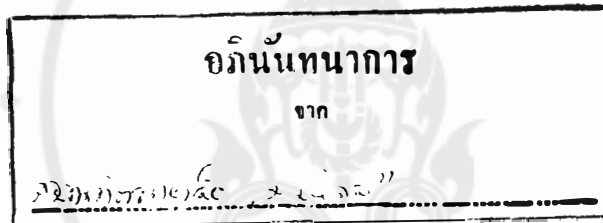




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CHARACTERIZATION OF CLONED DNAs ISOLATED FROM THAI RICE

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ABSTRACT

A study of a rice DNA clone earlier isolated in our laboratory from a lambda GEM 11 based genomic DNA library of *indica* rice, variety Khao Dawk Mali 105 was conducted. One DNA region localized mainly on the 5.7 Kb Xho I fragment of the original DNA clone, called gX5.7, was found to hybridize to RNA species of 1.5 Kb in size. The DNA sequence of the entire region characterized was 2819 bp in length. Another additional short DNA clone, C22, was also isolated from a rice cDNA library, prepared from KDML 105 RNA in lambda ZAP II vector. Its DNA sequence of 655 bp long was determined and found homologous to the 3' end of a 1.3 Kb EcoR I-Xho I fragment of the putative gene on gX5.7 with a 95.2 % sequence identity. Nucleotide sequence comparison between 2256 bp region of gX5.7 and known DNA sequences in databases revealed that 1484 bp from the 5' end showed the presence of a putative gene which had around 72-74 % sequence identity with several plant organellar small subunit rRNA genes and 96.3 % to that of prokaryotic *Agrobacterium tumefaciens*. About 300 bp downstream from this region also revealed regions whose nucleotide sequences were similar to tRNA^{Ile} and tRNA^{Ala} genes, respectively. Apart from the

length and the nucleotide sequence, the arrangement of three putative genes (16S rRNA-tRNA^{Ile}-tRNA^{Ala}) was also the same as plant chloroplast rRNA genes clusters. However, result from Southern blot hybridization of rice Xho I digested total DNA, ctDNA, and mtDNA, suggested that gX5.7 existed in rice mitochondrial genome.

