



# Real-Time Polymerase Chain Reaction Assay: A Response to Recent Letter to the Editor

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Thank you for the recent comments<sup>1</sup> for the topic of real-time polymerase chain reaction (RT-PCR) assay<sup>2</sup>. We propose that positivity in RT-PCR using any respiratory specimens suggests the possibility of active tuberculosis (TB) in clinically suspected cases, guiding to start anti-TB medication, and RT-PCR from selective bronchoscopic aspirates enhances the diagnostic yield much more when added to sputum examination<sup>2</sup>. Wiwanitkit<sup>1</sup> mentioned that “There are some concerns on this assay. False-positive of the test can be seen in cases with treated or old lesion from pulmonary TB and the low sensitivity of the test can be seen.”

As a response to the issues of false-positivity raised by Wiwanitkit<sup>1</sup>, it was mentioned in our paper<sup>2</sup> that “In our study, the false-positive rate was 0.5% in sputum and 2.0% in bronchoscopic aspirates. False-positivity in PCR has been reported to be due to carry-over contamination between specimens, cross-reactions with isolated nontuberculous mycobacteria, or dead tissue debris from previous TB scarring in highly endemic areas.”

Low sensitivity of this test was also discussed in our paper<sup>2</sup> that “Most reports have evaluated PCR using known acid-fast bacilli-positive samples. In smear-positive specimens, the sensitivity and specificity of polymerase chain reaction are in the range 90%–100%, with a positive predictive value of >95%,

whereas in smear-negative specimens, the sensitivity of PCR is reduced to <50%. In this study, the sensitivity of RT-PCR in acid-fast bacilli smear-positive specimen was observed 89%. Factors that affect RT-PCR sensitivity include the individual effort expended for sputum collection and clinician bias with regard to diagnostic approaches.”

## Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

## References

1. Wiwanitkit V. Real-time polymerase chain reaction assay for the diagnosis of pulmonary tuberculosis. *Tuberc Respir Dis* 2015;78:473.
2. Kim SW, Kim SI, Lee SJ, Lee JH, Ryu YJ, Shim SS, et al. The effectiveness of real-time PCR assay, compared with microbiologic results for the diagnosis of pulmonary tuberculosis. *Tuberc Respir Dis* 2015;78:1-7.

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