

Analysis of *gyrA* mutations in local TB patients of Lahore Pakistan



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Analysis of *gyrA* mutations in local TB patients of Lahore Pakistan

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MS

CHEMISTRY

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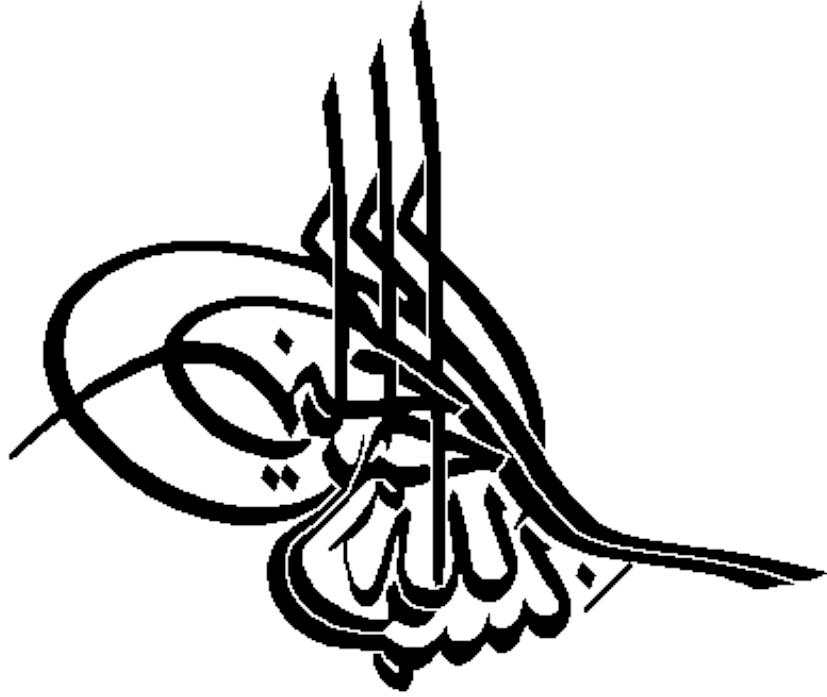
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DEPARTMENT OF CHEMISTRY

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UNIVERSITY OF MANAGEMENT AND TECHNOLOGY, LAHORE,
PAKISTAN



In the name of

Allah,

The most Compassionate,

The most merciful

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A thesis submitted to the faculty of the Department of Chemistry, School of Science in partial fulfillment of the requirements for the degree of MS in Chemistry.

Thesis Committee:

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2. _____
3. _____

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DEDICATED TO

MY MOTHER

SAMINA AFZAL

&

MY LATE FATHER

MUHAMMAD AFZAL HASHMI (MAY HIS SOUL

REST IN PEACE)

ANYTHING GOOD THAT HAS COME INTO MY LIFE

HAS BEEN BECAUSE OF YOUR GUIDANCE AND

LOVE.

ACKNOWLEDGEMENT

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ABSTRACT

Tuberculosis is a slowly progressive, debilitating disease that kills about 1.5 million people world-wide. Pakistan ranked 4th in global TB burden. In this research work, male-female ratio showed that the rate of TB is 32 times higher in women as compared to men. The patients suffering from pulmonary TB were 94% and only 6% were recorded as extra pulmonary TB. All the extra pulmonary TB cases were found in females. There were about 72% cases which were positive for MDR-TB. Out of these 72% MDR-TB cases, all were previously treated. The differentiation between *M. bovis* and *M. tuberculosis* reflects that none of the sample belonged to *M. bovis*. All the isolates were belonged to *M. tuberculosis*, but 6% samples had extra-pulmonary TB. It shows that *M. tuberculosis* not only affects the lungs, but also the other parts of the human body. *GyrA* mutations were investigated by using newly designed primers, at codons 90, 91, and 94. Results showed that out of all samples there were mutations in 60% samples. There were mutations in 30% samples at codon 90, 6% samples were mutated at codon 91 and 24% were mutated at codon 94.

