

Nat-Sci II Presentation:
Editing of Pig DNA May Lead to More Organs
for People

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December 6, 2015

The Article under Investigation

- “Editing of Pig DNA May Lead to More Organs for People,” appeared in New York times Science section (10/15/15). Written by Carl Zimmer.



In recent work with pig cells, scientists used the gene editing technique known as Crispr to alter 62 genes at once.

Axel Heimken/DPA, via Agence France-Presse — Getty Images

Genetics meets Surgical Technologies: CRISPR and Xeno-transplantation

- CRISPR : A recently developed method for “editing genes.”
- Xeno-transplantation : The transplantation of living cells, tissues or organs from one species to another.
- It has been recently shown that a particular complication that arises in xeno-transplantation, using pig organs, can be solved through gene-editing via CRISPR.

What happened with CRISPR?

- In October of 2015, scientists gathered at the National Academy of Sciences in Washington to talk about Crispr, a new method for editing genes.
- Carl Zimmer claims that "In the past couple of years, the technique has become so powerful and accessible that many experts are calling for limits on its potential uses — especially altering human embryos with changes that could be inherited by future generations."

CRISPR: a new method for editing genes

- CRISPRs (clustered regularly interspaced short palindromic repeats) are segments of prokaryotic DNA containing short repetitions of base sequences. Each repetition is followed by short segments of "spacer DNA" from previous exposures to a bacterial virus or plasmid.[2] It is pronounced "crisper" (Wikipedia).

Recent development with CRISPR

- "In a typical experiment, scientists use Crispr to alter a single gene. But in recent work with pig cells, Dr. Church and his colleagues used Crispr to alter 62 genes at once. The researchers hope that this achievement may someday make it possible to use pig organs for transplantation into humans." (Carl Zimmer)
- "But despite the large number of genes involved, Dr. Weiss and other experts cautioned that the new work doesn't mean that we've suddenly gained the power to bypass evolution. Crispr does not allow scientists to manipulate genes on a huge scale — yet."