

Evaluation of phospho mannose isomerase (pmi) gene as a selectable marker in indica rice

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Abstract

Genetically modified crops are a field reality and adopted by the farmers at a faster rate. Keeping in view of the increased demand for food and nutrition in a changing climate there is stringent requirement for generation of large number of successful transgenic events where there is no solution from gene pools of donar varieties. However transgenic technology is a sequential, cumbersome and expensive process. Moreover, it is time consuming, one has to wait for the inheritance of successful transgene into the next generation. Selectable marker genes will play a pivotal role in transient gene confirmation. In the context where the application of herbicide/antibiotic genes as selectable markers is limited; Sugar based selection involving phospho mannose isomerase gene will be helpful in screening of the transformed events. Compared to the conventional approach which usually relies on negative selection, these positive selectable marker genes allow for the transformed cells to be identified without causing lethal effect in the non-transformed counterparts. Mannose based selection system is evaluated in indica rice and the optimum selection concentration is standardised. The results, prospects and consequences are discussed.

Biography :

Dr.Sai Krishna Repalli has completed his PhD from Utkal University. He had done his doctoral research at ICAR-National Rice Research

Institute (NRRI) in the area of transgenics. He is currently working as Research Associate at NRRI.