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SWASTIK DIAGNOSTIC LABORATORY (REGD.)
Dr. Modi Market, Dogra Hall, New Secretariate Road,
Jammu (Tawi) - 180001 Phones : 2548509, 2575984
Dr. Isha Kashyap, MBBS, MD (Path).
Consultant Pathologist (H.O.D)
Dr. Chiterlekha, MBBS, MD (Path).
Consultant Pathologist

SID: 240078111 **Ref By: Dr** Reg. On: 30/04/2024 02:12 pm
Mr. SUNIL KUM AR Coll. On: 30/04/2024 02:12 PM
Age:44.00 Years Sex:MALE **VIMTA LAB** Rep. On: 01/05/2024 08:50 AM

Test Name (Method, Specimen)	Result	Units	Biological Reference Interval
	MICROBIOLOGY		
AFB Staining SPUTUM Smear	**Detected [+++]**		Not Detected

End of Report

Dr Isha Kashyap
Pathologist, HOD
Registration No. : JK 3425

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Truenat™ MTB Plus - MTB Rif (Mycobacterium Tuberculosis complex)

Method :- Real Time PCR

Test	Result	Unit
Specimen Source	SPUTUM	
MTB Complex	**Detected High**	
MTB Rifampicin	Sensitive	

INTERPRETATION:

RESULT	COMMENTS
Detected [High/Medium/Low/Very low]	MTB complex DNA detected at indicated level in the sample
Not Detected	MTB DNA not detected or Below the limit of detection of assay

RESULT	COMMENTS
RIF SENSITIVE	No mutations detected in the target region of rpoB gene. MDR TB unlikely.
RIF RESISTANT	Mutation detected in the target region of rpoB Gene suggesting MDR TB
INDETERMINATE	No conclusive result, Growth-based susceptibility testing to first-line TB drugs

Test Principle for MTB:

Presence of MTB genomic DNA is determined by real time PCR. It involves specific amplification of highly conserved target regions of the MTB genome. This analysis is done on Truelab real time PCR by using the Taqman assay method. PCR amplification is indicated by threshold cycle (Ct) in amplification curve. The cycle threshold (Ct) is defined as the number of amplification cycles required for the fluorescent signal to cross the threshold (i.e. exceed the background signal). Ct levels are inversely proportional to the amount of target nucleic acid in the sample. (i.e. lower the Ct level the greater is the amount of target nucleic acid in the sample).

Test Principle for MTB RIF:

The rpoB gene encodes the ? 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 bacteria belonging to Mycobacterium tuberculosis complex. 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.

PCR Target selection:

The target sequences for this kit are nrdz gene (ribonucleoside-diphosphate reductase adenosyl cobalamin-dependent protein) and the IS6110 gene sequence. The regions selected are specific to the MTB complex & do not detect NTM strains

Target selection for MTB RIF:

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.

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

End of Report

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