



Cancer Cytogenetics Research Group



GROUP INTRODUCTION

The Cancer Cytogenetics Research Group at Capital University of Science & Technology, Islamabad is headed by Dr. Shaukat Iqbal Malik, Professor, Biosciences Department. The Research Group is passionate to work on diverse research areas within the domains of Cancer Genetics, Microbial Genetics, Thalassemia, Bladder Tumor, MDR on Typhi, MDR on TB and Human Genetic Diseases.

GROUP HEAD

Prof. Dr. Shaukat Iqbal Malik

Prof. Dr. Shaukat Iqbal Malik is a highly reputed Bio Scientist. He has accomplished two Post Doctorates in Cancer Biology and DNA Repair & Cytogenetics from UNC Chapel Hill and USEPA-RTP NC, USA respectively. He received his PhD degree from National & Kapodestrian University of Athens. His key areas of research are Molecular Genetics, Cancer Cytogenetics, Comet Assay, Micro-arrays Gene Expression & Data Analysis etc. He has served in prestigious national and international institutes including Agriculture University of Athens, University of Qatar and National University of Science & Technology, Islamabad. Dr. Shaukat is a regular publisher in national and international journals and conferences of highest repute. He has worked on Research Project under National Research Program for Universities entitled "Genotoxicity Testing of Pesticides, Plant Protection Products by means of Premature Chromosome Condensation (PCC) in Peripheral Blood lymphocytes" worth 4 Million PKR in 2007. He is recipient of numerous national and international trainings and certifications. He remained on key academic and managerial positions in his career. Currently he is serving as professor in the Department of Biosciences and as Director Volunteers in Service (VIS) at Capital University of science and technology, Islamabad.



Awards and Distinctions of Head

- Award of Short Course training Scholarship by Jaxon Lab Bar Harbor, USA in 2008-2009
- Best Faculty Performance Award from BUIETMS, Quetta in 2005-2006
- Award of SAARC Biotechnology Chair by Government of Pakistan in 2006
- Earned Scholarship for PhD from European Union DAC program via Greek Ministry of Education and Religious Affairs, Athens

RESEARCH AREAS

- Cancer Cytogenetics
- Comet Assay
- Micro-arrays Gene Expression & Data Analysis
- Human Genetic Diseases
- Drug Resistant Determination

GROUP MEMBERS

1. Dr. Sahar Fazal
2. Mr. Muhammad Tahir Khan
3. Mr. Shahid Khan
4. Ms. Hina Ehsan
5. Ms. Faiqa Rasheed
6. Ms. Maria Noureen

SELECTED MS/PhD ALUMNI

Ms. Sana Masood:

Thesis Title: Insilico Modeling of Hepatotoxic Drug used in Non-Small Cells Lung Cancer (NSCLC) and new Drug Dosage Criteria Design
Year: 2019

Ms. Sadia Arif:

Thesis Title: Biological Evaluation and Comparison of Nigella Sativa (Kalonji) and Trachyspermum Ammi (Ajwain)
Year: 2019

Ms. Sarwat Rabab Kazmi:

Thesis Title: Relationship between ABO blood groups and Lipid Profile level in Adults Residents of Mirpur Azad Kashmir
Year: 2019

Ms. Zoya Khalid:

Thesis Title: A high throughput Computational (In-silico Analysis of Claudin Gene Family in Human Ovarian Cancer)
Year: 2018

Ms. Sheema Sameen:

Thesis Title: In-Silico Analysis of Papillary Thyroid Carcinoma Gene Mutation by the Evaluation of Gene Expression in Normal and Malignant Tissues
Year: 2018

Mr. Sajid Khan:

Thesis Title: Genetic Analysis of hereditary Polydactyly in Pakistani Families
Year: 2018



SELECTED JOURNAL PUBLICATION

- M. T. Khan and S. I. Malik, "Structural dynamics behind variants in pyrazinamidase and pyrazinamide resistance," *Journal of Biomolecular Structure and Dynamics*, pp. 1–15, 2019.
- A. D. Kligerman, S. I. Malik, and J. A. Campbell, "Cytogenetic insights into DNA damage and repair of lesions induced by a monomethylated trivalent arsenical," *Mutation Research/Genetic Toxicology and Environmental Mutagenesis*, vol. 695, no. 1–2, pp. 2–8, 2009.
- M. N. Shahwani, S. Nisar, S. Afridi, and S. I. Malik, "Amplification of Mitochondrial DNA for detection of Plasmodium vivax in Balochistan," *J Pak Med Assoc*, vol. 67, no. 5, pp. 677–681, 2017.
- S. I. Malik, G. I. Terzoudi, and G. E. Pantelias, "SCE analysis in G2 lymphocyte prematurely condensed chromosomes after exposure to atrazine: the non-dose-dependent increase in homologous recombinational events does not support its genotoxic mode of action," *Cytogenet Genome Res*, vol. 104, no. 1–4, pp. 315–319, 2004.
- M. T. Khan, A. Khan, A. U. Rehman, Y. Wang, K. Akhtar, S. I. Malik, and D. Q. Wei, "Structural and free energy landscape of novel mutations in ribosomal protein s1 (rpsa) associated with pyrazinamide resistance," *Scientific Reports*, vol. 9, no. 1, p. 7482, 2019.
- G. I. Terzoudi, S. I. Malik, G. E. Pantelias, K. Manola, and W. Makropoulos, "A new cytogenetic approach for the evaluation of mutagenic potential of chemicals that induce cell cycle arrest in the G2 phase," *Mutagenesis*, vol. 15, no. 6, pp. 539–43, 2003.
- M. T. Khan, A. C. Kaushik, S. I. Malik, S. Ali, and D. Wei, "Artificial neural networks for prediction of tuberculosis disease," *Frontiers in Microbiology*, vol. 10, no. 1, p. 395, 2019.
- M. Junaid, M. T. Khan, S. I. Malik, and D. Q. Wei, "Insights into the Mechanisms of the Pyrazinamide Resistance of Three Pyrazinamidase Mutants N11K, P69T, and D126N," *Journal of Chemical Information and Modeling*, vol. 59, no. 1, pp. 498–508, 2019.
- A. U. Rehman, M. T. Khan, H. Liu, A. Wadood, S. I. Malik, and H. F. Chen, "Exploring the Pyrazinamide Drug Resistance Mechanism of Clinical Mutants T370P and W403G in Ribosomal Protein S1 of Mycobacterium tuberculosis," *J Chem Inf Model*, vol. 59, no. 4, pp. 1584–1597, 2019.
- A. Munir, S. I. Malik, and K. A. Malik, "De-novo ligand design against mutated huntington gene by ligand-based pharmacophore modeling approach," *Current Computer Aided Drug Design*, vol. 15, pp. 1–10, 2018.

