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## Scientists 'turn cow skin into muscle'



Stem cells have the ability to develop into any type of cell in the body

The scientists who helped clone Dolly the Sheep say they have managed to turn cow skin in to heart muscle in a move that could one day be used to create replacement tissues for transplant.

The US subsidiary of PPL Therapeutics announced on Friday that it had re-wound the genetic clock of skin cells, to create "master" stem cells.

The reverted cells were then programmed to develop into functioning beating heart cells, in the laboratory.

“ I believe it will be equally applicable to humans ”

**Dr Ron James, PPL**

The research has major implications for the controversy over using cloned human embryos to conduct research into new medical treatments.

It increases the chances of using adult stem cells, rather than those taken from embryos, to develop nerve tissue, heart muscle or even brain cells for transplant.

Stem cells are unprogrammed "master" cells with the ability to develop into any of the different kinds of tissue that make up the human body.

### Commercial secret

PPL Therapeutics is keeping full details of the technique used a secret for commercial reasons. But Dr Ron James, managing director

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of the Edinburgh-based biotech company, revealed the early findings of the work at a meeting of the British Fertility Society in London.

"The results of this experiment give us confidence that the method we are developing as a source of stem cells is working and I believe it will be equally applicable to humans," said Dr James.

In the past, scientists have focused on embryonic stem cells in their search for new treatments because these are more flexible than adult stem cells.



Dolly was cloned by scientists at PPL and the Roslin Institute, Scotland

But religious and pro-life groups have condemned the use of embryos for such research.

In January, Britain became the first country to allow the use of human embryos in stem cell research.

UK politicians voted in favour of extending the research done on human embryos to allow stem cells to be taken from embryos at a very early stage of development.

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