



Category: Plant Genomics

Partial Scholarship Award Winner

# High-throughput sequencing of small RNAs and analysis of differentially expressed microRNAs associated with Brassinosteroid signaling in *Arabidopsis thaliana*

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## Abstract

Plant hormones have a profound effect on growth and development. Among them, Brassinosteroids (BRs) is the class of steroid hormones regulating a wide range of developmental and physiological processes during the life cycle of plants. Now the question is how BRs may impact such diverse developmental and physiological processes which remained unanswered. It is now known that unambiguous regulation of gene expression is dominated by involvement of non-coding RNAs such as microRNAs. Evidences support that, regulatory action of miRNAs in plants that have direct implication in normal growth, development and adaptation. The clear picture of microRNAs mediated BRs mechanism regulation is unknown. Deciphering the interactive role of miRNAs and BRs at genomic level could be the enticing phenomenon. The work was started with to figure out the the effect of Brassinosteroid on growth and development of *Arabidopsis thaliana* followed by small RNA profiling to know the responsible microRNAs involved in BR signalling pathways. The present work is giving strong evidence about the role of BR in plant development and adaptation. In addition, Brassinosteroid associated known and novel microRNAs were identified from small RNA sequenced data. Further the work will be carry forward with the functional characterization of identified BR responsive miRNAs.

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