Kidneys grown in rats could pave way for human transplant

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Scientists caution that it is only the first step in long process

- Scientists said that they have successfully used mice stem cells to grow kidneys in rat embryos, using a technique that could one day help grow human kidneys for transplant.
- But the researchers cautioned that their success was only a first step and that "serious technical barriers and complex ethical issues" remain before the process could be used for human organs.
- The technique has previously been used to grow mice-derived pancreases in rats, but the new study is the first evidence that it could one day provide a solution to the massive shortage of donor kidneys for people with renal disease.

Genetically modified

- The researchers collected rat embryo structures that had been genetically modified so they would not develop kidneys on their own.
- The embryos were then injected with pluripotent stem cells from mice and implanted into rat wombs so they could be carried to term.
- Pluripotent stem cells are a kind of "master" cells that can develop into any of the cells and tissue that make up the body.
- The researchers found that the mice stem cells produced apparently functional kidneys in the rats.
- The process of growing human organs in animals poses an ethical conundrum because human stem cells could develop into brain or reproductive organ cells in the host.

The Hindu


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