B-86 Isolation of Sodium Chloride resistant cells from tomato cell suspensions

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Through a stepwise adaptation process to increasing levels of NaCl (increments of 50 mM NaCl at 7 day intervals) in the medium, salt resistant cells of tomato (*Lycopersicon esculentum* cv. *Rodeo)* were selected. The adapted cells grew in a MS medium supplemented with 200 mM NaCl. The adapted cells showed a low growth rate (reduced fresh weight) than cells growing in a medium devoid of NaCl. Cells growing in a medium without added NaCl doubled their biomass in 4 days as compared with the adapted cells which took as long as 8 days to double their biomass. Cells growing in the presence of NaCl showed a slight brownish pigmentation and cell clusters were non-friable. Under the microscope a large portion of the cells appeared elongated whereas cells growing in a medium devoid of NaCl had a higher growth rate with fine friable pale yellow cell clusters, and the cells appeared spherical. Though not significantly different from the normal cells, the adapted cells had a higher number of non-viable cells.

This halophilic response of adopted cells was lost when they were transferred to a MS basal medium devoid of salt. The growth of the latter cells in the MS medium was initially low. The acquired character to grow in a NaCl supplemented medium in this study thus cannot be considered as stable.