CHAPTER 4

CONCLUSION

4.1 Conclusion

The flow injection - reduced volume column system for hemoglobin typing was developed. Even though ratio of HbA_2 + HbE to total hemoglobin cannot predict exactly what type of thalassemia the patient has, it can help indicate the existence of some types of thalassemia (i.e. β, EE homozygous, E trait types). The aim here is to develop and demonstrate that the proposed FI - reduced volume column system can be used to screen for patients with some types of thalassemia. Although the cause of deviation in results from the conventional column technique in the cause of Hb E trait and EE homozygous needs further investigation, the proposed system was still able to predict positive test results for beta-thalassemia trait, Hb E trait and EE homozygous. The proposed system offers some advantages over the conventional column techniques. These advantages include much simpler instrumentation with ease of operation, more automated system, shorter analysis time and lower amounts of sample and reagents used. These benefits will help reduce overall analysis cost and should be useful as an economic alternative technique for routine thalassemia screening involving a large number of blood samples.

4.2 Further works

The following works should be done in the future to improve the proposed system.

1. Higher degree of Automation
2. Multi-channel system
3. Investigation for the cause of any differences in results from the conventional system for E-trait and EE-homozygous thalassemia
4. Using different ion exchange resin and different buffer system