ABSTRACT

Accuracy of Nucleic Acid Amplification Method Using rpoB gene target of *Mycobacterium tuberculosis* for Diagnosis of Pulmonary Tuberculosis

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 µl is used to inoculate Lowenstein-Jensen slants in duplo and 100 µl 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 spesificity 100% for pulmonary TB diagnosis. The performance of a *rpoB Mycobacterium tuberculosis* PCR assay have value in the rapid diagnosis of pulmonary tuberculosis.

Keywords: *rpoB* gene, *Mycobacterium tuberculosis*, diagnosis