

TALAT AFROZE

Work Address: Max Bell Research Facilities, Room # 3R402-6, Toronto General Hospital Research Institute, University Health Network, University of Toronto, 200 Elizabeth Street, Toronto, ON M5G 2C4, Canada.

Email: talat.afroze@utoronto.ca

EDUCATION:

1992 **Ph.D.**, Molecular and Cellular Biology Graduate Program, University of Alabama at Birmingham, USA.

1981 **M.S.**, Biological Sciences (Major: Biochemistry and Molecular Biology), Quaid-e-Azam University, Islamabad, Pakistan.

1978 **B.S.**, Botany, Zoology, Chemistry, Forman Christian College (run by “Presbyterian Church-USA”), University of the Punjab, Lahore, Pakistan.

WORK EXPERIENCE:

February, 2002 onwards **Research Technician**, Toronto General Hospital Research Institute, Toronto, Canada. Am working on two research articles involving c-Myb regulated promoters of Calcium Transporting Pumps and Channels. I am currently helping two Graduate Students and three postdoctoral fellows in Molecular Biology techniques. Published one first author original research article in a U.S. peer reviewed journal and one first author review article in a monograph series while serving in this post.

Feb., 1998- Jan.,2002 **Postdoctoral Fellow**, Dept. of Medicine, University of Toronto, Toronto, Canada. Worked on the c-Myb regulated promoter of the plasma membrane Calcium ATPase-1. Helped two lab technicians and some students in their day to day experiments while working in this post. Published one first author original research article in a U.S. peer reviewed journal and one first author review article in a Canadian peer reviewed journal while serving in this position.

April, 1993-Sept., 1997 **Assistant Professor**, Centre of Excellence in Molecular Biology, Lahore, Pakistan. I used PCR-based cloning to clone and sequence Pakistani isolates of the Hepatitis-B virus from patient blood samples. I supervised a Ph.D. and an M.Phil. student in the hepatitis project. Both my students completed their degrees successfully. I also ran a Human DNA Typing Laboratory, supervising one Ph.D. student, where I established an allele frequency database for four Short Tandem Repeat (STR) human genetic loci commonly used by Forensic labs in the U.S.A. We collected 200 blood samples from two large ethnic sub-populations of Pakistan for this database and this work resulted in one original research article in a U.S. peer reviewed journal. Taught molecular biology and genetics courses to M.Phil. and Ph.D. students and was Incharge of the Coursework and Examinations at the Centre for 2 years. Participated in organizing international symposia and Training Workshops at the Centre.

June, 1992-March, 1993 **Lecturer**, Centre of Excellence in Molecular Biology, Lahore, Pakistan.

March, 1982–March, 1985 **Biology Teacher**, various private high schools in Pakistan with English as medium of instruction.

MOLECULAR BIOLOGY TECHNIQUES LEARNT:

Real Time Quantitative RT-PCR (ABI 7900 Sequence Detection System), Genomic PCR, RT-PCR, Genome Walking via PCR, Chromatin Immunoprecipitation Assay (ChIP) using PCR, Rapid Amplification of cDNA Ends (RACE), Retroviral Gene Expression (tet-ON system), Luciferase reporter assay, Gene Cloning, Southern and Northern blotting, ELISA, Competitive Enzyme Immunoassay, flow cytometry (limited experience), Western blotting, Ribonuclease Protection Assay (RPA), electrophoretic mobility shift assay (EMSA), nuclear run-on assay, DNA footprinting, nested promoter deletions, site-directed mutagenesis, *In vitro* transcription assay with cytoplasmic and nuclear protein extracts, DNA sequencing, immunostaining, animal cell culture, retroviral transduction and liposomal transfection of cell lines, Ion Transporter Activity Assay, Kinase Activity Assay, cyclic GMP assay, Mouse cDNA Microarray analysis (2-day hands-on course; Univ. of Toronto).

SUPERVISORY EXPERIENCE: Supervised one M.Phil. and two Ph.D. students at research institute in Pakistan. Taught molecular biology techniques to three summer students, two lab technicians and three Master's students and guided them in the day to day planning and execution of project objectives while serving as Postdoctoral Fellow and later as Research Technician at the Toronto General Hospital Research Institute, Canada.

RESEARCH PUBLICATIONS: 6 research articles and 2 review articles have been published already while 2 original research articles are in preparation. 9 research abstracts have been published in international research conference proceedings.

RESEARCH ARTICLES:

1. Gros, R, **Afroze, T**, You, X, Kabir, G, van Wert, R, Kalair, W, Hoque, AE, Mungrue, IN and Husain, M. **2003**. Plasma membrane Ca^{2+} ATPase over-expression in arterial smooth muscle increases vasomotor responsiveness and blood pressure. *Circulation Research* **93(7):614-21**.
2. **Afroze T.**, Yang LL, Wang C, Gros R, Kalair W, Hoque AE, Mungrue IN, Zhu Z, Husain M. **2003**. Calcineurin-independent regulation of plasma membrane Ca^{2+} ATPase-4 in the vascular smooth muscle cell cycle. *Am J Physiol (Cell Physiol)* **285: C88-95**.
3. You, X, Mungrue, I.N., Kalair, W., **Afroze, T.**, Ravi, B., Gros, R. and Husain, M. **2003**. Conditional expression of a dominant negative c-Myb in vascular smooth muscle cells inhibits arterial remodeling following injury. *Circulation Research* **92(3):314-21**.
4. Rahman, Z., **Afroze, T.** and Weir, B.S. **2001**. DNA typing results from two urban sub-populations of Pakistan. *Journal of Forensic Science* **46(1):111-115**.
5. **Afroze, T.** and Husain, M. **2000**. c-Myb binding sites mediate G_1/S -associated repression of the plasma membrane Ca^{2+} ATPase-1 promoter. *Journal of Biological Chemistry* **275(12):9062-9**.
6. Shippen-Lentz, D., **Afroze, T.** and Vezza, A.C. **1990**. Heterogeneity and expression of the *Plasmodium falciparum* 5.8S ribosomal RNA genes. *Molecular and Biochemical Parasitology* **38: 113 - 120**.

REVIEW ARTICLES:

1. **Afroze, T.** and Husain, M. **2002**. c-Myb may coordinately regulate transcription of multiple Ca^{2+} transporters at the G_1/S transition point. In: Pandalai, S.G. Ed., *Recent Research Developments in Biological Chemistry, Vol. 1 (2002): 273-285*, Research Sign Post, Kerala, India (ISBN: 81-7736-153-8).

2. **Afroze, T. and Husain, M. 2001.** Cell cycle dependent regulation of intracellular calcium concentration in vascular smooth muscle cells: a potential target for drug therapy. *Current Drug Targets-Cardiovas. Haemat. Dis.* **1(1): 23-40.**

PUBLISHED ABSTRACTS:

- (1) **Afroze T. and Husain M. 2001.** c-Myb-dependent activation of the IP3R1 promoter. *FASEB J.* **2001;15(4):A80** (Abstract # 131.7). (Winner of AFMR's 2001 Trainee Travel Award).
- (2) **Afroze T. and Husain M. 1999.** c-Myb-mediates cell cycle-dependent transcriptional repression of PMCA1. *FASEB J.* **1999; 13: p. A437** Abstract # 368.13 (Winner of the AFMR's 1999 Henry Christian Award)
- (3) **Afroze T. and Husain M. 1999.** A functional c-Myb and intact c-Myb binding sites mediate cell cycle-dependent repression of the plasma membrane Ca²⁺ ATPase-1 gene in vascular SMC. *Circulation* **1999; 100(18) Supplement I: I-844** (Abstract # 4456).
- (4) **Afroze T. and Husain M. 1999.** Increased expression of the IP3R may contribute to the rising cytosolic Ca²⁺ concentrations of proliferating SMC. *Can. J. Cardiol.* **1999; 15D: 107D** (Abstract # 23).
- (5) You X, Mungrue I, **Afroze T,** Husain M. **1999.** Transgenic expression of a dominant negative c-Myb in arterial smooth muscle cells of mice reduces intimal-medial thickening following carotid artery injury. *Circulation* **1999; 100 (18) Supplement I: I-547** (Abstract # 2882).
- (6) You X, **Afroze T,** Mungrue I, Backx P, Husain M. **1999.** Overexpression of plasma membrane Ca²⁺ ATPase-4 in arterial smooth muscle cells of transgenic mice inhibits intimal-medial thickening following carotid artery injury. *Circulation* **1999; 100 (18) Supplement I: I-546** (Abstract # 2876).
- (7) **Afroze, T.,** Shippen-Lentz, D. and Vezza, A.C. **1989.** Detection of unique 5.8S ribosomal RNA genes in *Plasmodium falciparum*. **1989 Annual Meeting of the American Federation for Clinical Research, Washington, D.C.**
- (8) **Afroze, T.** Shippen-Lentz, D. and Vezza, A.C. **1989.** Expression of ribosomal RNA genes in *P. falciparum* *Journal of Cellular Biochemistry. Supplement 13E, 1989.*
- (9) Shippen-Lentz, D., **Afroze, T.** and Vezza, A.C. **1988.** Characterization of the 5.8S ribosomal RNA coding domains from *P. falciparum*. *Proceedings of the 37th Annual Meeting of the American Society for Tropical Medicine and Hygiene 1988.*

HONORS AND AWARDS

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| 2001 | Trainee Travel Award (US \$ 725) from American Federation for Medical Research to attend the FASEB-sponsored EB2001 Meeting from March 31 st to April 4 th , 2001 at Orlando, Florida, U.S.A. |
| 2000 | Heart & Stroke Foundation/Richard Lewar Centre of Excellence Postdoctoral Fellowship (Cdn \$ 29,000 per annum) awarded for one year. |
| 1999 | Henry Christian Award (US \$ 1000) for presenting the most meritorious abstract in its category at the 1999 Annual Meeting of the American Federation for Medical Research held in Washington, D.C., April 17-24 th , 1999. |
| 08/1986-06/1991 | 5-year Ph.D. Scholarship (US \$ 80,000) in Genetic Engineering awarded by Ministry of Science & Technology, Government of Pakistan and USAID, Washington, DC, USA. Scholarship was used to fund my Ph.D. studies in the Molecular and Cellular Biology Graduate Program, University of Alabama at Birmingham, U.S.A. |
| 12/1981 | First position in M.S. class on the basis of cumulative grade point average. |

MEMBERSHIPS

American Society for Biochemistry and Molecular Biology (Regular Member).

American Heart Association (Arteriosclerosis, Thrombosis & Vascular Biology Council).

Canadian Cardiovascular Society.