

CHAPTER V

CONCLUSIONS

1. Semi-quantitative PCR based on competition between the target and the synthesized specific cDNA competitor was successfully developed.
2. Expression of AcMRJP 1-6 mRNA were found in hypopharyngeal glands of 5-10 days nurse bees, 11-15 days nurse bees and forager bees but not in newly emerged bees.
3. Expression of AcApisimin mRNA was highly found in all hypopharyngeal glands of newly emerged, nurse and forager bees.
4. The AcApisimin mRNA level of 45.1 pg per individual bees was detected in newly emerged bees.
5. The transcription levels of AcMRJP 1-6 and AcApisimin mRNA in 5-10 days nurse bees were 63.64, 38.17, 3.37, 3.40, 0.85, 0.15, and 664.55 pg per individual bees, respectively.
6. The transcription levels of AcMRJP 1-6 and AcApisimin mRNA in 11-15 days nurse bees were 55.86, 28.21, 2.33, 2.50, 0.96, 0.44, and 602.0 pg per individual bees, respectively.
7. The transcription levels of AcMRJP 1-6 and AcApisimin mRNA in forager bees were 3.25, 2.81, 0.09, 0.29, 0.03, 2.62, and 236.04 pg per individual bees, respectively.

8. The relative ratio of mRNA level of AcMRJP1 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 19.6 : 17.2 : 1.
9. The relative ratio of mRNA level of AcMRJP2 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 13.6 : 10.0 : 1.
10. The relative ratio of mRNA level of AcMRJP3 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 36.7 : 25.4 : 1.
11. The relative ratio of mRNA level of AcMRJP4 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 11.7 : 8.6 : 1.
12. The relative ratio of mRNA level of AcMRJP5 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 27.9 : 31.5 : 1.
13. The relative ratio of mRNA level of AcMRJP6 in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 0 : 1 : 2.8 : 17.1.
14. The relative ratio of mRNA level of AcApisimin in 4 stages of honey bees (newly emerged bees : 5-10 days nurse bees : 11-15 days nurse bees : forager bees) was 1 : 14.7 : 13.4 : 5.2.

15. The roles of AcMRJP1-6 should have the other additional roles than nutrient especially in the forager bees.
16. The biological functions of AcMRJP6 may be different from the AcMRJP1-5.
17. Apisimin is most likely involved in other biological functions in addition to oligomerization of MRJP1.