

CHAPTER 6

CONCLUSION

The epithelial sheets were successfully generated by explants culture on denuded HAM with MMC-treated 3T3 and air-lifting method. There were no differences in epithelial morphology and expression of cells markers between cultivated limbal and oral mucosal biopsies. The cultivated epithelial sheets contained heterogeneous population including stem cells that were expected to proliferate after transplantation and differentiated cells that ensured that the cells differentiated themselves into corneal epithelium. Moreover, the histology and marker expression of transplanted ocular surface with cultivated limbal and oral mucosal epithelial sheets were most likely to have similar characters to normal eye. So, these two tissues biopsies have capacity in generation of cultivated epithelial sheets to use in treating LSCD. Furthermore, cultivated oral mucosal epithelium was able to be the alternative source of epithelial sheet in case of bilateral LSCD to get rid of immune rejection problem. From cryopreservation part, cultured epithelial cells morphology was similar between fresh and cryopreserved tissues with the containing of heterogeneous population including stem cells and differentiated cells. This study also introduced one of the effective CPA formulas, 25% DMSO and 25% propylene glycol, to vitrify limbal and oral mucosal biopsies for future use. However, further study is needed to compare the results in transplantation of cultured epithelial sheet from fresh and cryopreserved tissues.