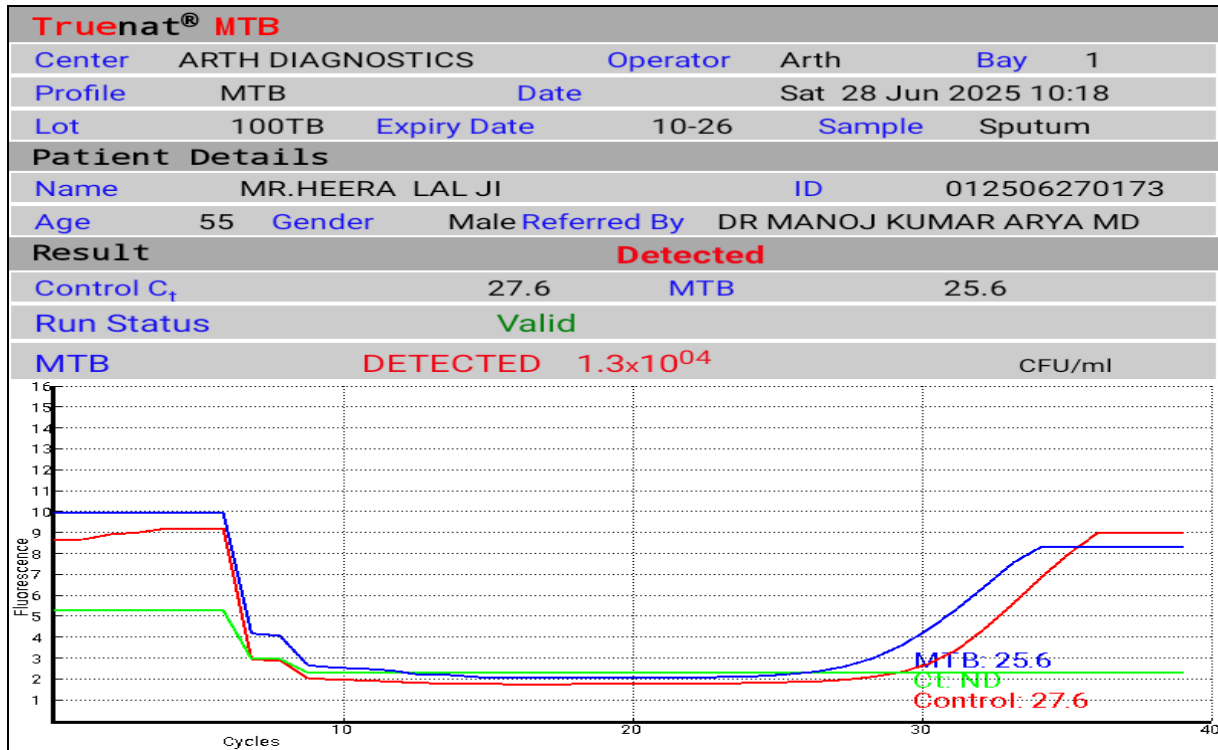


Patient Name : **Mr. HEERA LAL JI**  
Age & Sex : 55 Years / M  
Ref. Doctor : Dr. MANOJ KUMAR ARYA (MD)

Received on : 27/06/2025  
Reported on : 28/06/2025  
Serial No : **012506270173**



This report is for the perusal of doctor only. Not for medico legal cases. Clinical correlation is essential. Please contact us in case of unexpected result.

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## **MOLECULAR BIOLOGY (TRUENAT™MTB RIF TEST)**

### **Specimen: SPUTUM**

### **Final Result:- Rif Resistance Not Detected**

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.

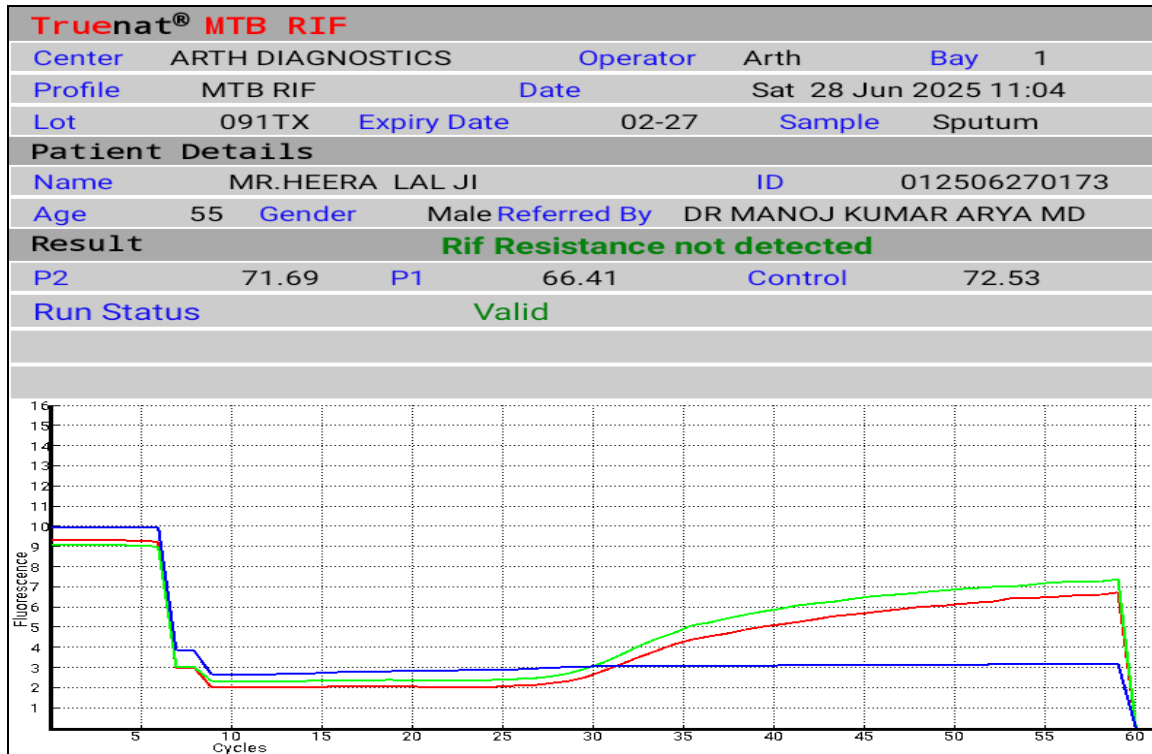
### **Method:** Real Time PCR (Melt curve analysis)

**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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