

TRANSLATION SYSTEM PROVIDED WITH MODIFIED GENETIC CODE TABLE

[ABSTRACT]

5 The present inventors used aminoacylated tRNAs prepared by ligating a pCpA-amino
acid to a tRNA lacking the 3'-terminal CA sequence using a ligase, and thereby succeeded in
discrimination between the NNA and NNG codons in specific codon boxes, which had been
difficult to achieve due to the presence of wobble base pairing. Furthermore, the inventors
assigned another amino acid to the NNU or NNC codon in the same codon box, and performed
translation of a sequence containing the NNU, NNA, and NNG codons, or the NNC, NNA, and
10 NNG codons to evaluate the codon discrimination ability. As a result, the codons of interest
were specifically translated into only the corresponding amino acids, achieving accurate
discrimination successfully. Furthermore, the inventors confirmed that similar effects can also
be obtained even when the nucleotide sequence of the tRNA body is altered.

15 [no suitable figure]