VI. CONCLUSION

The non-radioactive Southern hybridization, PhotoGene^{TM} Detection System was employed to determine the molecular basis of Hb H disease. The detection process involves three basic steps ; 1) A biotin-labeled probe is hybridized to the immobilized nucleic acid 2) Streptavidin - alkaline phosphatase(SA-AP) is bound to the biotin groups 3) The membrane is incubated with a substrate for alkaline phosphatase that luminesces when dephosphorylated. In this study, several steps has been adjusted to acheive the desired level of hybridization stringency. In addition, the major advantage is that this system allows the generation of multiple exposure times from a single blot to increase or decrease the signal intensity as need.

The developed conditions for Southern hybridization here used to characterize the molecular basis of Hb H disease in Northern Thai patients. It was found that among 28 patients with Hb H disease , 18 cases possessed --/$\alpha^{T}\alpha$, 7 cases possessed --/-$\alpha^{3.7}$, and 3 cases possessed --/-$\alpha^{4.2}$ accounting for 64%,25%,11%, respectively. From this data, we found that the majority of Hb H disease in Northern Thailand is in the form of deletion and nondeletion type. This data will be useful for studying, genetic counselling , prenatal diagnosis and prevention in the future.