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Isolation of Natural Products and Production of Overexpression Rice (*Oryza sativa* L.) Effective in Treating Sepsis

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[Introduction]

Due to the green revolution of the 1960s, the world's rice production continued to increase. However, rice made during this time were very vulnerable to the diease. Rice production continued to decline due to various insects and various biological and nonbiological factors. In particular, WBPH and BPH are known to be the most damaging factors for rice plants. The WBPH transmits major viruses like the SRBSDV virus and further lowers rice production. In this study, the location of the WBPH resistive gene was identified through QTL mapping, and WBPH resistive transgenic plants was produced through map base cloning. In addition, new substances that resist WBPH were found in WBPH resistant pathways by regulating the expression of critical CM genes, and these new substances were isolated and several experiments related to human cancer were conducted.

[Materials and Methods]

CNDH 120 line was used in this study. The WBPH was infected with CNDH line, and after infection, the size of the lesion and the substance of the leaf of rice were extracted for QTL mapping. For QTL mapping, WinQTL Cartographer 2.5 program was used and a LOD(logarity of odds) value of 3.0 or higher was selected to find a more reliable QTL. In addition, TLC and HPLC analysis were performed after WBPH inoculation for material analysis.

[Results and Discussion]

WBPH was inoculated 11 days after planting to select WBPH resistant line from CNDH line, and survival was confirmed 21 days after inoculation. QTL mapping was performed using WBPH lesion size, and QTL mapping was performed using the newly prepared material after WBPH inoculation. As a result, a common QTL was detected in RM280-RM6909 of chromosome 4, and their LOD value was 3.5. The gene sequence detected through QTL mapping was used to produce overexpression rice that produce WBPH and produce large quantities of new substances. C-9 was extracted and isolated from overexpression plants. The administration of C-9 to mice with septicemia found that more than 60 percent of mice with sepsis survived. Therefore, it is determined that the new substance C-9 found in this study may not only be resistant to WBPH but may also help cure sepsis in humans.

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