

## Editor's Summary

9 April 2009

### Virus-free iPS cells

The discovery that non-germline adult cells can be reprogrammed to become pluripotent, able to differentiate into any cell type, opened up exciting possibilities. Reprogrammed cells — called induced pluripotent stem (iPS) cells — should have great potential in regenerative medicine, but most current methods of producing them involve viral gene delivery that could cause abnormalities in the induced cells. Two groups in this issue report on a collaboration that has succeeded in producing pluripotency in human cells without using viral vectors. Stable iPS cells were produced in both human and mouse fibroblasts using virus-derived 2A peptide sequences to create a multicistronic vector incorporating the reprogramming factors, delivered to the cell by the *piggyBac* transposon vector. The 2A-linked reprogramming factors, not required in the established iPS cell lines, were then removed.

#### NEWS AND VIEWS

##### **Stem cells: Low-risk reprogramming**

New techniques circumvent a roadblock to the production of embryonicstem-cell-like lines from adult tissue. Such reprogrammed cell lines should be much safer to use for therapy.

Martin F. Pera

doi:10.1038/458715a

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#### LETTER

##### ***piggyBac* transposition reprograms fibroblasts to induced pluripotent stem cells**

Knut Woltjen, Iacovos P. Michael, Paria Mohseni, Ridham Desai, Maria Mileikovsky, Riikka Hämäläinen, Rebecca Cowling, Wei Wang, Pentao Liu, Marina Gertsenstein, Keisuke Kaji, Hoon-Ki Sung & Andras Nagy

doi:10.1038/nature07863

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#### LETTER

##### **Virus-free induction of pluripotency and subsequent excision of reprogramming factors**

Keisuke Kaji, Katherine Norrby, Agnieszka Paca, Maria Mileikovsky, Paria Mohseni & Knut Woltjen

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