

Designing materials to direct stem-cell fate.

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Authors: Matthias P Lutolf, Penney M Gilbert, Helen M Blau

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Funding Grants: Regulation of Stem Cell Fate in Bioengineered Arrays of Hydrogel Microwells

Public Summary:

Scientific Abstract:

Proper tissue function and regeneration rely on robust spatial and temporal control of biophysical and biochemical microenvironmental cues through mechanisms that remain poorly understood. Biomaterials are rapidly being developed to display and deliver stem-cell-regulatory signals in a precise and near-physiological fashion, and serve as powerful artificial microenvironments in which to study and instruct stem-cell fate both in culture and in vivo. Further synergism of cell biological and biomaterials technologies promises to have a profound impact on stem-cell biology and provide insights that will advance stem-cell-based clinical approaches to tissue regeneration.

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