RNA polymerase II (pol II) transcribes all protein-coding mRNA and several other RNAs. Activity of pol II is regulated by phosphorylation and dephosphorylation of carboxyl-terminal domain (CTD) of the pol II largest subunit. Plant genomes encode a large number of CTD phosphatase-like (CPL) proteins but the function of most is unclear. Our systematic analysis of CPLs started to reveal relationship between reactions catalyzed by some CPLs, and transcriptome analysis of cpl mutants indicated greater diversity of pathways they regulate. I will present our recent studies to connect CPLs to specific signaling pathways including osmotic/cold stress, hormones, metal homeostasis, and genobiotic stress responses.


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