

New study reveals pigs could grow human organs

21 June 2011, by Deborah Braconnier

(PhysOrg.com) -- At the annual European Society of Human Genetics conference, a group of researchers presented their newly discovered technique that may soon enable pigs to grow human organs for transplant.

Lead researcher and the director of the Center for [Stem Cell Biology](#) and Regenerative Medicine at the University of Tokyo Professor Hiromitsu Nakauchi described the new technique called blastocyst complementation.

Using mice and rats the researchers injected rat's [stem cells](#) into mice which had been genetically altered so they were unable to produce their own organs. The mice instead grew rat organs.

The stem cells used are called pluripotent stem cells and are adult stem cells that can be taken from tissue and grow in any kind of cell within the body. These cells were injected into the mice embryos that were unable to grow a pancreas, an organ responsible for producing insulin. When the mice grew into adulthood, they displayed no signs of diabetes and the rat stem cells had developed into a pancreas.

The ultimate goal of the researchers is to take this technique and grow human organs inside [pigs](#). If this technique works it would be able to minimize the risk of human transplant rejection because the organs could be grown using the patient's own stem cells. This technique would also work to create a plentiful supply of organs for transplantation.

Using the mice as an example, human stem cells could be used to create a new pancreas to be transplanted into diabetic patients.

Nakauchi is currently looking for approval to use human stem cells for further research. This is the first time that blastocyst complementation has been shown to work, so the idea of growing human

organs is promising. Ethically, researchers are not able to make a human embryo organ deficient, so in order to test the idea of growing organs, another animal needed to be used.

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APA citation: New study reveals pigs could grow human organs (2011, June 21) retrieved 22 April 2021 from <https://medicalxpress.com/news/2011-06-reveals-pigs-human.html>

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