CHAPTER VI
CONCLUSION

The Multplex PCR which was established in this study could be used for detection of *Mycobacterium* species and identification for proper six species of mycobacteria. They are *M. tuberculosis* complex, *M. avium*, *M. intracellulare*, *M. kansasii*, *M. scrofulaceum* and *M. fortuitum* presenting by amplified products of, 260/320 bp, 95/320 bp, 75/335 bp, 170/320 bp, 340/320 bp and 210/370 bp, respectively. The sensitivity of this Multiplex PCR is at least 10^5 cells of mycobacteria. The specificity of this Multiplex PCR was 100% by testing with 3 referent strains and 48 isolates of nonmycobacteria. The identification results of the Multiplex PCR were 98.4% concordance with PCR-REA technique. When compared with the PNB screening test, there was 100% concordance for MTB, however there was only one discordance of NTM identification. In addition, the Multiplex PCR showed the high specificity with 100% negative results when tested with nonmycobacterias. This Multiplex PCR possesses the advantage of rapid, simple and uncomplicated technique. The identification results could be gained by single tube reation covering six species of mycobacteria in the same time and within one working day. The disadvantage of this assay is still low sensitivity. This is because of high concentration of mycobacterial DNA, which is equal to about 10^5 mycobacterial cells required for Multiplex PCR reaction. Another drawback of the Multiplex PCR is that this technique cannot be done with high throughput performance, because the Multiplex PCR is the manual technique, and does not want highly complicate or very expensive instrument, so, the cost of test is reasonable cheap.