

## In the news

### MAKING BLOOD FROM SKIN

Human skin fibroblasts can be converted into haematopoietic progenitors and mature blood cells, according to a study published in *Nature* (7 Nov 2010; doi:10.1038/nature09591). The findings follow on from earlier studies showing that mouse fibroblasts can be converted into neurons and muscle cells.

Szabo *et al.* transduced human skin fibroblasts with the pluripotency factor OCT4 and grew them with cytokines known to stimulate early haematopoiesis. After a few days, the cells expressed the pan-haematopoietic factor CD45 and eventually gave rise to all blood cell types (myeloid, erythroid and megakaryocytic lineages), depending on the cytokines added to the medium. The CD45<sup>+</sup> cells also gave rise to blood cells when transplanted into immunodeficient mice, indicating their potential clinical utility. Importantly, the skin cells did not become pluripotent before converting to blood cells, as they did not express pluripotency factors aside from OCT4. Thus, the authors believe that these cells will be safer to use therapeutically than induced pluripotent stem cells as they have lower tumour-forming potential.

The team hope that the technique could be used in the clinic in the next 2 years. "There is a lot of work to be done but I would be disappointed if we were not trying it on patients by 2012," said Mick Bhatia, senior author of the study ([Telegraph.co.uk](http://Telegraph.co.uk), 8 Nov 2010). The technique could be used to make blood cells from a patient's skin, thus overcoming the risk of rejection and the shortage of blood donors. Moreover, Bhatia thinks that this is an important step for the treatment of patients with cancer, whose haematopoietic system is destroyed by chemotherapy and radiation, as the "technique will provide an alternative blood source that is healthy and allows them to continue therapy and eradicate the tumour." ([guardian.co.uk](http://guardian.co.uk), 8 Nov 2010.)

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