

Refining artificial skin development

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Artificial skin development has been used for a long time but it has its drawbacks coming along with it. Although it is an essential and needful discovery, its use has merits along with demerits. Tissue-engineered skin is a substitute for natural skin which is mainly cultured in allogeneic, autologous cell suspensions or sheets. It has been used for years for treating burn victims. However, collagen-based artificial skin has proved to be much more effective in wound care but immunological rejection hinders its progress in the field of wound healing and tissue regeneration. Collagen-based skin can be engineered in such a way that it has the least chances of being rejected by the host tissue and can easily adapt to the skin of the host by growing at a faster pace and reducing the chances of infection. The rejection occurs mainly as a result of activation of T cells as well as accessory B and NK cells that destroy donor cells and this could be overcome with the help of bioengineered skin developed from stem cells. Unlike artificial skin substitutes that repair damaged skin by providing protection from infection and aid in wound healing, the stem cells provide complete skin functionality as well as sensitivity. Hence, the issues of graft rejection could be resolved with stem cell technology and effective skin repair or skin replacement therapy could be achieved.

Keywords: Artificial, Collagen, Infection, Graft rejection, Allogenic, Autologous cell suspensions, Substitute

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