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NUCLEIC ACID AMPLIFICATION OF THE rpoB REGION OF Mycobacterium tuberculosis IN PULMONARY TUBERCULOSIS DIAGNOSIS

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Abstract

Tuberculosis (TB) is one of the major public health concerns worldwide. The detection of the pathogen Mycobacterium tuberculosis complex (MTBC) as early as possible has a great impact on the effective control of the spread of the disease. It is difficult to diagnose Mycobacterium tuberculosis infection due to a lack of rapid, sensitive and specific test. Newer methods, which are easy and reliable, are required to diagnose TB. This research aim is to evaluate the accuracy polymerase chain reaction (PCR) technique, using primers the rpoB gene region compare to culture method in Lowenstein-Jensen medium as a gold standard for the detection of Mycobacterium tuberculosis in the sputum samples. Sputum samples from TB suspected patients are examined by culture and PCR, using rpoB target gene. Specimens are digested and decontaminated by the modified Petroff method (WHO). Approximately from 1.0 ml of resuspended sediment, each 100 ul is used to inoculate Lowenstein-Jensen slants in duplo and 100 ul resuspended sediment is processes for PCR. Mycobacterium tuberculosis is identified using a specific pair of primers designed to amplify 541 bp sequences of rpoB gene. Conclusion: PCR have the high accuracy, sensitivity 100% and specificity 100% for pulmonary TB diagnosis. The performance of a rpoB Mycobacterium tuberculosis PCR assay have value in the rapid diagnosis of pulmonary tuberculosis.

Keyword : rpoB, gene, Mycobacterium, tuberculosis, diagnosis,

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