



## ***ABSTRACT***

*"Chromatin control of growth, development and plasticity in plants"*

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Chromatin is a higher order structure of repeated nucleosomes that consist of DNA wrapped around histone cores. Chromatin state, i.e. open or closed, is important for a number of DNA-related processes such as replication, recombination and transcription. There are several types of complexes that determine chromatin state amongst which the chromatin modifying complexes that modify the amino-terminal tails of histones to regulate accessibility of DNA for DNA-binding proteins.

We focus on two histone modifying complexes in Arabidopsis, Elongator and histone H2B MONOUBIQUITINATION 1, that positively regulate transcription. Their role during plant growth and development is studied and their regulatory networks are unraveled. Upstream signaling pathways are identified through genetic interaction analyses and tandem affinity purification, and downstream target genes by microarray and chromatin immune precipitation. The aim of our research is to get insight into the environmental or developmental crosstalk between histone modifying enzymes and the RNAPII transcription complex, and their mechanism of target gene selection. Research in crops will also be highlighted.