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Map based cloning of resistance to bacterial leaf blight gene using QTL analysis in rice

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Abstract

Agriculture is the most primitive civilized Activities of mankind but also the propellant of civilization development. Because it is the most basic material goods source of mankind. Among these materials rice is one of the most important part of these, we call them the substance of survival. From the beginning of the agricultural activities to the present we have experienced three industrial revolutions and are experiencing the Fourth Industrial Revolution. With the development of science and technology makes the efficiency of agricultural production is higher and higher, but compared with the original we are facing the same problem: natural disasters; pests and diseases; now also face the depletion of resources, environmental degradation and other issues. Therefore, improve and cultivate new crop varieties to make it better resistance and more production for better develop modern agriculture. It's very helpful for human social development. And also it is the responsibility and task of modern molecular breeding. In this study, I used bacterial leaf blight to find a better resistance gene to improve the resistance of rice. Frist Cultivate k3 of bacterial leaf blight, than inoculation by leaf clipping method (Kauffman,1973) in CNDH and SNDH population at 40days after rice transplanting. Check the lesion length by inoculation plants at 14days after inoculation, and record data for QTL analysis program. Than I get 4 intervals in 3 different chromosomal regions. I found these defense genes in the 4 intervals. So I used NCBI, Justbio, Rapdb, etc. to finding these genes in physical map, than design primer for map base cloning. At last these defense genes will be employed in further research for introduction of the gene to the parental plant and rice breeding for solving food crisis.

Keywords: BLB, Rice, QTL analysis, Map base cloning

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