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Innovation of cotton germplasm of drought and salinity tolerance

Cotton, a kind of crops with strong drought- and salt-resistance, is important to explore excellent drought- or salt-tolerant genes and improve the level of drought- or salt-tolerance on cotton. The study was performed with *Gossypium hirsutum* cv ZhongH177 and Zhong9835 as the material, 12 genes of drought- or salinity-resistance were isolated from the mitochondria, which plays an essential role in drought- and salt-tolerance of plants. Based on 0.4% salt stress method, we obtained three salt-tolerance related gene *ccmC*, *rps12* and *nad3* from mitochondria of cotton. We cloned them from (*Gossypium hirsutum* L., a drought- and salt-tolerance variety). Subsequently, the analysis of biological information were used; subcellular localization of those genes were found out; based on over-expression vector, transformed into *Arabidopsis thaliana* by floral-dip method and transformed into cotton by gene gun transgenic technology. The over-expression vector pBI121-rps12, pBI121-ccmC and pBI121-nad3 were constructed and transferred into cotton by gene gun transgenic technology, which laid a certain foundation for further analysis salt-tolerant molecular mechanism and salt resistance germplasm innovation of cotton.

Biography

Wuwei Ye is a Professor and Deputy Director in Cotton Germplasm Research Department of Institute of Cotton Research at CAAS, China. He has been involved in studies related to cotton germplasm identification, innovation and biodiversity research for 30 years, focusing on resistant on cotton germplasm, such as salinity and drought-resistance. He is responsible for the coordination of identification and implementation of cotton germplasm identification center in China.

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