

Abstract

Plant development is a complex process where different factors come into play. The expression of certain genes, which determine basic plant structure and its signaling pathways, is also of great importance. The AHL gene family, which in case of *Arabidopsis thaliana* includes 29 members, is one of those determinators that have an impact on plant development on several levels. As far as structure is concerned, the AHL proteins are typically composed of two parts – the DNA-bonding AT-hook motif and PPC domain, which defines nuclear localisation and eventually enables oligomerisation. In terms of phylogenetics, the AHL proteins are divided into clades A and B on the basis of number and type of these domains. When it comes to affecting plant development, these nuclear proteins are capable of bonding with the corresponding DNA, and in cooperation with other factors influencing gene expression. In the plant body the AHL proteins are involved in root and floral organogenesis and also cooperate with a number of signaling pathways of phytohormones, such as auxins, gibberellins, brassinosteroids or senescence hormones. Moreover, they take part in photomorphogenesis or control systematic immune responses of the plant.

Keywords: AHL, AT-hook, PPC domain, nuclear protein, *Arabidopsis thaliana*