

**PERBANDINGAN ANTARA NILAI DIAGNOSTIK KIT BERBASIS REAL
TIME-PCR DAN METODE
GENEXPERT UNTUK MYCOBACTERIUM
TUBERCULOSIS**



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Abstract

COMPARISON BETWEEN THE DIAGNOSTIC VALUE OF REAL TIME-PCR BASED KIT AND GENEXPERT METHOD FOR MYCOBACTERIUM TUBERCULOSIS

By

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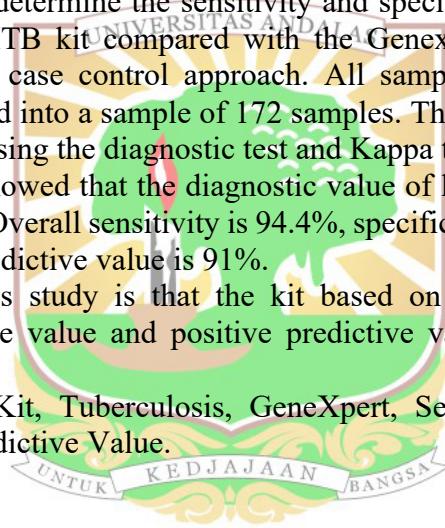
Tuberculosis is an infectious disease caused by the *Mycobacterium tuberculosis*. TB is ranked as the second leading cause of death. The main causes of the stagnancy TB burden in Indonesia is unstandardized TB management due to non-standard case discovery (diagnosis). Detection of *Mycobacterium tuberculosis* (MTB) could be conducted using the Real Time PCR and GeneXpert methods based on the *nucleic acid amplification test* (NAAT).

This research aims to determine the sensitivity and specificity of the diagnostic value of the Real Time PCR-based MTB kit compared with the Genexpert method in pulmonary TB samples. The method uses a case control approach. All samples that met the inclusion and exclusion criteria were selected into a sample of 172 samples. The data used is primary data. The data obtained were analyzed using the diagnostic test and Kappa test.

The research results showed that the diagnostic value of kit based on RT-PCR compared to Genexpert has good value. Overall sensitivity is 94.4%, specificity is 96.9%, positive predictive value is 98%, and negative predictive value is 91%.

The conclusion of this study is that the kit based on RT-PCR has high sensitivity, specificity, negative predictive value and positive predictive value and can be used as a TB diagnostic test.

Keywords: RT-PCR based Kit, Tuberculosis, GeneXpert, Sensitivity, Specificity, Negative Predictive Value, Positive Predictive Value.



Abstrak

PERBANDINGAN ANTARA NILAI DIAGNOSTIK KIT BERBASIS REAL TIME-PCR DAN METODE GENEXPERT UNTUK MYCOBACTERIUM TUBERCULOSIS

Oleh

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Tuberkulosis (TB) adalah penyakit menular disebabkan oleh kuman *Mycobacterium tuberculosis*. TB menduduki peringkat kedua penyebab kematian terbanyak. Faktor yang berpengaruh dalam tingginya angka tuberkulosis adalah lamanya pendektsian. Deteksi *Mycobacterium tuberculosis* (MTB) dapat dilakukan dengan metode Real Time PCR dan GeneXpert yang berbasis *nucleic acid amplification test* (NAAT).

Pelitian bertujuan untuk mengetahui sensitivitas dan spesifisitas nilai diagnostik kit berbasis *Real Time PCR* dibandingkan dengan metode Genexpert pada sampel TB paru. Metode menggunakan pendekatan *case control*. Semua sampel yang memenuhi kriteria inklusi dan eksklusi dipilih sebagai sampel sebanyak 172 sampel. Data yang digunakan adalah data primer. Analisis data dengan uji diagnostik dilanjutkan dengan Uji Kappa.

Hasil penelitian didapatkan nilai diagnosis kit berbasis RT-PCR dibandingkan dengan Genexpert memiliki nilai yang tinggi. Sensitivitas sebesar 94.4%, spesifisitas 96.9%, nilai duga positif 98%, dan nilai duga negatif 91%.

Kesimpulan pada penelitian ini adalah kit berbasis RT-PCR Dx memiliki nilai diagnostik yang tinggi dan dapat digunakan sebagai tes diagnostik TB.

Kata kunci: Kit RT-PCR, Tuberkulosis, *GeneXpert*, sensitivitas, spesifisitas, nilai prediksi negatif, nilai prediksi positif.