



TECHNOLOGY

Macroporous Hydrogels for Directed Stem Cell Differentiation

OVERVIEW

Researchers at the University of Maryland have demonstrated that modifications in biomaterial architecture can be used in scaffold design to upregulate endogenous expression of osteogenic growth factors by human mesenchymal stem cells and thus promote bone regeneration. In this approach, mesenchymal stem cells are seeded onto the surface of a novel macroporous hydrogel and cultured for a period of 14 days. Results demonstrate a dramatic increase in bone proteins derived from stem cells cultured in the macroporous architecture. Unlike available methods, expression is largely influenced by architecture rather than substrate mechanical stiffness or extracellular matrix mediated adhesion.

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Additional Information

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LICENSE STATUS

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CATEGORIES

- Biomaterials
- Stem Cells

EXTERNAL RESOURCES

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