

Human intestinal tissue successfully grown in mice

A segment of human intestine has been grown in laboratory mice for the first time as part of research that could one day produce transplant “spare parts” for repairing diseased tissues and organs using a patient’s own skin cells.

The miniature intestine grew from a single stem cell to the size of a fingertip and was able to carry out many of the functions associated with digesting and absorbing food, scientists said.

It is the latest evidence supporting the idea that whole organs, composed of a complex arrangement of specialised tissues, could be made inside a patient’s body by exploiting the inherent power of living cells to organise themselves into a fully functioning structure.

In addition to growing human organs from scratch, scientists believe that the technology will produce better laboratory models of diseased tissue for testing drugs, which could speed up the development of new medicines, as well as offering alternatives to animal testing.

“These studies support the concept that patient-specific cells can be used to grow intestine,” said Michael Helmrath, of the Cincinnati Children’s Hospital Medical Centre in the US state of Ohio, who led the study published in the journal Nature Medicine.

“The idea is that one day it may be possible to grow replacement tissues within the patient without the need for an organ transplant. It essentially uses the ability of cells themselves to self-organise into a working organ.”

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