

CHAPTER VI

CONCLUSION

AP activity in each developmental stage is related to age of *A. mellifera*. The AP supports metabolism in cells. It is important at permeable membrane and produces energy for cell activity; development, growth, and differentiation. Localization of AP activity can be found in several tissues especially in plasma membrane and as free forms in cells. The activity is mostly active in integument tissue especially in cuticle because of molting. Furthermore, AP is active in epithelial cells, fatty body cell, muscle cells, etc. The AP activity is very high in gut. All of cells which high AP activity is found may require high energy for cell activity. Also, the cell condition may have to be basic according to the optimum pH of AP as mentioned already. The optimum condition of this AP is at pH 9.5-9.6 and temperature at 50°C. This AP can tolerate heat. It would be well activated when the temperature is very high. AP activity in crude extract profile and amount of total protein profile are different in each developmental stage of *A. mellifera*. At larva stage is higher activity than pupa stage and emerging adult.

A partial nucleotide of non-specific AP (429 bp) was obtained by genomic DNA amplification and compared to non-specific AP in nucleotide similarity to *D. melanogaster* at 39.2%, to *B. mori* at 39.7%, to *Gullus gallus* at 36.6%, to Bovine at 36.9%, and to *Homo sapiens* at 36.7%. The obtained nucleotide sequence converted to a partial amino acid sequence of 139 amino acids in *A. mellifera*. The similarity of AP amino acid sequence is at 14.3% of *D. melanogaster*, at 24.3% of *B. mori*, at 28.6 % of *G. gallus*, at 19.8% of Bovine, and at 27.6% of *Homo sapiens*. Partial non-specific AP of *A. mellifera* is more similar to AP in *B. mori*, *D. melanogaster*, and *G. gallus*, respectively. This AP of *A. mellifera* is non-specific AP, phylogenetic tree was resemble to Yang *et al.*, 2000 research. In the future, a full length nucleotide sequences should be obtained.