

## **PCR-RFLP, a diagnostic tool for rapid detection of drug resistant *Mycobacterium tuberculosis***

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**T**uberculosis (TB) is a highly contagious disease caused by *Mycobacterium tuberculosis*. Roughly 1/3<sup>rd</sup> of the world's population is infected with *Mycobacterium tuberculosis* (MTB). So, the current study was carried out to determine the drug resistant *Mycobacterium tuberculosis* magnitude through PCR-RFLP. Initially, the patients were screened for tuberculosis through sputum smear microscopy by Zeihl Neelsen (ZN) staining technique. The sputum positive patients were included in the study after informed consent to the patient. A total of 341 patients were included in the study. PCR-RFLP was used to evaluate the variation in genetic makeup of drug resistant mycobacterium tuberculosis strains. Among the studied population, individuals in older age are affected more and also TB is more common in uneducated and poor people. Resistance against isoniazid, streptomycin, ethambutol and ofloxacin were studied. Overall 91.5% patients were confirmed positive for *M. tuberculosis* complex infection on PCR analysis. It was found that 17.30% of the cases in the study population have multidrug resistant tuberculosis (MDR-TB). Co-infection of TB with diabetes, HCV and HIV were also observed. Among the drug resistant TB cases 24.04% of the cases were resistant to isonizid (INH), 19.87% resistant to ethambutol (EMB) and 16.99% resistant to streptomycin (STRM). Fluoroquinolone namely ofloxacin resistance along with ethambutol, isoniazid and streptomycin was observed in 6.5% of cases. We concluded PCR-RFLP as a useful molecular technique for rapidly detecting mutations in drug resistant TB patients.

### **Biography**

Muhammad Riaz has PhD degree in Biochemistry from University of Agriculture, Faisalabad, Pakistan and completed his six months research training at University of Glasgow, Scotland, UK. He is working as a Lecturer in the Department of Allied Health Sciences, Sargodha Medical College, University of Sargodha, Pakistan. He has published more than 15 papers in reputed journals. He participated and presented research papers in international conferences as oral and poster presentation.

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