

Role of VPNB1 in vascular tissue differentiation

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VPNB1 is a low weight armadillo repeat, nuclear and cytoplasmic protein exclusively expressed in the vascular tissue and appears to be involved in xylem and phloem differentiation. Data from NCBI demonstrate the presence of 4 armadillo motifs in the N-terminus end of the *VPNB1* protein and indicate this region as the putative peptide binding site, while the C-terminus end is free of protein motifs. *VPNB1* shows a dual localization, since N-terminus fusion with YFP guide the *VPNB1* protein to nuclear bodies, and N- or C-terminus fusion with GFP direct the protein to the cytoplasm. Interestingly, *VPNB1* is present in the gene expression profile of every global microarray analysis associated with the vascular tissue differentiation. During the implementation of a Vascular Cell Induction Culture System Using Arabidopsis Leaves (VISUAL) in wild type Columbia and *vpnb1* cotyledons we observed less induced cells in *vpnb1* than in wild type cotyledons. Furthermore, under these inductive conditions, *vpnb1* cotyledons display and increased frequency of vasculature interruptions compared to wild type. The presence of SNBE (Secondary wall Nac Binding Elements) in the *VPNB1* promoter sequence, the confirmed induction of *VPNB1* expression by the *SND1* and *VND7* transcription factors (via SNBE), as well as the specific vascular tissue expression pattern and the data from the VISUAL GUS expression system, are in line with the significant role of *VPNB1* during vascular tissue differentiation.

Biography

Varvara Podia is affiliated to National and Kapodistrian University of Athens. She is a recipient of many awards and grants for his valuable contributions and discoveries in major area of Plant Molecular Biology, Plant Biotechnology, Plant Genetics etc. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in his wide range of publications in various national and international journals.