

Laboratory-grown skin brings new hope for victims of burns

Mark Henderson

Sheets of "substitute skin" have been grown from embryonic stem cells in research that promises to lead to new treatments for burns.

French scientists have coaxed master cells from human embryos to form immature skin cells called keratinocytes, and shaped them into a layer of skin by growing them on a matrix.

The study, led by Christine Balde- schi, of Inserm, the French research institute, suggests that it could be possible to use skin grown from stem cells as a temporary replacement for patients with large burns.

Patients with serious burns often have tissue replaced with autologous skin grown from their own cells. These grafts take three weeks to grow, putting patients at risk from dehydration and infection. Skin from dead

bodies is sometimes used, but its availability is limited and it can be rejected.

The scientists wrote in *The Lancet*: "We have shown that keratinocytes can be derived from human embryonic stem cells. Growing human epidermis from human embryonic stem cells could have clinical relevance as an unlimited resource for temporary skin replacement in patients with large burns awaiting autologous grafts."

In an accompanying article, Holger Schlueter and Pritinder Kaur, from the Peter MacCallum Cancer Centre in Melbourne, Australia, wrote: "This report takes research into regenerative skin stem cells into the next level. This finding suggests that keratinocyte allografts (grafts from a donor) derived from hESC keratinocytes could be transplanted on to burnt patients awaiting skin grafts with a reduced risk of rejection."



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