CHAPTER 5

CONCLUSIONS

In this study, RNAi was utilized to study the role of *WT1* gene in breast cancer oncogenesis. Here, we demonstrated that siRNA targeted to WT1 gene was successfully used to efficiently knockdown *WT1* gene expression in breast cancer cell lines. This gene silencing effect was showed to be specific for *WT1* gene as no effect was detected in the cell transfected with non-specific siRNA (scramble siRNA; data not show). The experiment was concluded in below;

1. The mixed siRNA more effective than only one sequence of siRNA.
2. The minimum effective dose of siRNA is 25 nM that can inhibit proliferation of MCF-7 cell at 72 h after transfection.
3. The minimum dose of siRNA to significantly reduce WT1 protein expression was 50 nM at 72 h after transfection.
4. 100 nM of siRNA was able to inhibit the proliferation of MCF-7 cells and WT1 protein level in a time-dependent manner.

These data suggest that both growth suppression and gene silencing activity of siRNA were dose-and time-dependent manner. We can conclude that WT1 acts as an oncogene in breast cancer. In addition, siRNA was demonstrated to be the powerful tool for specific silencing of cancer promoting gene and could be potentially apply for gene targeted therapy in cancers. Further studies should be tested whether WT1 overexpression can be efficiently depleted by siRNA expressed from a DNA-based expression vector combined with a tumor-specific promoter, such that RNAi can specifically target oncogenes in cancer without affecting normal cells. Moreover, the experiment may be study the mechanism underlying WT1 mediated oncogenesis.