

## **Extraction of total RNA and identification of different genes in mangrove plant involved in its adaptability to the variety of stresses**

### **ABSTRACT**

Nucleic acids extraction from mangroves as woody plants needs lots of practical experience. In the present study, three different methods and the RNeasy plant mini kit were used to extract nucleic acids from mangrove plant. Modified CTAB method provided high integrity and concentration of DNA and RNA, respectively from roots and leaves. This method was successful in extraction of RNA from roots but failed for leaves of mangrove. The CTAB with  $\beta$ -mercaptoethanol increases RNA concentration while it decreases the purity of RNA. High yield of RNA extracted from mangrove leaves was obtained by modifying the SDS method. However, the integrity of RNA decreased. When polyvinylpyrrolidone was used to inhibit polyphenol oxidase activity, the yield and integrity of RNA had improved significantly. Therefore, the objective of this study was to isolate and identify the different genes involved in the adaptation of mangrove plants to different kind of stresses. Two-month old seedlings of the *Rhizophora apiculata* were exposed to 450 mM NaCl for 24 hours under hydroponic culture. Then, the expression of dihydrolipoamide dehydrogenase (DLDH) gene was studied using reverse transcriptase-PCR and real-time qRT-PCR.

**Keyword:** Intact RNA; Mangrove; Modified methods; Nucleic acids extraction; RNA extraction; RNA integrity