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[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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Cultivar Identification of Rice (*Oryza sativa* L.) by PCR Method and its Application to Processed Rice Products

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As the cultivars of rice affect markedly eating quality, processing suitability and price, identification or differentiation of rice cultivars is very important. The present authors developed suitable STS (sequence-tagged-site) primers for PCR (Polymerase Chain Reaction) and it became possible to identify rice cultivars using template DNA extracted and purified from rice grains. A multiplex primer set was shown to be useful to differentiate effectively rice cultivars produced in various countries by PCR. Two kinds of multiplex kit for identification of Koshihikari, the dominant cultivar in Japan, have been developed. The application of the cultivar identification method by PCR to processed rice products was investigated. The present authors developed an "enzyme treatment method," in which the gelatinized starch is decomposed by the heat-stable α -amylase at 80°C, followed by hydrolysis of proteins by proteinase K with SDS and purification of extracted DNAs by PCI (Phenol/Chloroform/iso-amyl alcohol). It became possible to identify the material rice cultivars of the processed rice products, such as cooked rice and rice cake, by the PCR method using template DNA prepared by the "enzyme treatment method."

Key words: rice, DNA, cultivar identification, PCR, processed rice product

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