

Assessment of genetic variation and Heavy metal concentration on green mussel (*Perna viridis*) in South Indian coastal region using RAPD markers

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Environmental pollution is caused by the deleterious effect resulted due to anthropogenic activity. Toxic pollutants affect marine organism and enter the food chain and might end up as sea food, causing various problems. Naturally living organism can accumulate essential and non essential heavy metals in their tissue, which can cause deleterious effects by interfering their metabolic activities. Green mussel (*Perna viridis*) have been widely used as efficient bio monitor organic and inorganic contaminants in marine environment. Toxic pollutant such as heavy metal causes gamete loss due to the cell death, embryo mortality (lethal mutation), abnormal development, neoplasia, heritable mutation, and reduced reproductive capacity which may be cause genetic diversity in the marine organisms. Random Amplified Polymorphic DNA (RAPD), is used to

determine genetic diversity of the population of the green lipped mussel (*Perna viridis*) collected from contaminated and uncontaminated site. Heavy metal levels were all so measured in the adductor tissues of the mussel from all the four sampling sites (Zn, Ni, Cd, Cr, Fe, Hg, As, Pb and Cu). The present study examines the genetic structuring of a subset of four green mussel population using RAPD techniques. Genetic variation was observed, but no high level differences between the populations of this region. This hypothesis might explain genetic diversity observed within each population and the moderate genetic differentiation among populations. Thus the study suggest that RAPDs could be helpful in providing information about genetic diversity of the population.