



GENETIC AND MOLECULAR EPIDEMIOLOGY RESEARCH GROUP



GROUP INTRODUCTION

Genetic and Molecular Epidemiology Research Group works on the implementation of Integrated Molecular Genetics and genomics approaches to understand the complexities of Inherited Genetic Diseases, their characterization at molecular level and strategies for their control & prevention. The research group focuses on Infectious Diseases, Causative Microbes and corresponding Immune Responses by the host. The group is also employing Bioinformatics and Computational Biology approaches to analyze and interpret the vast amount of genomic data available on public databases and utilization of this data with full potential to progress the scientific understanding in human health and disease.

GROUP HEAD

Dr. Syeda Marriam Bakhtiar

Dr. Syeda Marriam Bakhtiar completed her PhD in Human Molecular Genetics from National Institute of Biotechnology and Genetic Engineering, Quaid-i-Azam University, Faisalabad. Her research interests include molecular understanding of inherited diseases/disorders and other infectious diseases more prevalent in Pakistan. She served as research assistant at Department of Bioinformatics, Federal University of Minas Gerais, Brazil. She is honored to accomplish the European Molecular Biology Organization (EMBO) fellowship in Wilhelm Johansen Center for Functional Genomics, University of Copenhagen, Denmark. She is an active member of American Society of Microbiology. Currently she is serving as Assistant Professor at Department of Biosciences, CUST, Islamabad where she is also vigorous member of numerous professional bodies, notably Health and Safety Committee, Quality Assurance Committee, Curriculum Review Committee etc.



RESEARCH AREAS

- Human Molecular Genetics
- Genetic and Molecular Epidemiology
- Gut Brain Axis
- Host Pathogen Interactions
- Metabolomics

CURRENT MS/Ph.D. STUDENTS

PhD Students

1. Ms. Hina Aslam Butt
2. Mr. Naveed Iqbal Soomro
3. Mr. Muhammad Qasim Khan
4. Ms. Sobia Khurshid

MS Students

1. Ms. Hajra Qayyum
2. Ms. Qurat ul ain
3. Ms. Ayesha Aftab
4. Ms. Nosheen Afzal Qureshi
5. Ms. Maham Fayyaz
6. Ms. Sadaf Kiyani
7. Ms. Shabeen Fatima

SELECTED ALUMNI

Mr. Saeed Iqbal

Thesis Title:Prevalence of Inflammation Associated Diseases in Obese and Non-Obese Subjects of Kahuta Region. **Year: 2018**

Mr. Hammad Safdar Ali

Thesis Title:Prevalence of Hepatitis B and Hepatitis C in Relation to Minor Risk Factors in Kahuta Region. **Year: 2018**

Mr. Muhammad Nadeem

Thesis Title:Impact estimation of inflammatory genes IL-6, TNF-alpha and ACE on diabetes and obesity as comorbidity of CAD. **Year: 2017**

Ms. Hina Aslam Butt

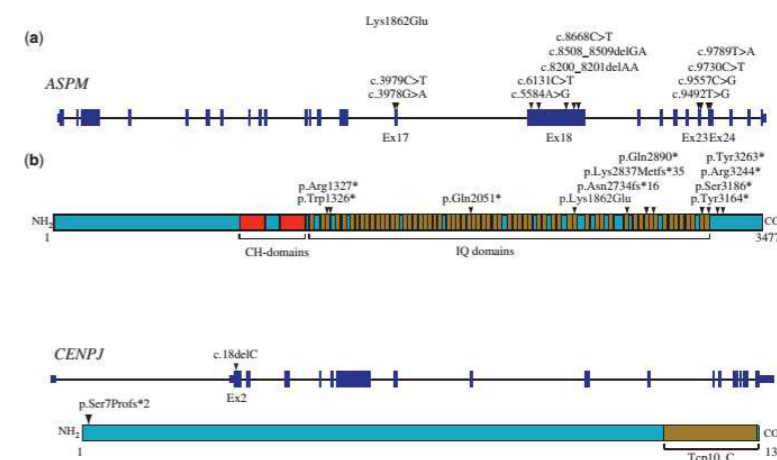
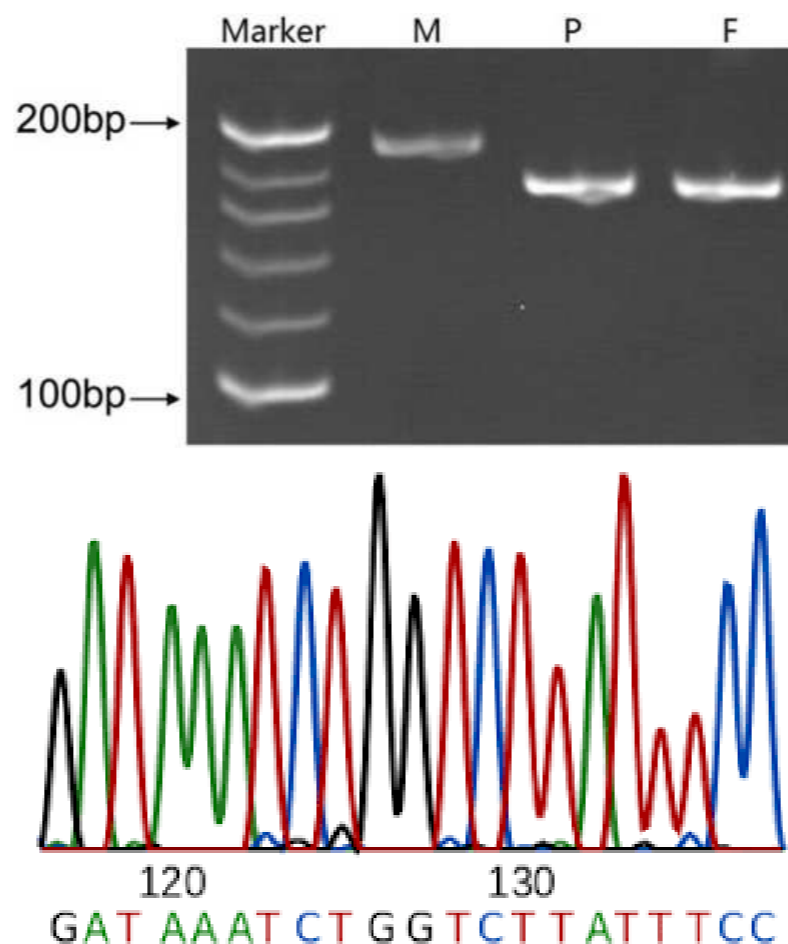
Thesis Title:Genetic heterogeneity in Pakistani Obese individuals. **Year: 2017**

Ms. Saima Gul

Thesis Title:Prevalence and functional analysis of commonly reported SNPs in Pakistani obese kindreds. **Year: 2017**

Ms. Sidra Azam

Thesis Title:Prevalence of Genetic and Non Genetic risk factors for Diabetes among Obese Individuals. **Year: 2017**



Selected Publications

Journal Publications

- M. Nadeem, U. Naz, and S. M. Bakhtiar, "TNF: Common Culprit of Inflammatory diseases", *Journal of Bioautomation*, 2019.
- F. Nawaz, M. N. Khan, A. Javed, I. Ahmed, N. Ali, M. I. Ali, S. M. Bakhtiar, and M. Imran, "Genomic and Functional Characterization of *Enterococcus mundtii* QAUEM2808 Isolated from Artisanal Fermented milk product Dahi", *Frontiers in Microbiology*, vol. 10, pp. 1–16, 2019.
- M. Farooq, Y. Mang, S. M. Bakhtiar, A. Fatima, et al, "A Novel Mutation in CDK5RAP2 Gene Causes Primary Microcephaly With Speech Impairment And Sparse Eyebrows in a Consanguineous Pakistani Family", *European Journal of Medical Genetics*, vol. 60, no. 12, pp. 627–630, 2017.
- N. Farah, A. Mehdi, S. I. Soomro, N. I. Soomro, R. Tereb, S. M. Bakhtiar, and M. Imran, "Draft Genome Sequence of *Enterococcus Mundittii* QAUEM2808, Isolated From Dahi, A fermented Milk Product", *Genome Announcement*, vol. 4, no. 5, p. e00995-16, 2016.
- S. T. Ashraf and S. M. Bakhtiar, "Exploring the Protein Interaction Related to Hepatitis C Virus", *NUST J. Nat Sci*, vol. 3, no. 1, pp. 13–18, 2015.
- H. Safdar, R. Ali, and S. M. Bakhtiar "Implementation of Mathematical Models for HCV Infection", *J. Appl. Environ. Biol. Sci*, vol. 6, no. 2S, pp. 109–113, 2016.
- H. A. Butt and S. M. Bakhtiar, "Identification and Classification of bacterial Auto transporters", *Jurnal Teknologi (Sciences & Engineering)*, vol. 78, no. 4-3, pp. 47–51, 2016.
- A. Ali, A. Naz, S. C. Soares, S. M. Bakhtiar, et al, "Pangenome Analysis of Human Gastric Pathogen *H. pylori*: Comparative Genomics and Pathogenomics Approaches to Identify Regions Associated with Pathogenicity and Prediction of Potential Core Therapeutic Targets", *Biomed Res Int*, vol. 2015, pp. 1–17, 2015.

Conference Proceedings

- N. Afzal, H. Qayyum, N. I. Soomro, and S. M. Bakhtiar "miRNA silencing of *Streptococcus gallolyticus*: a potential treatment strategy against endocarditis", *1st international conference on medicinal chemistry & drug discovery, Islamabad*, 2018.
- H. A. Butt, S. M. Bakhtiar, A. Noor, and I. Riasat "Genetic Heterogeneity in Pakistani Obese Families", *1st Annual Health Research Conference, Islamabad*, 2018.
- S. I. Soomro, H. Safdar, N. T. Soomro, H. A. Butt, and S. M. Bakhtiar, "The prevalence of Inflammatory Disorders in Obese and Non-Obese Subjects of Kahuta Region", *1st Annual Health Research Conference, Islamabad*, 2018.