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Production of Transgenic Pig Harboring Tissue-type Plasminogen Activator Gene with Bovine- β -Casein Promoter

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Tissue plasminogen activator (tPA) plays important roles in the brain after excitotoxic injury. This study was conducted to produce transgenic pig harboring human tissue plasminogen activator (htPA) gene. Recombinant htPA(rhtPA) genes containing bovine- β -casein promoter (bBC) were prepared for microinjection and testified the expression level of htPA protein from the Chinese hamster ovary (CHO) cell lines before DNA microinjection into the porcine pronuclei. Concentration of htPA expression from the six cell lines (all of CHO cells) were average 212.4 ng/ml. Reconstructed DNA to used the CHO cells were microinjected into the pronuclei of *in vivo* derived porcine embryos. The 1,575 embryos microinjected with bBC promoter-tPA were transferred to 60 recipients and one hundred eight offsprings from 16 sows were delivered. The primers for amplification of rhtPA were designed 831 and 450 bp in size. We analysed the transgenes with PCR methods from all delivered piglet tails DNA, two of them were detected the transgenic founder pigs. This result was suggested that potential the purified rhtPA derived from transgenic pig's milk should be used for the treatment of a thrombus of human.

Key Words : *Transgenic pig, tPA, Microinjection, Embryo*