

Picharn Theveethivarak 2007: Cloning and Expression of ORF7 Gene of Porcine Reproductive and Respiratory Syndrome Virus. Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Kaitkanoke Sirinarumitr, Ph.D. 116 pages.

Porcine reproductive and respiratory syndrome (PRRS) is a viral disease of swine caused by the PRRS virus (PRRSV). This disease is one of the most important agents causing economic losses to swine industry in Thailand. It is important to develop the efficient technique for differentiation the strains of PRRSV. The nucleoprotein (N protein) is the most important protein that the antibodies against N protein are the earliest detected antibodies used for detection. In the present study, the European and North American strains of PRRSV were successfully differentiated by RT-nested PCR assay using the specific primers. ORF7 genes that encode N proteins had been cloned and their proteins were produced in *E.coli* by the pBAD directional TOPO™ expression system. The recombinant ORF7 genes were successfully cloned and expressed. Using Western blot analysis, the purified recombinant N proteins were clearly reacted with anti-histidine monoclonal antibodies and hyperimmune serums from infected pigs. The recombinant N proteins may be a useful tool to detect PRRSV in Thailand.

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