CLONING AND EXPRESSION OF ENVELOPE PROTEIN OF THAI GENOTYPE I STRAIN KE-093 OF JAPANESE ENCEPHALITIS VIRUS

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Abstract. The purpose of this study was to clone and express envelope (*E*) gene of Japanese encephalitis virus (JEV) genotype I, Thai strain KE-093. The *E* gene was amplified by PCR and cloned using the expression vector, pET-15b. Analysis of the insert sequence revealed a point mutation, which was corrected by site directed mutagenesis. The envelope 53 kDa protein expression was generated by *in vitro* coupled transcription translation system. Heterologous expression in *Escherichia coli* Rosetta 2 strain, but not in *E. coli* BL21 (DE3) resulted in 2 immunoreactive bands (13 and 53 kDa) using anti-JEV E protein antibodies, and an additional band (35 kDa) using anti-His antibodies, suggesting that E protein antigenicity is located at the carboxy-terminal region. This is the first report of a successful cloning and heterologous expression of an *E* gene of JEV genotype I. This should prove useful in the application for diagnostics and vaccine development of JEV genotype I strains.

Key words: Japanese encephalitis virus, *E* gene, Thai strain

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