

CHAPTER 7

Summary

1. Phagocytosis activity of THP-1 macrophage cells against *P. marneffei* conidia of laccase mutant strains were examined in comparison with wild-type *in vitro*. The results showed a significant difference between quadruple *lac* gene deletion strain and wild-type at 60 and 120 minutes of incubation. However, the phagocytic index of quadruple *lac* gene deletion strain at 15, 30, 60 and 120 minutes of incubation were significant higher than those of wild-type. This result revealed that quadruple *lac* gene deletion strain was more susceptible to THP-1 macrophage cells than wild-type.
2. Killing activity of THP-1 macrophage cells against *P. marneffei* conidia of laccase mutant strains were examined in comparison with wild-type *in vitro*. There were a significant difference between quadruple *lac* gene deletion strain and wild-type after 4 and 8 hours of late incubation. This result revealed that the conidia of wild-type seemed to be more resistant to being killed by THP-1 macrophage cells than those of quadruple *lac* gene deletion strain.
3. The proinflammatory cytokines production in THP-1 macrophage cells stimulated with *P. marneffei* conidia of wild-type and laccase mutant strains were detected by ELISA. The results indicated that the quadruple *lac* gene deletion strain stimulated a significantly higher production of TNF- α , IL-6 and IL-1 β cytokines in THP-1 macrophage cells than wild-type after longer incubation time. The result showed statistically significant differences in production of TNF- α between quadruple *lac*

gene deletion strain and wild-type at 8 and 24 hours of incubation, whereas IL-6 and IL-1 β were significantly elevated in quadruple *lac* gene deletion strain compared to wild-type at 24 hours of incubation.

4. These results indicate that laccases play a role in protection fungal cells against THP-1 macrophage cells and their functions could compensate each other. In addition, laccases may have an important role in proinflammatory cytokine response to *P. marneffei* conidia.



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