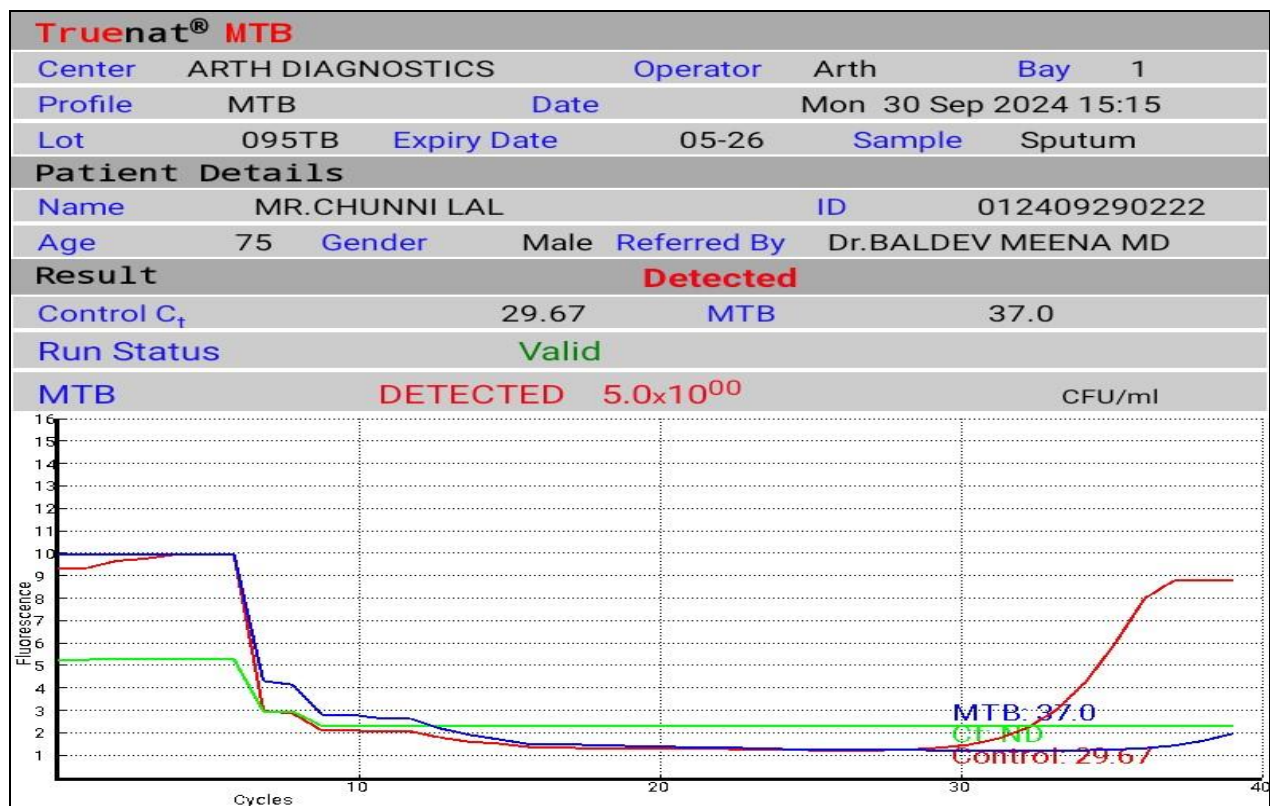


Patient Name : **MR. CHUNNI LAL**  
Age & Sex : 75 Years / M  
Ref. Doctor : DR.BALDEV MEENA (MD)

Received on : 29/09/2024  
Reported on : 30/09/2024  
Serial No : **012409290222**

**MOLECULAR BIOLOGY (MTB Real Time PCR)**

**(GENE X-PERT/CBNAAT/ TRUENAT™)**



|                                      |                                 |
|--------------------------------------|---------------------------------|
| Patient Name : <b>MR. CHUNNI LAL</b> | Received on : 29/09/2024        |
| Age & Sex : 75 Years / M             | Reported on : 30/09/2024        |
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## **MOLECULAR BIOLOGY (TRUENAT™MTB RIF TEST)**

### **Specimen: SPUTUM**

### **Final Result:- INDETERMINATE**

Truenat™ MTB RIF, Mycobacterium Tuberculosis Rifampicin Resistance Test (for diagnosis of MDR TB), is a follow on test conducted on DNA extracts that have shown MTB positive by Truenat™ MTB.

### **INTERPRETATION:**

| RESULT        | COMMENTS                                                                         |
|---------------|----------------------------------------------------------------------------------|
| RIF SENSITIVE | No mutations detected in the target region of <i>rpoB</i> gene. MDR TB unlikely. |
| RIF RESISTANT | Mutation detected in the target region of <i>rpoB</i> Gene suggesting MDR TB     |
| INTERMEDIATE  | No conclusive result                                                             |

### **Test Principle:**

The *rpoB* gene encodes the  $\beta$  subunit of bacterial [RNA polymerase](#). It is the site of mutations that confer resistance to the [rifampicin](#) antibacterial agents, such as [rifampin](#). Mutations in *rpoB* that confer resistance to rifampicin do so by altering residues of the rifampicin binding site on RNA polymerase, thereby reducing binding affinity for rifampicin. Rifampicin resistance is most invariably associated with resistant to isoniazid. Hence, detection of rifampicin resistance is recommended as a reliable proxy for diagnosis of MDR TB.

### **Pathogen Information:**

Tuberculosis (TB) is an infectious disease caused predominantly by the bacillus *Mycobacterium tuberculosis*. It typically affects the lungs (Pulmonary TB) but can affect other sites as well (Extra pulmonary TB). Pulmonary TB spreads through air and is highly contagious. Over 80% of TB infections are pulmonary and if left untreated, a pulmonary TB patient can infect up to 10-15 other people through close contact over the course of a year. Multidrug-resistant *Mycobacterium tuberculosis* (MDR-TB) has emerged as a major public health problem worldwide with about 450,000 new cases reported every year.

### **Target selection:**

The target sequence for this test is the RRDR region of the *rpoB* gene (between codon positions 509 and 533), representing mutation hot spots known to be related to rifampicin resistance.

**Method:** Real Time PCR (Melt curve analysis)

**Note:** Assay result should be interpreted only in the context of other laboratory findings and the total clinical status of patient.

PATHOLOGIST

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