CHAPTER V

CONCLUSION

Three strategies, bet phenotypic test, colony hybridization using oligonucleotide probes and Southern blot hybridization using *gbsA* probe, were employed in the selection of the *betB* gene from the chromosomal DNA library of *A. halophytica*, a halotolerant cyanobacterium.

The bet phenotypic selection used the ability of the transformants containing *bet* genes to convert choline or betaine aldehyde to glycine betaine. This enabled the transformants to grow in the presence of growth suppressive concentration of NaCl.

The oligonucleotide probe no. 4402 and 4403 were designed from the homologous sequences at the N-terminal coding sequence and the C-terminal coding sequence, respectively, of the *betB* related genes. The homologies were approximately 60%.

The phenotypic selection and colony hybridization were not able to select the *betB* containing transformants.

The *gbsA* gene from *B. subtilis* was used as probe in the Southern blot hybridization analysis of *A. halophytica* chromosomal DNA digested with various enzymes. The hybridization signals suggested the presence of *betB* gene in *A. halophytica*. The hybridization bands corresponded to approximately 9.4 kb and larger than 23.1 kb in length.