Abstract

Biotechnological research in chicken transgenesis is still lagging beyond the mammals mainly due to the specificities of avian reproductive system. This thesis is trying to offer functionally complex approach to the chciken transgenesis through one of the techniques. Common transfection techniques were applied on chicken blastodermal and testicular cells to affirm this approach. Our original techniqe of sterilization of chicken testes was improved and applied. Stained testicular cells of donor male were transplanted into sterilized acceptors testes and subseqent tubuli recolonization and sperm production were described. The retroviral-based vector was developed and transplanted testicular cells were successfuly infected. Carried marker transgene (Green fluorescence protein, GFP) was detected in DNA of produced sperms and no significant CpG methylation was detected when sreening infected cells. Through the flow cytometry, testicular cells used for transplantation were analyzed. All major spermatogonia-derived populations were described including the side population (SP), possible group of spermatogonial stem cells.