

Korea Institute of Oriental Medicine (KIOM)

## Robot That Can Measure Human Pulse

A Korean research team has developed an intelligent pulse-measurement robot, which can detect and analyze a person's pulse while moving itself along the subject's arm utilizing built-in sensors.

On July 11, Dr. Kim Jong-Yeol's research team of Korea Institute of Oriental Medicine (KIOM) revealed that his team had developed the robot jointly with Daeyo Medi Co., Ltd. This robot can detect pulse at pressure points in a similar manner as an oriental medical doctor.

With built-in multi-channel and piezoresistance sensors, the robotic pulse measurement device can adjust pressure along the arm. It is designed to analyze the condition of human organs, such as liver, heart, lung and kidney, automatically, utilizing the information collected at the various pulse-detection points.

If this robot, presently in use at hospitals, is adapted for home use, users will be able to obtain information about the state of their health easily at home with just the robot and common PC software. The core of the technology is the ability for direct measurement of changes in pulse through the robot's repetitive application of weak and strong pressure.



■ Robot That Can Measure Human Pulse

■ Cloned Pig for Diabetes Treatment

MGenbio Inc.,

## Cloned Pig for Diabetes Treatment



A domestic venture firm, MGenbio, Inc., has successfully produced a cloned pig that can be used for treatment of diabetes. MGenbio is focused on development of therapeutic applications using transgenic technology in pigs.

On July 13, MGenbio announced that it has produced a pig with human immune genes. This is the second production of an animal for treatment of hard-to-cure diseases following Seoul National University Prof. Hwang Woo-Suk's production of a cloned pig last year for use in xenotransplantation.

When commercialized, the pig developed by MGenbio can treat diabetes: a medical team would transplant pancreatic islets taken from the pancreas of the pig into diabetic patients and then the transplanted islets would secrete insulin to treat the disease.

The key to the research was overcoming the human immune rejection reaction. This is a body protection mechanism that when the organs of animals or other persons are transplanted normally attacks the organs like external invaders such as viruses. If a normal pig's pancreatic islets are transplanted into a diabetic patient, the natural killer cells in the human body, which carry out immune function, would kill the pig cells due to the immune rejection reaction.

Finding that 'HLA-G,' one of the genes related to the human immune function can reduce the natural killer cell's activity by almost 70%, MGenbio's research team has resolved the immune rejection problem by injecting it into the cloned pig. As a gene formed at the female placenta during pregnancy, HLA-G plays the role of protecting a fetus from the natural killer cells prior to birth