

Abstract

Alba family proteins are highly conserved in all domains of life. They are involved in RNA metabolism in Archae and Eucarya, while they are involved in the chromatin organisation in Crenarchaea. In animals, ALBA proteins were identified to associate with RNase P/MRP subunits. The objective of my thesis was the characterization of ALBA family proteins in a model plant *Arabidopsis thaliana*. The *Arabidopsis* genome contains six genes with close homology, three from Rpp20-like subfamily and three of Rpp25-like subfamily. Here I present the localization of GFP-fused proteins in *Arabidopsis* stable lines harbouring constructs cloned by Gateway® Technology. ALBA proteins were localized in the cytoplasm and undefined particles in root differentiation zone and in mature pollen. The characterization of the respective T-DNA insertion lines did not reveal significant phenotype defects in growth and development of sporophyte and gametophyte in comparison to Columbia-0 plants, probably because of likely functional redundancy of the paralogs. Expression profiles and localization of ALBA proteins suggest their possible role in differentiation and dehydration stress response in *Oryza*. They were also observed to associate with repressed mRNA transcripts in storage EPP particles. Collectively, I propose the likely role of ALBA proteins in cytoplasmic RNA metabolism during *Arabidopsis* development.