CHAPTER V

CONCLUSION

- In AFLP analysis, a 316 bp fragment generated by *PstI*_{+AGT}/*MseI*_{+CAG} was found in *Tetragonilla collina* but not in 11 other stingless bee species. It was cloned and sequenced to develop *T. collina*-specific marker (called CUTc1).
- 2. The CUTc1 marker was successfully discriminated *Tetragonilla collina* from the 13 other stingless bee species and SSCP analysis of CUTc1 marker could further differentiate *Tetragonula pagdeni* from *Tetragonilla collina*.
- 3. This marker is convenient for differentiation of *Tetragonilla collina* from other stingless bees in Thailand and will help to prevent misidentification species for molecular systematic of stingless bees and for population studies of *T. collina*.
- CUTc1 marker also generated 3 genotypes in Thai *T. collina* (genotype AA, BB, and AB) and these distribution patterns strongly suggested biogeographic differentiation between *T. collina* originating from North and South of Isthmus of Kra.
- 5. The DNA fingerprints from TE-AFLP analysis, to analyze genetic variation in *T*. *collina* revealed high genetic diversity among individuals in each population.
- AMOVA analysis indicated the significant genetic differentiation among four geographic regions; North, Central, Northeast, and Peninsular Thailand. The smaller but significant differentiation was detected between samples from North and South of Isthmus of Kra.
- The greatest genetic differentiation of *T. collina* based on TE-AFLP derived marker (TECU marker) using SSCP analysis was observed among four populations; North+Central+Northeast, Prachuap Khiri Khan, Chumphon, and Peninsular Thailand.

- 8. The mtDNA diversity of *T. collina* by using SSCP analysis of 16S rRNA, COI, and cytb genes showed high genetic variation among individuals within each population.
- 9. AMOVA analysis of the 16S rRNA, COI, and cytb genes revealed high genetic differentiation among 6 populations; North, Central, Northeast, Prachuap Khiri Khan, Chumphon, and Peninsular Thailand. The significant genetic differentiations were also found between samples from North and South of Isthmus of Kra.

