

## **Role of CHB3 protein in DNA-binding specificity of SWI/SNF chromatin remodeling complex**

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Plant development is complex process associated with multistage regulation. Chromatin remodeling complexes which use energy for sliding or completely deleting nucleosomes from the DNA chain play an essential role in development.

*Arabidopsis thaliana* mutant *bractea* (*bra*) which is characterized by multiple alterations in development such as dwarfism and presence of bracts and terminal flower was obtained and studied in our laboratory. Precise mapping using whole genome sequencing showed that *bra* phenotype is caused by the nonsense mutation in *CHB3* gene which encodes one of DNA-binding subunits of chromatin remodeling complex SWI/SNF.

The specificity of DNA binding by SWI/SNF chromatin remodeling complex was analyzed. We performed a comparison of gene expression levels in wild type *A. thaliana* and in *bra* mutant using RNA-seq. The next step was to plot the density of differentially expressed genes along the chromosomes. Density analysis revealed six regions 290 kb length where fraction of differentially expressed genes was significantly increased.

Our findings evidence that CHB3 protein takes part in specificity of DNA binding by SWI/SNF chromatin remodeling complex. Our future research will be aimed at the investigation of other genes of SWI/SNF complex in order to verify if there are other subunits which have specificity to DNA binding.

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