CURRICULUM VITAE

Personal Information

Name: Muhammad Abid Sheikh

Date of birth: 12-08-1984

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Education

Ph.D. (2009-2013) in cell biology, Northeast Normal University, Changchun, China. Thesis title: Identification of novel targets of DNA methyltransferase 3b, their regulation of expression and function in neuronal differentiation.

B.Sc. **Hons.** (2003-2007) in Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan. CGPA = 3.76. Overall percentage marks (OPM) = 78.90%. Thesis title: Non-ribosomal peptide antibiotics from Bacillus: Production and genetic studies.

Distinctions and Awards

- Awarded cultural exchange scholarship which is a joint venture of Ministry of Education, Pakistan and China scholarship counsel (CSC) for Ph.D. studies in china
- Awarded merit scholarship (3 times) during B.Sc. Hons. Studies from University of the Punjab, Lahore, Pakistan.
- 5th position in B.Sc. Hons. Class of 2007.

Professional Expertise

Skilled in the development of in vitro as well as in vivo models of Parkinson's disease (PD). Skilled in gene delivery using Polymeric nanomaterials for in vitro as well as rodents model of neurodegenerative disorders especially Parkinson's disease

(PD). Skilled in maintenance and propagation of stem cell cultures as well as determination of self renewing properties of stem cells. Experienced in various techniques of cell biology including differentiation of stem cells, neuronal stem cell isolation and differentiation, primary culture of neurons, cell transfections, lentiviral mediated gene transfer to cultured stem cells, knockdown and overexpression studies, various assays used for cell proliferation, cell viability, and apoptosis. Especially skilled in techniques used to study protein-DNA interaction in context to chromatin, various modifications of Chromatin Immunoprecipitation (ChIP) assay either coupled with library construction for finding novel targets or ChIP followed by normal as well as quantitative real time PCR analysis. Skilled in various assays used for DNA methylation including Bisulfite genomic sequence analysis (BGS), Combined Bisulfite Restriction analysis (COBRA), and methylation specific PCR (MSP). Skilled in various types of PCR including colony PCR, quantitative real time PCR analysis for mRNA expression studies, touch down PCR. Skilled in protein expression studies using western blot and immunostaining. Skilled in general techniques used in Microbiology including, screening of bacteria for the production of extracellular enzymes and bioactive peptides (antibiotics), extraction and purification of proteins from bacterial cultures, identification of proteins using MALDI-TOF mass spectrometry.

Research Experience

Postdoctoral research experience in the group of Prof. Dr. Huayu Tian

- VEGF gene delivery using nanoparticles for the potential treatment of Parkinson's disease (PD) using in vitro as well as 6-OHDA based rat models of PD.

Research for PhD studies under the supervision of Prof. Dr. Xiaojuan Zhu

- Initiated research on role of DNA methylation in neuronal differentiation in the laboratory of Prof. Dr. Xiaojuan Zhu. Inititated and optimized the protocols for in vitro differentiation of stem cells to neurons in above mentioned laboratory.

- Identified several novel targets of DNA methyltransferase 3b during neuronal differentiation.
- Studied the regulation of expression and function of Dipeptidyl peptidase 6 (Dpp6) and Checkpoint kinase 2 (Chk2) during RA induced neuronal differentiation of stem cells.

Research for B.Sc. Hons. Under the supervision of Prof. Dr. Shahida Hasnain

- Screening of novel bacterial strains for the production of antibiotics from natural sources, optimization and characterization of bacterial isolates, isolation, purification, and identification of bioactive compounds. Genetic studies of isolated strains.

Publications (Cumulative IF points = **31.7**)

1. Abid Sheikh M, Saeed Malik Y, Xing Z, Guo Z, Tian H, Zhu X, et al. Polylysine-modified polyethylenimine (PEI-PLL) mediated VEGF gene delivery protects dopaminergic neurons in cell culture and in rat models of Parkinson's Disease (PD). Acta biomaterialia 2016. **(IF = 6.4)**

2. Sheikh, M.A., Malik, Y.S., Yu, H., Lai, M., Wang, X., and Zhu, X. (2013): Epigenetic regulation of Dpp6 expression by Dnmt3b and its novel role in the inhibition of RA induced neuronal differentiation of P19 cells. PloS one *8*, e55826. **(IF = 4.5)**

3. Malik, Y.S., **Sheikh, M.A.,** Lai, M., Cao, R., and Zhu, X. (2013): RING finger protein 10 regulates retinoic acid-induced neuronal differentiation and the cell cycle exit of P19 embryonic carcinoma cells. Journal of cellular biochemistry *114*, 2007-2015. **(IF = 3.5)**

4. Malik, Y.S., **Sheikh, M.A.,** and Zhu, X. (2013): Doxycycline can stimulate cytoprotection in neural stem cells with oxygen-glucose deprivation-reoxygenation injury: a potential approach to enhance effectiveness of cell transplantation therapy. Biochemical and biophysical research communications *432*, 355-358. **(IF = 2.4)**

5. Yu, H., Wang, N., Ju, X., Yang, Y., Sun, D., Lai, M., Cui, L., **Sheikh, M.A.,** Zhang, J., Wang, X., *et al.* (2012): PtdIns (3,4,5) P3 recruitment of Myo10 is essential for axon development. PloS one *7*, e36988. **(IF = 4.5)**

6. Al-Ajlani, M.M., **Sheikh, M.A.,** Ahmad, Z., and Hasnain, S. (2007): Production of surfactin from Bacillus subtilis MZ-7 grown on pharmamedia commercial medium. Microbial cell factories *6*, 17. **(IF = 4.6)**

7. Lai, M., Guo, Y., Ma, J., Yu, H., Zhao, D., Fan, W., Ju, X., **Sheikh, M.A.**, Malik, Y.S., Xiong, W., *et al.* (2015). Myosin X regulates neuronal radial migration through interacting with N-cadherin. Frontiers in cellular neuroscience *9*, 326. **(IF = 4.3)**

8. Alajlani M, **Shiekh A,** Hasnain S, Brantner A. Purification of Bioactive Lipopeptides Produced by Bacillus subtilis Strain BIA. Chromatographia 2016;79:1527-32. **(IF = 1.5)**

Work Experience

- **Currently working as Assistant Professor at Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.**
- Postdoctoral research fellow in Changchun institute of applied chemistry, Chinese academy of sciences, Changchun, China for 18 months (03, 2014 to 8, 2015) in the group of Prof. Dr. Huayu Tian / Prof. Dr. Xuesi Chen.
- Worked as part time lecturer in Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.
- Work as a quality control Microbiologist in A-Z Pharmaceuticals for 6 months from April 2007 to October 2007.

Research Grants

- Received grant of 150,000 from Punjab University for year 2015-2016 for research project entitled as "Targeting Hepatocellular Carcinomas by lentiviral mediated downregulation of cancer metabolism genes either single or in combinations".

Research Students supervision:

M. Phil Student (2016-2017): Targeting Hepatocellular Carcinomas by lentiviral mediated downregulation of cancer metabolism genes either single or in combinations.

MSc Student (2016-2017): Isolation and screening of novel *Bacillus* strains for the production of amylases: Product optimization, characterization and partial purification.

B.S Student (2016-2017): Alkaline proteases produced by novel *Bacillus* strains for potential industrial applications.

Workshops, conferences, and presentations

- Attended one day workshop"Endnote bibliography made easy" At Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore. 12 January, 2016.
- Participated in the BIT's 2nd Annual world congress of Neurotalk, 2011, Dalian, China.
- Followed workshop on Consumer safety and Microbiological practices in Food, water and pharmaceutical industries in 2007, Islamabad, Pakistan.
- Participated in the Sixth International Biennial Conference, 2007, Held by the Pakistan Society for Microbiology, National Library of Pakistan-Islamabad.
- Participated and organized Ist symposium of Microbiology and Molecular Genetics, 2007, University of the Punjab, Lahore.
- Oral presentation "Characterization and purification of a lipopeptide antibiotic produced by Bacillus subtilis strain 15IIB." SIBC-PSM Conference, March 18-21, 2007, Islamabad.
- Oral presentation "Isolation and purification of bioactive lipopeptides from Bacillus subtilis strain BIA." Ist symposium of Microbiology and Molecular Genetics, 2007.

Extra curricular activities

- Succeeded to get first position in Table Tennis events (Singles) in Northeast Normal University games for foreigners, 2010.

- Participated in the table tennis events for 1st Changchun foreign friends games, 2010.
- Succeeded to get the first position in Table Tennis events (Single+double), in Department of Microbiology and Molecular Genetics, University of the Punjab.

Linguistic proficiency

- Urdu, English, Chinese, Arabic, and Punjabi.