

# Curriculum Vitae

## Personal information:

*Name:* ***Rubina Tabassum Siddiqui***

Date of Birth: 30-01-64

Place of Birth: Sargodha, Pakistan

Marital status: Married

Nationality: Pakistani

Sex: Female

Address: National Institute for Biotechnology and Genetic Engineering (NIBGE) Jhang Road, P.O.Box 577, Faisalabad, Pakistan

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## Academic qualification:

**Bachelor of Science (B.Sc).** 1983. Govt. College for Women Sargodha with First Division. Major subjects studied include vertebrate zoology, invertebrate zoology, genetics, cell biology, ecology, plant physiology, angiosperms, gymnosperms, algae and fungi, physical chemistry, inorganic and organic chemistry.

**Master of Science (M.Sc).** 1985. Institute of Chemistry, University of the Punjab, Lahore, Pakistan with first division. Major subjects included Physical

chemistry, organic chemistry, inorganic and applied chemistry. Thesis titled "Effect of UV radiations on azo-dye derivatives" was done as part of the degree.

**Doctor of Philosophy (PhD).** 2005. University of the Punjab, Lahore. Title of the thesis is "Detection of *Mycobacterium tuberculosis* in clinical specimens and genetic relatedness among different strains of *Mycobacterium tuberculosis* from Pakistan"

Awards:

- i. Received Gold Medal from Pakistan Anti-TB Association on July 7, 1995.
- ii. President's Talent Scholarship awarded by University Grants Commission during M.Sc
- iii. Talent scholarship holder throughout the academic years

Service record:

- i. Joined as Scientific Officer at Biomedical Division, National Institute for Biotechnology and Genetic Engineering, Lahore, Pakistan in November 1987.
- ii. Promoted as Senior Scientific officer on 1st December 1992.
- iii. Promoted as Principal Scientific Officer on 1st December 2000.

***Experience:***

- i. One of the founding members at Biomedical Division, NIBGE, Lahore, Pakistan.
- ii. One of the founding members of Medical Biotechnology Division and group leader of Tuberculosis Research and Cytogenetic analysis at NIBGE, Faisalabad.

## **Achievements**

- i.* Provision of services for PCR based diagnosis of Tuberculosis (First time in Pakistan)
- ii.* DNA fingerprinting of *Mycobacterium tuberculosis* isolates from Pakistan.
- iii.* Provision of services for PCR based diagnosis of Chronic Myeloid Leukemia (First time in Pakistan)

## ***Current research engagements***

1. Provision of diagnostic facilities for PCR-based detection of *Mycobacterium tuberculosis* in clinical specimens.
2. Provision of diagnostic and prognostic facilities for chronic myeloid leukemia based on detection of bcr-abl fusion gene by PCR and Philadelphia chromosome by karyotyping.
3. Provision of facilities of karyotyping to research projects and for public.
4. Detection of Beijing and non-Beijing genotypes of *Mycobacterium tuberculosis* in Pakistan
5. Characterization of mutations associated with drug resistance in *M. tuberculosis*.
6. Characterization of microdeletions in Y-chromosome associated with male infertility in Pakistani population.
7. RNA interference based therapeutics for diseases prevalent in Pakistan.

8. Improvement in the treatment of acute lymphoblastic leukemia (ALL) by the detection of minimal residual disease (MRD).

### **Trainings:**

- i. IAEA Regional Training Course on Radioisotopes and Molecular Techniques in Biological Sciences held in Tokyo, Japan, from 25-01-93 to 19-02-93.
- ii. Three months training at Imperial College School of Medicine (29-04-98) to (28-07-98).
- iii. One month internship with Dr. Tobias Kieser at Department of Genetics, John Innes Centre, Norwich, UK.
- iv. Three months IAEA fellowship at Department of Haematology, INSERM, Paris, France

### **Workshops organized:**

- i. Coordinator of nine-day workshop on "Applications of Biotechnology in Healthcare and Medicine" (from 3rd Dec. to 11th Dec. 1993).
- ii. Organizer of five-days workshop on "PCR- based Diagnosis of Tuberculosis in Clinical Specimens" (from 22nd September to 26th September, 1994).
- iii. Organizer and speaker of awareness seminar on "Diagnosis of Genetic Disorders by Karyotyping" held at NIBGE, Faisalabad on 24-01-96.
- iv. Coordinator, Molecular Detection and Genotyping of HBV / HVC by PCR Methods and Quality Assurance Issues, held at NIBGE, December 20-24, 2004.

### ***Lecture delivered as invited speaker:***

- i. PCR based Diagnosis of Tuberculous meningitis . Symposium in Congress 95 held at the College of Physicians and Surgeons Karachi, Pakistan, (8th January to 11th January,1995).
- ii. At Three-days workshop on the "Applications of PCR in Agribusiness, Health and Environment" held at NIBGE, Faisalabad.
- iii. At First Post-graduate Course on "The Applications of Biotechnology in Agriculture" held at Agriculture University, Faisalabad (7-12 Dec.1998).
- iv. Applications of PCR in Health, Environment and Forensic medicine.
- v. At Biotechnology Seminar held under Pakistan Medical Research Council, 2000.

### **Teaching and training:**

- i. Delivered lectures to M. Phil Biotechnology students at NIBGE.
- ii. Trained personnel in molecular biology techniques  
Supervised or Co-supervised the following students:

#### **M. Phil:**

Irfan Durrani, IBGE, Peshawar (Co-supervisor)  
Khan Niaz, IBGE, Peshawar (Co-supervisor)  
Sumble Sabeen, NIBGE (Supervisor)  
Saima Nazir, NIBGE (Supervisor)

#### **PhD:**

Hajra Sadia, Quaid-e-Azam University, Islamabad. (Co-supervised)  
Mamoona Naz, Quaid-e-Azam University, Islamabad.

### **Projects awarded:**

- i. Principal Investigator of the Research Grant (No:7265/RB),

awarded by IAEA for three years (1993-1995) titled Development of DNA probes for early diagnosis of Tuberculosis.

- ii. Co-principal Investigator of a Technical Co-operation Project (No:C6/PAK/97040P) awarded by IAEA for two years (1997 and 1998), titled PCR/DNA Based Diagnosis of Infectious Diseases.
- iii. Principal Investigator of Research Contract (No.12245/RO/PAK), awarded by IAEA for three years (2002-2005) titled Improvement in the treatment of acute lymphoblastic leukemia by detection of minimal residual disease (MRD)
- iv. Co-principal investigator of Research Contract, awarded by IAEA for two years (2005-2007) titled Quality control, quality assurance issues in molecular detection of drug resistance in Tuberculosis
- v. Principal investigator of Research project awarded by Pakistan Science Foundation (No. Biotech-Med-50) titled Detection of Y-chromosome microdeletions associated with infertility in different geographic/ ethnic groups in Pakistan. A project awarded by Pakistan Science Foundation for three years.

### **Publications:**

- i. Rubina T Siddiqui, Sultan Abdullah, Ehsan-ul-Haq and Javaid A Qureshi. Diagnosis of Tuberculosis by conventional and DNA probe based methods in clinical specimens. Proceedings of International Symposium on Biotechnology for Sustainable Development. Pages 39-43, 1993.
- ii. Rubina T Siddiqui. Applications of PCR in Health and Medicine. Doctor International. vol;17, page 09, 1995.
- iii. Zafar M Khalid, Samina Iqbal, Rubina T Siddiqui, Qaisar M Khan and Kausar A Malik. Biotechnological solutions to hazardous effluents from textile industry. Proceedings of International Symposium on Biotechnology for Sustainable Development. Pages 275-282, 1993.

- iv. Farrukh R Sheikh, Rubina T Siddiqui, Shagufta Khaliq and Syed Q. Mehdi. Effect of superoxide dismutase on the radiation sensitivity of cultured cells. Proceedings of National Chemistry Conference II, pages 148-149, 1990.
- v. Syed Q Mehdi and Rubina T Siddiqui.. Hyperthermic cancer treatment and molecular events associated with immunocytolytic potential of cancer cells: A Review. Pakistan Journal of Medical Research, vol;27, pages 124-136, 1988.
- vi. Rubina T Siddiqui, Javaid A Qureshi. Use of PCR and DNA probes for the detection of *Mycobacterium tuberculosis* in clinical samples. Biomedica.
- vii. Zafar Iqbal, **Rubina T Siddiqui** and Javed A Qureshi. 2004. Two different point mutations in ABL gene ATP-binding domain conferring primary Imatinib resistance in a Chronic Myeloid Leukemia (CML) patient: A case report. Biol. Proced. Online 6(1): 144-148
- viii. **Siddiqui RT**, Qureshi JA, Iqbal Z. 2004. Quantitative development of competitive reverse transcriptase PCR for detection of minimal residual disease and monitoring anti-leukemic therapy response in Philadelphia positive leukemia. Haematologica 89[suppl.6] page 94. (Impact Factor 3.5)
- ix. Iqbal Z, Qureshi JA and **Siddiqui RT**.2004. First report of multiple point mutations in ABL gene ATP-binding domain conferring primary Imatinib resistance in chronic myeloid leukemia patient. Haematologica 89[suppl.6] page 97. (Impact Factor 3.5)
- x. Zafar Iqbal, **Rubina T Siddiqui** and Javed A Qureshi. 2004. Case study of primary Imatinib resistance and correlation of BCR-ABL multiple mutations in chronic myeloid leukemia. Therapy 1(2), 249-254
- xi. Zafar Iqbal, Javed A Qureshi and **Rubina T Siddiqui**. Detection of point mutations conferring acquired and natural Gleevec-resistance

in CML patients. Proceedings of 10<sup>th</sup> Annual Cancer Conference organized by Pakistan Society of Clinical Oncology (PSCO) from 19-21<sup>st</sup> December, 2003 at Peshawar.

**Papers presented:**

- i. Rubina T Siddiqui, Sultan Chaudhary, Shan Elahi and Javaid A Qureshi. Detection of Mycobacterium tuberculosis in formalin-fixed paraffin embedded tissues by polymerase chain reaction at the fourth international symposium-workshop on applications of Molecular Biological Research in Agriculture, Health and Environment held at the Centre of Advanced Molecular Biology in April 1995.
- ii. Rubina T Siddiqui, Abdul Haye, A Ehsan, Aitzaz A Jan, Javaid A Qureshi. Is Mycobacterium tuberculosis present in the blood of patients suffering from pulmonary tuberculosis? Presented at the Second Annual Symposium on Basic and Applied Research in Health care and Social Development, Agha Khan University, Karachi, Pakistan, Sep, 1995.
- iii. Rubina T Siddiqui, Zarqa Yasin, and Javaid A Qureshi. Presence of IS6110 in Mycobacterium tuberculosis isolates from clinical samples collected from Pakistan. Presented at the Third Annual Symposium held at the Agha Khan University, Karachi, Pakistan, Sep. 1996
- iv. Rubina T Siddiqui, Zarqa Saif, Javed A Qureshi. 1999. Spectrum of chromosomal abnormalities associated with mental retardation and sex chromosome disorders.. First International Symposium at the Children Hospital, Lahore.
- v. Zarqa Saif, Rubina T Siddiqui, Javed A Qureshi. 1999. Comparison of cytogenetics and PCR based detection of Philadelphia Chromosome; a diagnostic marker for Chronic Myeloid Leukemia. Pakistan Haematological Society; held at the Children Hospital, Lahore.
- vi. Rubina T Siddiqui. 2000. Detection and characterization of



mutations associated with drug resistance in *Mycobacterium tuberculosis*, Pakistan Medical Research Council, Faisalabad.

**Other facts :**

- i. Actively participated in designing, furnishing and establishing diagnostic and research facilities in new molecular biology lab.

### COMPLETED PROJECTS/ASSIGNMENTS:

<b>Job Description</b>	<b>Date</b>
1. Establishment and validation of PCR based diagnostic test	09-1-92 to 1994
2. Finding a genotypic relationship (genetic relatedness) among <i>M. tuberculosis</i> isolates from Pakistan.	1999-2005
3. Establishment and validation of PCR-based detection of <i>bcr-abl</i> transcript in Chronic Myeloid Leukemia (CML) patients (both qualitatively and semi-quantitatively)	2000-2002
4. RNA Interference Based Therapeutics for Diseases Prevalent in Pakistan.	2003-2007
<b>5. Improvement In The Treatment Of Acute Lymphoblastic Leukemia (ALL) by The Detection Of Minimal Residual Disease (MRD). Funded by IAEA</b>	2002-2007

### CURRENT PROJECTS:

#### **Research:**

1. Detection of Beijing and non-Beijing genotypes of *Mycobacterium tuberculosis* in Pakistan
2. Characterization of microdeletions in Y-Chromosome associated with male infertility in Pakistani population.
3. Detection of point mutations conferring natural and acquired Gleevec resistance in Chronic Myeloid Leukemia (CML) patients using Allele Specific Oligonucleotide (ASO) PCR.

#### **Diagnostics:**

1. Provision of diagnostic facilities for pcr-based detection of *mycobacterium tuberculosis* in clinical specimens.
2. Provision of diagnostic and prognostic facilities for chronic myeloid leukemia based on detection of bcr-abl fusion gene by pcr and philadelphia chromosome by karyotyping.
3. Provision of facilities for karyotyping.