

Generation and analysis of expressed sequence tags from the mangrove plant, *Acanthus ebracteatus* Vahl

Abstract

Salinity is a major abiotic stress that greatly affects plant growth and crop production. Sodium ions in saline soil are toxic to plants because of their adverse effects on potassium nutrition, cytosolic enzyme Activities, photosynthesis, and metabolism. It is important to identify genes involved in salinity tolerance from mangrove plants that survive under saline conditions. In this study, a total of 864 randomly selected cDNA clones were isolated and sequenced from the primary cDNA library of *Acanthusebracteatus*. Among the 521 readable sequences, 138 of them were assembled into 43 contigs, whereas 383 were singletons. Sequence analyses demonstrated that 349 of these expressed sequence tags showed significant homology to functional proteins, of which 18% are particularly interesting as they correspond to genes involved in stress response. Some of these clones, including putative mannitol dehydrogenase, plastidic aldolase, secretory peroxidase, ascorbate peroxidase, and vacuolar H⁺-ATPase, may be related to osmotic homeostasis, ionic homeostasis, and detoxification.