In the news

CANCER-FREE IPS

Stem cells have once again been in the news, as the 8-year ban on US federal funding of research on embryonic stem cells was lifted this month. This was accompanied by good news regarding induced pluripotent stem cells (iPS), as two groups of researchers revealed methods of producing iPS that do not harbour viruses, which can cause tumours in the recipient.

Rudolf Jaenisch, Frank Soldner and colleagues at the Massachusetts Institute of Technology created vector-free human iPS by using the Cre-lox system to remove the transgenes that were used to reprogramme the cells. With the same goal, groups led by Keisuke Kaji in the UK and Andras Nagy in Canada created iPS using a transposon rather than a viral vector to deliver the reprogramming genes to human and mouse cells, and then demonstrated the seamless removal of the added material. “The problem is if you leave the factors behind... they could misbehave and could create cancer,” said Andras Nagy ([The Boston Globe](#) 6 Mar 2009).

Many researchers praised the work as a significant step toward realizing the promise of regenerative medicine, but stressed the amount of work left to do. “Our paper presents one possibility — not yet the perfect solution — of a very high reduction of risks of developing tumors,” said Soldner ([Bloomberg](#) 5 Mar 2009), and his co-author Jaenisch stressed, “[b]efore you get to patients, there are many issues to be resolved. I would think therapy is pretty far away” ([New York Times](#) 5 Mar 2009).

With some commentators speculating that embryonic stem cells might become obsolete, Robin Lovell-Badge, of the National Institute for Medical Research in London, was cautious: “We still have a lot to learn from human embryonic stem cells ... and this knowledge is necessary in order to know whether human iPS cells are truly useful or not” ([The Times](#) 2 Mar 2009).

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