

International Conference on **Transcriptomics**

July 27-29, 2015 Orlando, USA

Studying the expression pattern of auxin-associated genes in Carya cathayensis (Hickory) during the grafting process

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A pplication of various hormones improves the grafting process and among which auxin plays a vital role for the formation of vascular reconnection. Auxin role in the grafting process was analyzed by studying the differential expression pattern of auxin-associated genes (ARF, GH3) and transporter genes (ABC and Aux: Hyd) under auxin- and NPA- (an auxin inhibitor) applied conditions at 0, 3, 7 and 14 days after grafting (dag). Analysis shows that the expression of GH3, ARF and Aux: Hyd genes were found to be low at the time of grafting but increased at 3 and 7 dag and again get reduced at 14 dag. While the expression of ABC gene was found to be high at 14 dag and got reduced at 3 and 7 dag. Further the application of IAA or NPA to the grafted sample is not influencing the gene expression in a concordant way. With the availability of rough draft unigene library for Hickory tree species to our group, 34 different ARF genes were identified and analyzed for their expression level at 0, 7 and 14 dag. Among the 23 genes analyzed, 15 genes expression level are not affected at various time of analysis and 5 of the genes expression were not detected in the grafted plants. While 3 of the gene expression level got drastically reduced at 7 and 14 dag when compared with 0 dag which shows that these ARF genes have specific role in the grafting process which has to be studied in detail in the future.

Biography

Bingsong Zheng has completed his PhD in 2003 from Zhejjang University and Postdoctoral studies from INRA. He is the Vice-Dean of School of Forestry & Biotechnology, Zhejjang A & F University. He has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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