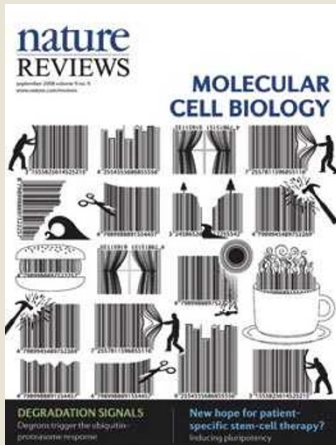




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► **COVER:** 'Stress codes' by Vicky Askew, inspired by the Review on p702



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Pluripotent cells offer great promise for the future of regenerative medicine. However, cells with pluripotent potential are difficult or impossible to isolate from patients, which makes methods for experimentally induced pluripotency in readily available somatic cells invaluable. Accompanying this issue, a Poster by Christopher Lengner and Rudolf Jaenisch compares and contrasts the properties of pluripotent embryonic stem cells with those of laboratory-generated pluripotent cells. The Poster ([www.nature.com/nrm/posters/stemcellreprogramming](http://www.nature.com/nrm/posters/stemcellreprogramming)) was produced with generous support from STEMCELL Technologies.

Induced pluripotent stem (iPS) cells — one of the approaches that has been used to experimentally induce pluripotency in somatic cells — is the subject of both excitement and controversy, as discussed by Shin-ichi Nishikawa and colleagues on page 725. Reprogramming a differentiated somatic cell into a pluripotent cell involves a cocktail of four retrovirally delivered transcription factors. However, other combinations of transcription factors have also been reported, highlighting how little we know about reprogramming. Also, retroviruses carry disease risks, and one factor, MYC, can promote tumorigenesis. Current research efforts are therefore aimed at making the approach safer.

Although iPS-cell technology bypasses the need for embryo-derived cells, it presents new ethical dilemmas. For example, iPS cells from a man could, hypothetically, generate both male and female gametes, which could be used to effectively 'clone' a new person by *in vitro* fertilization. Realistically, however, iPS-cell technology remains far removed from the clinic. For now, it will most likely be used to produce models for studying disease and testing drugs. Indeed, the first disease-specific iPS cells were recently reported, just 2 years after iPS-cell technology was developed.

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on acid-free paper