

CHAPTER V

CONCLUSION

The results of the present investigation can be summarized as follows:

1. Choline and glycine betaine stimulated the growth of *A. halophytica* over the whole range of salinities tested.
2. Choline uptake activity is stimulated about three-fold when the osmolarity of the stress condition is raised by the addition of NaCl.
3. Choline uptake by osmotically upshocked cells occurred only after a considerable lag and could be prevented by chloramphenicol.
4. Choline uptake can be triggered by increase with osmoticum (sorbitol, mannitol and sucrose).
5. Lineweaver-Burk transformation of the data, the apparent K_m 's of control and stress condition were 278.6 and 256.4 μM respectively, the V_{max} 's were 17.6 and 35.7 nmol/min/mg protein. respectively.
6. The uptake of choline by *A. halophytica* was susceptible to a variety of inhibitory agent.
7. Choline dehydrogenase was mainly present in membrane fraction and enzyme activity was enhanced by high salinity of growth medium
8. Choline dehydrogenase was inhibited by substrate analog.
9. The proteins with apparent molecular masses of 19.9, 26.2 and 47.8 represented the most abundant proteins in all periplasmic preparations. Proteins with apparent molecular masses of 34.6 and 83.9 kDa represented the periplasmic fraction

proteins which differed significantly between cells adapted to 0.5 M and 2.0 M NaCl.

10. Fraction of periplasmic obtained from cells grown at low or high osmolarity were subjected to non-denaturing PAGE in the presence of [*methyl*-¹⁴C]choline, in 0.5 M NaCl grown cells a weak band was observed and in 2.0 M NaCl grown cells strongly enhanced band was observed.