Khalid, A. M., Alanazi, A., Shah, I. H., **Sabar, M. F.** (2015) High Frequencies of Compound BCR-

ABL Mutations and Their Association with Imatinib Resistant, Disease Progression and Late Chronic Phase Disease in Pakistani Chronic Myeloid Leukemia Patients Necessitate the Inclusion of Molecular Testing in Routine Clinical Settings. *Blood* 126(23):5167-5167 (IF-13.164)

<http://www.bloodjournal.org/content/126/23/5167>

7. Iqbal, Z., Akhtar, T., Awan, T., Aleem, A., Sabir, N., Absar, M., Shamma, M.A., Shah, I. H., Khalid, M., Taj, A. S., Jameel, A., Alanazi, A., Gill, A. T., Hashmi, J. A., Hussain, A., **Sabar, M. F.**, Khalid, A. M., Qazi, M. H., Karim, S., Siddiqi, M. H., Mahmood, A., Iqbal, M., Saeed, A., Irfan, M. I., Rasool, M. (2015) High frequency and poor prognosis of late childhood BCR-ABL positive and MLL-AF4 positive ALL define the need for advanced molecular diagnostics and improved therapeutic strategies in pediatric B-ALL in Pakistan. *Molecular Diagnosis & Therapy* 19(5): 277-287. (IF-1.909)
8. Shahid, M., **Sabar, M. F.***, Bano, I., Rahman, Z., Iqbal, Z., Fatim Ali, S. S., Ghani, M. U., Iqbal, M. & Husnain, T. (2015). Sequence variants on 17q21 are associated with the susceptibility of asthma in the population of Lahore, Pakistan. *Journal of Asthma* 52(08):777-84. (IF-1.746)
<http://www.tandfonline.com/doi/full/10.3109/02770903.2015.1012590>
9. Rehman K.U., Akhtar T., **Sabar M.F.**, Tariq M.A. (2015) Allele frequency distribution of CYP2C19* 2 allelic variants associated with clopidogrel resistance in cardiac patients. *Experimental and therapeutic medicine*. 10(1):309-15. (IF-1.261)
<http://www.spandidos-publications.com/etm/10/1/309>

2014:

10. Iqbal Z., Akhtar T., Akram A.M., Khalid M., Shah I.H., Aleem A., Khalid M., Iqbal J., Aziz. Z., Absar M., Hashmi J.A., Qazi M.H., Khalid A.M., **Sabar M.F.**, Karim S., Rasool M., Mahmood A., Gill A.T., Saglio G., Iqbal M. (2014). Detection of Compound BCR-ABL Mutations in TKI Resistant CML Patients Including a Novel K245N Mutation Associated with Primary Nilotinib Resistance By Employing a Newly Developed Cost Effective BCR-ABL Sequencing Protocol. *Blood* 124(21): 1810. (IF-13.164)
<http://www.bloodjournal.org/content/124/21/1810?sso-checked=true>

2013:

11. **Sabar, M. F.**, Kousar, S., Zafar, A. U., Shahid, M. (2013) PEG-Interferon Conjugates: Effects of Length and Structure of Linker. *Pakistan Journal of Pharmaceutical Sciences* 26(2): 425-430 (IF-0.649)
12. **Sabar, M. F.**, Awan, F.I., Shahid, M Ghani, M. U. and Yaqub, M. (2013). Synthesis and Bioactivity Study of 30KDa Linear PEG-Interferon and its Comparison with Tri-Branched PEG-Interferon. *Journal of Chemical Society Pakistan* 35(1): 119-24 (IF-0.327)

2012:

13. Awan, T, Iqbal, Z , Aleem, A., Sabir, S., Absar, M., Rasool, M., Tahir, A.H., Basit, S., Khalid, A.M., **Sabar, M.F.**, Asad, S, Ali, A.S., Mahmood, A., Akram, M., Saeed, T., Saleem, A., Mohsin, D., Shah, I.H., Khalid, M., Asif, M., Haq, R., Iqbal, M., Akhtar, T. (2012) Five Most Common Prognostically Important Fusion Oncogenes are detected in majority of Pakistani Pediatric Acute Lymphoblastic Leukemia Patients and are strongly

associated with disease biology and treatment outcome. Asian Pacific Journal Of Cancer Prevention 13(11):5469-5475. (IF-2.514)

14. Sabir, N., Iqbal, Z., Aleem, A., Awan, T., Naeem, T., Asad, S., Tahir, A.H., Absar, M., Hasanato, R.M.W., Basit, S., Chishti, M.A., Ul-Haque, M.F., Khalid, A.M., **Sabar, M.F.**, Rasool, M., Karim, S., Khan, M., Samreen, B., Akram, A.M., Siddiqi, M.H., Shahzadi, S., Shahbaz, S., Ali, A.S., Mahmood, A., Akram, M., Saeed, T., Saleem, A., Mohsin, D., Shah, I.H., Khalid, M., Asif, M., Iqbal, M., Akhtar, T. (2012) Prognostically Significant Fusion Oncogenes in Pakistani Patients with Adult Acute Lymphoblastic Leukemia and their Association with Disease Biology and Outcome. Asian Pacific Journal Of Cancer Prevention 13(7):3349-55 (IF-2.514)
15. Iqbal, Z., Noreen, S., Aamer, A., Tashfeen, A., Naeem, T., Sultan, A., Tahir, A. H, Absar, M., Chishti, M.A., Faiyaz -ul-Haque, M., Khalid, A. M., **Sabar, M.F.**, Rasool, M., Ali, A.S., Mahmood, A., Akram, M., Saeed, T., Arsalan, S., Mohsin, D., Shah, I.H., Khalid, M., Asif, M., Iqbal, M., Akhtar, T. (2012) Characterization of Common Fusion Oncogenes As Prognostic Molecular Identities in Adult Acute Lymphoblastic Leukemia Identifies the Need for Genetic Testing At Presentation, Molecular Prognostication and Differential Treatment. Blood 120: 5115. (IF-13.164)
<http://www.bloodjournal.org/content/120/21/5115.abstract>
16. Iqbal, Z., Noreen, S., Aamer, A., Tashfeen, A., Naeem, T., Sultan, A., Tahir, A. H, Absar, M., Chishti, M.A., Faiyaz -ul-Haque, M., Khalid, A. M., **Sabar, M.F.**, Rasool, M., Ali, A.S., Mahmood, A., Akram, M., Saeed, T., Arsalan, S., Mohsin, D., Shah, I.H., Khalid, M., Asif, M., Iqbal, M., Akhtar, T. (2012) Detection of Five Common Fusion Oncogenes in Pakistani Children with Acute Lymphoblastic Leukemia and Their Association with Clinical Pattern and Treatment Outcome. Blood 120: 5124. (IF-13.164)
<http://www.bloodjournal.org/content/120/21/5124.abstract?sso-checked=true>

2011:

17. Akbar, H., Idrees, M., Butt, S., **Sabar, M.F.**, Rehaman, I.U., Hussain, A., and Saleem, S. (2011) High base line interleukine-8 level is a independent risk factor for the achievement of sustained Virological response in chronic HCV patients. Infection, genetics and evolution. 11(6):1301-5 (IF-2.885)
18. Iqbal, T., Idrees, M., Ali, L., Hussain, A., Ali, M., Butt, B., Yousaf, M.Z. and Sabar, M.F. (2011) Isolation and characterization of two new Hepatitis E Virus Genotype 1 strains from two Mini-outbreaks in Lahore, Pakistan. Virology Journal. 8:94 (IF-2.139)

2010:

19. **Sabar, M. F.**, Yaqub, M., Khan, M. A., Ahmad, N., Ghani, M. U., Shahid, M. (2010) Synthesis of a new tri-branched PEG-IFN α 2 and its impact on anti viral bioactivity. International Journal of Peptide Research and Therapeutics 16(4):239–245. (IF-0.904)

2009:

20. Tariq, M. A., **Sabir, M. F.**, Riazuddin, S. A., Riazuddin, S. (2009) Haplotype analysis of two X-chromosome STR clusters in the Pakistani population. International Journal Of Legal Medicine 123(1):85-7. (IF-2.382)

2008:

21. Riazuddin, S., Nazli, S., Ahmed, Z. M., Yang, Y., Zulfiqar, F., Shaikh, R. S., Zafar, A. U., Khan, S. N., **Sabar, F.**, Javid, F. T., Wilcox, E. R., Tsilou, E., Boger, E. T., Sellers, J. R., Belyantseva, I. A., Riazuddin, S., Friedman, T. B. (2008) Mutation spectrum of MYO7A and evaluation of a novel nonsyndromic deafness DFNB2 allele with residual function. *Human Mutation* 29(4):502-11. **(IF-4.601)**

2005:

22. Zhang, Q., Zulfiqar, F., Xiao, X., Riazuddin, S. A., Ayyagari, R., **Sabar, F.**, Caruso, R., Sieving, P. A., Riazuddin, S., Hejtmancik, J. F. (2005) Severe Autosomal Recessive Retinitis Pigmentosa Maps to Chromosome 1p13.3-p21.2 between D1S2896 and D1S457 but Outside ABCA4. *Human Genetics* 118(3-4):356-65 **(IF-4.637)**
23. Riazuddin, S.A., Yasmeen, A., Zhang, Q., Yao, W., **Sabar, M. F.**, Ahmad, Z., Riazuddin, S. and Hejtmancik, J. F. (2005). A New Locus for autosomal recessive nuclear cataract mapped to chromosome 19q13 in a Pakistani Family. *Investigative Ophthalmology and Visual Science* 46, 623-626. **(IF-3.303)**
24. Zhang, Q., Zulfiqar, F., Xiao, X., Riazuddin, S. A., **Sabar, F.**, Caruso, R., Sieving, P. A., Riazuddin, S. and Hejtmancik, J. F. (2005) Locus (RP30) for Severe Recessive Retinitis Pigmentosa Maps to Chromosome 1p13. 3–p21. 2 Between D1S2896 and D1S457 but Outside ABCA4. *Investigative Ophthalmology & Visual Science*, 46(13):2291-2291. **(IF-3.303)**

2003:

25. Ahmed, Z. M., Riazuddin, S., Ahmad, J., Bernstein, S. L., Guo, Y., **Sabar, M. F.**, Sieving, P., Riazuddin, S., Griffith, A. J., Friedman, T. B., Belyantseva, I. A., Wilcox, E. R. (2003) PCDH15 is expressed in the neurosensory epithelium of the eye and ear and mutant alleles are responsible for both USH1F and DFNB23. *Human Molecular Genetics* 15; 12(24):3215-23. **(IF-5.340)**

PUBLICATIONS IN HEC RECOGNIZED JOURNALS:

26. Ghani, M. U., **Sabar, M. F.**, Shahid, M., Awan, F. I., Akram, M. (2017) A report on Asthma Genetics Studies in Pakistan. *Advancements in Life Sciences. Adv. Life Sci.* 4(2): 33-38. (review article)
27. **Sabar, M. F.**, Ghani, M. U., Shahid, M., Sumrin, A., Ali, A., Akram, M., Awan, F. I., Tariq, M. A. (2015) Genetic association of ADAM33'S SNP variants with asthma in the population of Lahore region, Pakistan. *Asian J Agri Biol.*, 03(Special Issue): p. 57

ACCEPTED PUBLICATIONS:

28. **Sabar, M. F.**, Akram, M., Awan, F. I., Ghani, M. U., Shahid, M., Iqbal, Z., Kousar, S. (2017) Awareness of Asthma Genetics in Pakistan: A Review with Some Recommendations. *Advancements in Life Sciences. ALS-2016-295-1060-3-SM*
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INTERNATIONAL CONFERENCE ORAL TALKS AND ABSTRACTS:

PAPER/ ABSTRACT/POSTER PRESENTATION:

1. **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

2. 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
3. **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 International Conference on Biotechnology, USA journal of R&D, Page 58
4. **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
5. **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
6. **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
7. 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
8. 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
9. 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
10. **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.

11. **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.
 12. 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.
 13. 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
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GENEBANK (NCBI) SUBMISSIONS OF DNA SEQUENCES:

Following are the accession numbers of sequences submitted to GenBank database (**Total 18 sequences**)

1. PCDH15 Gene:

Accession Numbers:
AY388963.1

2. Cytochrome b gene Pakistani water buffalo (Nili-Ravi breed)

Accession Numbers:
JF946524.1, JF946522.1, JF946520.1, JF946525.1, JF946523.1, JF946521.1, JF946519.1

3. Hepatitis E virus:

Accession Numbers:
FJ959398.1, FJ959399.1

4. Hepatitis C virus:

Accession Numbers:
GU736411.1, GU736410.1, GQ300882.1, GQ325251.1, GQ898898.1, GQ451336.1

5. Hepatitis B Virus:

Accession Numbers:
FJ966118.1, FJ966116.1

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)

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

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

MEMBERSHIP OF INTERNATIONAL SOCIETIES:

1. American Chemical Society
 2. Congress of Molecular Biology (Executive member)
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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-continued) 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- continued) Member Technical Evaluation Committee
 9. (2010-2015) Chairman CAMB Departmental Inquiry Committees
 10. (2015-continued) Member Board of studies CAMB, PU, Lahore
 11. (2016-continued) Member Departmental Doctoral Program Committee (DDPC), CAMB, PU, Lahore
 12. (2016-continued) Focal Person Laptop Scheme
 13. (2017-continued) Coordinator MPhil studies program “Molecular Biology and Forensic Sciences” at CAMB, PU
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TEACHING:

- Molecular Biology and Forensic Sciences courses to MPhil and PhD scholar
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PROJECTS/ MOUS/TASKS:

1. HEC has funded more than **3.0 M** in year 2018 till June 30th.

2. Provision of DNA analysis services to Pakistani researcher (**HEC Sponsorship- >4.5 M-2017**) *Continuous activity since 2005*
3. 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 (**1.81343 M-2018**) *in Progress*
4. MoU with King Edward Medical University, Lahore for research collaboration providing DNA analytical services (**2018**) *in Progress*
5. 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**) *Completed*
6. Investigation of association of CHI3L1 gene variants with the manifestation of asthma in Pakistani population (Punjab University Project-**0.15M-2016**) *Completed*
7. 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**) *Completed*
8. Establishment of DNA sequencing lab (1999) CAMB/CEMB, Lahore.
9. Establishment of DNA synthesis lab (2006) CAMB/CEMB, Lahore.
10. Developed PEGylation of recombinant proteins Technology at CAMB
11. Completed a project of DNA analysis for breed improvement from the department of Breed Improvement and Live Stock, Punjab.
12. Studies on the Associations of Single Nucleotide Polymorphisms (SNPs) with Asthma Disease in Pakistani Population. (PhD, MPhil and MSc students have completed theses on this project)

POINEER OF AUTOMATED DNA SEQUENCING IN PAKISTAN:

1. Started Sanger technology based automated DNA sequencing and DNA primer/oligos synthesis first time in Pakistan
 2. Managing and maintaining DNA Core facility of CAMB since 1999.
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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)- just starting

WORKSHOPS, SEMINARS CONFERENCES ORGANIZED

1. (2016) One day awareness seminar on “Lungs and Bronchial Diseases” at CAMB, PU, Lahore
2. (2016) Hands on Training on Advances in Nucleic Acid Technology at CAMB, PU, Lahore.
3. (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.
4. (2017) One day seminar on “Advances in PCR Technology; Power to Detect Single Copy Without Standard Curves”

BRIEF INTRODUCTION:

After joining CAMB in 1996, I established the first DNA sequencing/genotyping lab of Pakistan in 1999. I contributed in many research projects by providing the quality DNA genotyping/sequencing analysis data and has trained indigenous manpower in the field. New loci/genes for genetic diseases have been identified in his labs. Data for thousands of DNA profiles has been generated by my group in murder, rape, bomb blast and other criminal cases. I have contributed in more than 500 research publications and hundreds of PhD/MPhil theses. I have earned more than 109 impact factor and over 477 citations through 26 quality data publications.

As a HoD, I offered DNA sequencing/genotyping and synthesis in 2005 throughout the country and abroad. I also got HEC sponsorship and have earned more than Rs.100 Millions for the department through these services. I am helping researchers/academicians in genomics analyses throughout the country. Due to DNA analysis facility and my expertise in the field, first DNA forensic lab of Pakistan was also established at CAMB. Besides this, during my PhD (2010) I succeeded to produce a unique tri-branched PEG-IFN (HCV medicine) which exhibited better therapeutic properties than linear/di-branched PEG-IFNs already in use worldwide.

During my Postdoc fellowship, I worked on cancer genetics at KFSH&RC, KSA. Currently, along with teaching MPhil/PhD students, I am investigating contribution of

genomic variants in asthma development in Pakistan. In my recent research publications, I have reported genomic regions associated with asthma and specifically some variants associated with asthma in specific environment. Being HEC approved supervisor I have supervised **one PhD, ten MPhil and one MS on asthma studies and population genetics** and currently supervising seven MPhil and four PhDs on molecular genetics of diseases including asthma. In future plans, I intend to study molecular biology and genomics of asthma and other diseases in detail using latest next generation analytical techniques. The outcome of the research may be commercialized in future.