

Kanokrat Srikijkasemwat 2006: Cloning and Expression of Porcine Interleukin-2 (IL-2). Doctor of Philosophy (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor Assistant Professor Theerapol Sirinarumitr, Ph.D. 115 pages.  
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This study was to clone and express porcine IL-2 using insect cells. The whole porcine interleukin-2 gene encoded complementary strand DNA (cDNA) was cloned using specific primers designed from the sequence data as report in GenBank. The recombinant plasmid porcine IL-2 was sequenced and used to produce the recombinant baculovirus containing porcine IL-2 gene. The recombinant baculovirus was used to inoculate High-Five cells for producing the recombinant porcine IL-2. The SDS-PAGE analysis showed the distinct band around 23 kDa which was approximately the size of porcine IL-2. The immunoperoxidase monolayer assay using goat anti-porcine IL-2 antibody of the infected High-Five cells showed the IL-2 in the cytoplasm of the cells. The dot and Western blot analysis of the recombinant porcine IL-2 using goat anti-porcine IL-2 antibody also showed the positive results. Biological activity of IL-2 was analyzed using T4 cell. The T4 cells showed proliferation after the stimulation with recombinant porcine IL-2. This assay gives 50% of maximal response induced by approximately 6.96 pg/ml of the recombinant porcine IL-2 proteins. Thus, the recombinant porcine IL-2 proteins were biologically functional and glycosylation of recombinant protein.



Student's signature



Thesis Advisor's signature