DR. MARIA TAYYAB BAIG

PERSONAL PROFILE

- Father's Name: Muhammad Tayyab Baig
- Date of Birth: September 10, 1984
- CNIC: 35202-7939655-2
- Domicile: Lahore
- Marital status: Single
- Religion: Islam
- E mail baig.maria@yahoo.com

AREAS OF STRENGTH

- Adequate knowledge and background of Molecular Biology, Cell Biology, Microbiology, Molecular Genetics, Human Genetics and Biochemistry.
- Good comprehension of scientific information and its application.
- Determination, persistence, problem solving, goal orientation and adaptability to new situations.
- Appreciate positive criticism and learn from it.
- Good communication and effective presentation skills

CURRENT POSITION

Research Officer cum Lecturer

National Centre of Excellence in Molecular Biology,
University of the Punjab, 87-West Canal Bank Road,
Thokar Niaz Baig, Lahore, Pakistan.

EDUCATION

2015-2022 Punjab University Lahore
PhD Molecular Biology 3.86 CGPA

2013-2015 Punjab University Lahore
M.Phil Molecular Biology 4.00 CGPA

2003-2007 Punjab University Lahore
BSc. Hons. Microbiology and Molecular Genetics 3.72 CGPA

2000-2002 Govt. Jinnah Degree College Lahore
F.Sc., Pre-Medical. 793 out of 1100

1998-2000 Al-Marooj Grammar Girls High School Lahore
Matriculation, Science 668 out of 850

RESEARCH EXPERIENCE (2006– TO DATE)

1. STEM CELLS (2008-TO DATE)

I am working as research officer cum lecturer at Centre of Excellence in Molecular Biology (CEMB) since 2008. My research has been focused on stem cell therapy for liver regeneration since 2008 to date. I was enrolled in M.Phil. degree at CEMB from 2013 to 2015. I finished my M.Phil. degree from CEMB is 2015 with thesis entitled "Preconditioning of adipose derived stem cells with serum from acute liver injury model enhance their therapeutic potential for liver fibrosis". I published my M.Phil. study in international peer review journal "Growth Factors" entitled "Serum from CCl4-induced acute rat injury model induces differentiation of ADSCs towards hepatic cells and reduces liver fibrosis" in 2017.

I have recently completed my PhD degree in April 2022 from CEMB with thesis entitled "Antioxidant preconditioning of mesenchymal stem cells for treatment of damaged liver". My PhD research was published in Biochemical Pharmacology with impact factor of 5.85 entitled "Vitamin E pretreated Wharton's jelly-derived mesenchymal stem cells attenuate CCl4-induced hepatocyte injury in vitro and liver fibrosis in vivo" in 2021.

The skills involved in the above-mentioned research were

1. Isolation and characterization of Stem Cells from human and rodent source.
2. Preparation of liver fibrosis rat models and in vitro hepatocyte injury model
3. Transplantation of isolated stem cells in the rat liver fibrosis models
4. Proteomic and gene expression analysis after transplantation
5. Histopathological analysis of the sample tissues after transplantation
6. Statistical analysis by Graphpad Prism

2. GENETIC DISEASES (2006-2007)

Worked on carrier detection of Haemophilia A at The Children's Hospital and The Institute of Child Health, Lahore as part of thesis requirement for BSc. (Hons.) degree. The work included:

1. Sample collection and recording patient and family history
2. Pedigree Analysis
3. DNA extraction from blood
4. PCR for detection of allelic variants of intron 13 CA repeats in patient and his family
5. Data analysis for carrier detection in siblings of the Haemophilia A patient.

ACHIEVEMENTS

- Won Two Gold Medals in M. Phil
- Won National Science Communication Challenge 2014 organized by American Society of Microbiology, CEMB and NAYS
- Won Scholarship during my B.Sc. [Hons.] in sixth semester 2006.
- Won Scholarship in 8th Grade for Highest Score in the School
- Prefect of the School
- Position holder throughout school life.

LABORATORY SKILLS

- Stem Cell Culturing and Maintenance
- Immunostaining
- RNA Extraction
- Protein Extraction
- Reverse Transcriptase PCR
- Animal Transplantation
- Spectrophotometry
- Polymerase Chain Reaction (PCR)

- Agarose Gel Electrophoresis
- Polyadcylamide Gel Electrophoresis
- DNA extraction
- Microscopy
- Histology
- Identification and culturing of Pathogens
- Thin Layer Chromatography
- Nanodrop Spectrophotometry
- FACS
- Statistical Analysis

COMPUTER SKILLS

- MS Word
- MS PowerPoint
- Excel
- MS Paint
- Photo Editing
- Internet

SCIENTIFIC SYMPOSIA/MEETINGS ATTENDED

- A symposium on **"Future Trends in Molecular Biological Research and its Application in Agriculture & Health"** March 25-28, 2009. Organized by Centre of Excellence in Molecular Biology and Centre for Applied Molecular Biology, University of the Punjab, Lahore, Pakistan.
- Workshop on **"Ethical Issues Related to Work on Stem Cells"** March 20, 2009. Organized by Centre of Excellence in Molecular Biology and Centre for Applied Molecular Biology, University of the Punjab, Lahore, Pakistan.
- 2nd one day workshop on **"Young Researchers' Skill Development and NAYS Emerging Ideas Conference"** January 07, 2012. Organized in collaboration between National Academy of Young Scientists and Centre of Excellence in Molecular biology.
- International conference on **"Recent Innovations in Molecular Biology"** November 06-08, 2019. Organized by University of the Punjab.

- 4th International symposium on **"Advances in Molecular Biology of Plants and Health Sciences"** December 23-24, 2021. Organized by Centre of Excellence in Molecular Biology, University of the Punjab.

PUBLICATIONS

1. Ghufran H, Azam M, Mehmood A, Ashfaq R, **Baig MT**, Malik K, Shahid AA, Riazuddin S. Tumoricidal effects of unprimed and curcumin-primed adipose-derived stem cells on human hepatoma HepG2 cells under oxidative conditions. Tissue and Cell. 2022 Oct 31:101968.

   Impact Factor: 2.586

2. **Baig MT**, Ghufran H, Mehmood A, Azam M, Humayun S, Riazuddin S. Vitamin E pretreated Wharton's jelly-derived mesenchymal stem cells attenuate CCl4-induced hepatocyte injury in vitro and liver fibrosis in vivo. Biochemical Pharmacology. 2021 Apr 1;186:114480.

   Impact Factor: 5.858

3. Riazuddin S, **Baig MT**, Mehmood A. 7. Cell therapy for liver regeneration. In Stem Cells–From Hype to Real Hope 2018 Dec 17 (pp. 130-145). De Gruyter.

4. **Baig MT**, Ali G, Awan SJ, Shehzad U, Mehmood A, Mohsin S, Khan SN, Riazuddin S. Serum from CCl4-induced acute rat injury model induces differentiation of ADSCs towards hepatic cells and reduces liver fibrosis. Growth Factors. 2017 Sep 3;35(4-5):144-60.

   Impact Factor: 2.511

5. Awan SJ, **Baig MT**, Yaqub F, Tayyeb A, Ali G. In vitro differentiated hepatic oval-like cells enhance hepatic regeneration in CCl4-induced hepatic injury. Cell biology international. 2016 Dec 13.

   Impact Factor: 3.612

LANGUAGES

Proficient in English and Urdu.

REFERNCES

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