

# MUHAMMAD AKRAM

*Research Officer  
DNA Core Facility  
Centre for Applied Molecular Biology  
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## **POSTAL ADDRESS**

**Office:** Centre for Applied Molecular Biology, 87-West Canal Bank, Thokar Niaz Baig, Lahore-53700, Pakistan

## **EDUCATION**

M.Phil in Molecular Biology and Forensic Science                      2018  
University of the Punjab Lahore

## **AREAS OF INTEREST**

- Molecular Genetics
- Human Recombinant Proteins
- DNA Sequencing and Genotyping
- Bioinformatics

## **SCIENTIFIC AND RESEARCH EXPERIENCE**

- I have joined Centre for Applied Molecular Biology as Research Officer in 2008. Group wise scientific and research activities are

### ***DNA Core Facility***

#### **1) Research (Asthma Genetics Research Group)**

Working as team member in Asthma Genetics Research Group on “**genetic association of different SNP variants of different genes with asthma in Pakistani Population**”

Worked on “**Asthma susceptible variants in vascular endothelial growth factor-A and Transforming growth factor- $\beta$ 1 genes**” as my M.Phil research work.

#### **2) Commercial Services**

Providing commercial services for DNA Sequencing analysis and DNA Genotyping to almost all the Universities and R&D organizations of Pakistan.

### ***BIOPHARMACEUTICAL LAB***

My scientific and research activities in Biopharmaceutical Lab as a group member are

- Molecular Cloning
- Expression studies, fermentation and purification of different human recombinant proteins.
- Recombinant protein purification using AKTA Explorer and AKTA Pilot purification systems.
- PEGylation of human recombinant proteins and purification of mono PEGylated proteins at lab scale.
- Different quality control tests for recombinant proteins characterization.

## **INSTRUMENTATION SKILLS AND MOLECULAR BIOLOGY TECHNIQUES**

Good command on following scientific equipments and molecular biology techniques

- AKTA PILOT Protein Purification System
- AKTA Explorer Protein Purification System
- Handling and Maintenance of Cell Lines
- Genetic Analyzers (ABI-3730 and ABI 3130)
- High Performance Liquid Chromatography (HPLC)
- Gas Chromatograph (GC)
- UV-Vis Spectrophotometer
- Microscopy
- SNaPshot reaction
- PCR
- Peptide Mapping
- SDS-PAGE
- Agarose Gel Electrophoresis
- Iso-electric Focusing
- Western Blotting
- Sequencing PCR
- SNaPshot reaction
- Genotyping and DNA Fragment Analysis
- DNA/RNA extraction both using commercial kits as well as manual methods
- And other basic molecular biology techniques.

## **BIOINFORMATICS SKILLS**

Good command on different bioinformatics tools used for DNA sequencing analysis and DNA fragment analysis and primer designing such as

- Sequencing Analysis
- GeneMapper
- Chromas
- Primer3

Also have a good command on different software used for basic statistics, LD & Haplotype Structure determination, statistical analysis of genetic markers including microsatellite data, single nucleotide polymorphism (SNP) data, and genetic association analysis

- IBM SPSS Statistics 20
- Haploview 4.2
- Power Marker v 3.25
- SHEsis

## **WORKSHOPS, TRAININGS AND CONFERENCES**

- Organized a one day seminar on “Biosafety Training for Young Researchers” jointly conducted by American Society of Microbiology International Student Chapter, University of the Punjab and Centre for Applied Molecular Biology (CAMB), University of the Punjab on November 29, 2018.
- Participated in an international conference on “ Trends and Prospects in Molecular Biosciences ” organized by Institute of Biochemistry and Biotechnology, University of the Punjab, Lahore, Pakistan on October 23-24, 2017.
- Participated in a conference on “ Emerging trends in Bioinformatics and Biosciences” organized by Department of Bioinformatics, Hazara University, Mansehra, KP, Pakistan on July 20-22, 2017.
- Participated in a seminar on “Advances in PCR Technology” jointly organized by CAMB and Chemical House Lahore Pakistan on April 5, 2017.
- Organized an “Awareness seminar on Lungs and Bronchial Diseases” conducted by Centre for Applied Molecular Biology (CAMB), University of the Punjab in collaboration with Pakistan Chest Society and Gull’s Association on November 17, 2016.
- Participated in a conference on “DNA Day & NAYS Emerging Ideas Conference” organized by National Academy of Young Scientists (NAYS) and Centre of Excellence in Molecular Biology with sponsorship of The Emerging Nations Science Foundation (ENSF) on 25<sup>th</sup> April 2013.

## **PUBLICATIONS**

- Fakiha Aslam, Nadeem Ahmed, Mohsin Ahmad Khan, Farhana Azam, **Muhammad Akram**, Saad Tahir, and Ahmad Usman Zafar “ **Evaluating the ion exchange chromatography for matrix-assisted PEGylation and purification of consensus interferon**” *Biotechnol Appl Biochem* (2019). <https://doi.org/10.1002/bab.1832>
- Muhammad U. Ghani, Muhammad F. Sabar, Iqbal Bano, Mariam Shahid, **Muhammad Akram** “**RAD 50 gene is associated with asthma susceptibility in Pakistani children**” (Accepted for poster presentation World Allergy Congress to be held in Lyon, France on December 12-14, 2019. Impact Factor 3.684)
- Muhammad U. Ghani, Muhammad F. Sabar, Iqbal Bano, Mariam Shahid, **Muhammad Akram**, Ifrah Khalid, Alishba Maryam, Muhammad U. Khan. “**Evaluation of ADAM33 gene’s single nucleotide polymorphism variants against asthma and the unique pattern of inheritance in Northern and Central Punjab, Pakistan**” *Saudi Med J* 2019; Vol. 40 (8). DOI: 10.15537/smj.2019.8.24411
- M.U. Ghani, M.F. Sabar, I. Bano Dr., M. Shahid, **M. Akram**, I. Khalid, A. Maryam, M.U. Khan “**Inheritance pattern of rs2280089, rs2280090, rs2280091 snp variants in Punjabi population and association with asthma disease**” (*CHEST Journal*, April 2019 Volume 155, Issue 4, Supplement, Page 168A Impact Factor 7.6)
- Rukhsana Perveen, Ahmad Ali Shahid, Muhammad Shafique, Muhammad Shehzad, **Muhammad**

**Akram, “Kashmiris phylogenetic depictions through uniparental and biparental genetic markers”**, International Journal of Legal Medicine (2019), <https://doi.org/10.1007/s00414-019-02082-5>.

- Muhammad Farooq Sabar, Muhammad Akram, Farheena Iqbal Awan, Muhammad Usman Ghani, Mariam Shahid, Zafar Iqbal, Samra Kousar, Muhammad Idrees: **Awareness of Asthma Genetics in Pakistan: A Review with Some Recommendations** Adv. life sci., vol. 6, no. 1, pp. 1-10, November 2018
- Muhammad Farooq Sabar, Mariam Shahid, Iqbal Bano, Muhammad Usman Ghani, **Muhammad Akram**, Farheena Iqbal, Samra Kousar, Zafar Iqbal, Saba Altaf & Tayyab Husnain, **“rs12603332 is associated with male asthma patients specifically in urban areas of Lahore, Pakistan”**, Journal of Asthma (2017), 54:9, 887-892 <http://dx.doi.org/10.1080/02770903.2016.1277539>
- Muhammad Usman Ghani, Muhammad Farooq Sabar, Mariam Shahid, Farheena Iqbal Awan, **Muhammad Akram**, **“A report on asthma genetics studies in Pakistani population”**, Advancements in Life Sciences (2017), Feb;4(2):33-38. ISSN 2310-5380.
- Muhammad Farooq Sabar, Muhammad Usman Ghani, Mariam Shahid, Aleena Sumrin, Amjad Ali, **Muhammad Akram**, Muhammad Akram Tariq & Iqbal Bano: **“Genetic variants of ADAM33 are associated with asthma susceptibility in the Punjabi population of Pakistan”**, Journal of Asthma (2016), DOI: 10.3109/02770903.2015.1124441
- Ahmed, N., H. Bashir, A. U. Zafar, M. A. Khan, S. Tahir, F. Khan, M. I. Khan, **M. Akram** and T. Husnain. **“Optimization of conditions for high-level expression and purification of human recombinant consensus interferon (rh-cIFN) and its characterization.”** Biotechnol Appl Biochem (2015) Sep;62(5):699-708. doi: 10.1002/bab.1320. Epub 2015 Jan 30.

## ABSTRACT PUBLICATIONS

- Muhammad Farooq Sabar, Muhammad Usman Ghani, Farheena Iqbal Awan, Mariam Shahid **Muhammad Akram** and Iqbal Bano **“ Role of Genomic Variants in Predisposition of Asthma in Pakistani Patients”** 3<sup>rd</sup> International Conference on Biotechnology 8-9 February 2017(USA Journal of R&D)
- Muhammad Usman Ghani, Muhammad Farooq Sabar, Iqbal Bano, Mariam Shahid, **Muhammad Akram** and Nadeem Sheikh **“ADAM33 gene variants rs2280089, rs2280090, rs2280091 are not associated with asthma in local Patients”** 2nd International Biennial CardioRespiratory Conference-2017” 03-05 March, 2017.
- Muhammad Farooq Sabar, Muhammad Usman Ghani, Farheena Iqbal Awan, Mariam Shahid, **Muhammad Akram** and Iqbal Bano **“Significance of Vitamin-D Receptor Gene Polymorphism as a Biomarker for Asthma in Punjabi Population of Pakistan”** ICAFS2017&7th ICBB
- Muhammad Farooq Sabar, Muhammad Usman Ghani, Mariam Shahid, Aleena Sumrin, Amjad Ali, Farheena Iqbal, **Muhammad Akram**, Muhammad Akram Tariq, Muhammad Iqbal **“ Genetic association of ADAM33’s SNP variants with Asthma in the Population of Lahore Region, Pakistan”** (Asian J Agri Biol, Special Issue-2015)

