

Human-Monkey chimeras

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In News: For the first time, scientists at the Salk Institute for Biological Studies in the United States have developed human cells in monkey embryos. On April 15, the findings of their research were published in the journal *Cell*.

Purpose of Chimeric Research

- Researchers agree that the ability to grow cells from two separate organisms together would provide scientists with a valuable tool for science and medicine, allowing them to learn more about early human growth, disease initiation and progression, and ageing.
- In addition, this type of study may aid in drug assessment and resolve the urgent need for organ transplantation.
- Chimeric instruments, according to researchers, offer a new medium for studying how diseases develop.
- For example, a human cell may be modified to express a gene linked to a specific form of cancer.
- Researchers could then study the course of disease progression using the engineered cells in a chimeric model, which may be able to tell them more about the disease than results obtained from an animal model.

What did the researchers come up with?

- Researchers have developed a chimeric tool by incorporating human cells into the embryos of macaque monkeys.
- Chimeras are organisms made up of cells from two different species, such as humans and monkeys in this case.
- For example, if this hybrid embryo was implanted in the womb of a monkey, it might develop into a new species

(however this was not the aim of this study).

- The monkey embryos containing human stem cells in this study survived and developed outside the body for 19 days.

Ethical Concerns

- **Survivability and Fertility of Hybrid Animals:** In 2014, an Irish farm accidentally created “Geep,” a hybrid between a goat and a sheep. Mules, which are the product of mating between a female horse and a male donkey, are another example of a hybrid animal (intentional breeding). Different species seldom cross-breed, and when they do, the offspring don’t live long and are susceptible to infertility.
- **Society’s Acceptance:** While further research into chimaeras which lead to improvements, potentially allowing them to be used as a source of organs for humans, these chimaeras will still be made up of a combination of human and non-human cells, which many people find unsettling.
- **Treatment of other lifeforms:** some argue that chimaera research has the potential to exacerbate animal injustice, while others argue that using part-human animals to meet human needs is ethical.

Hybrid Animal Laws in India

- The cultivation of hybrid animals has been prohibited in India since 1985.
- The “Rules for the manufacture, use, import, export, and storage of dangerous microorganisms, genetically modified organisms, or cells, 1989” (referred to as Rules, 1989) notified under the Environment (Protection) Act, 1986 control GMOs and their products.
- The Ministry of Environment, Forests and Climate Change, the Department of Biotechnology, and state governments are responsible for enforcing these rules through six

competent authorities.

- A collection of guidelines on enclosed studies, biologics, confined field trials, food safety evaluation, environmental risk assessment, and other topics was supported by the Rules of 1989.