CHAPTER VII

CONCLUSION

Multiplex PCR to detect and identify members of the genus *Mycobacterium, M. tuberculosis* complex, *M. avium* and *M. intracellulare*, was developed based on the amplification of 16S rRNA gene and MPB70 gene.

The developed multiplex PCR method is rapid, simple, sensitive, specific, and inexpensive for routine laboratories to identify members of the genus *Mycobacterium*, *M. avium, M. intracellulare,* and *M. tuberculosis* complex in colonies, signal-positive hemoculture samples (AFB-positive) and AFB-positive clinical specimens.

Reverse dot blot hybridization was developed to detect and identify clinically relevant mycobacterial species from the amplified product of multiplex PCR. These additional species include *M. chelonae* or *M. abscessus*, *M. fl*avescens, *M. fortuitum, M. gordonae, M. kansasii* or *M. gastri* or *M. scrofulaceum* or *M. simiae*, and *M. xenopi.*

The developed reverse dot blot hybridization method is simple, rapid, sensitive and specific for further identification of *Mycobacterium* genus detected by multiplex PCR.

Considering the turnaround time and cost of the test, multipex PCR and reverse dot blot hybridization is an alternative method for rapid identification of mycobacterial species.