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QTL Mapping for Protein Content Derived from a Cross between *oryza sativa* and Weedy Rice

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[Abstract]

Protein is a major nutrient of food and has long been studied for nutritional and utility value. Among them, rice protein is attracting attention because of its hypoallergenic characteristics and nutritional value.

Mutant DM225 with increased protein content was selected by EMS treatment on the weed rice Dharial. QTL analysis of Protein content was carried out using BC₂F₂ populations derived from a cross between “Hanareum2” as a recurrent parent and “DM225” as a donor parent. The protein content of populations was between 5~11%, with an average of 7.7%. To identify QTLs related to Protein content, 117 KASP markers (polymorphic ratio: 15%) showing polymorphisms between the parents were genotyped for the BC₂F₂ population. One QTL was detected between markers SK07_06 and SK07_10 on chromosome 7 (LOD: 28.1). This QTL explained 71.4% of the phenotypic variance for Protein content. This QTL will be useful for protein-related rice breeding program.

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