

Accepted Manuscript

Investigating the interplay between substrate stiffness and ligand chemistry in directing mesenchymal stem cell differentiation within 3D macro-porous substrates

Matthew G. Haugh, Ted J. Vaughan, Christopher M. Madl, Rosanne M. Raftery, Laoise M. McNamara, Fergal J. O'Brien, Sarah C. Heilshorn



PII: S0142-9612(18)30281-3

DOI: [10.1016/j.biomaterials.2018.04.026](https://doi.org/10.1016/j.biomaterials.2018.04.026)

Reference: JBMT 18612

To appear in: *Biomaterials*

Received Date: 2 February 2018

Revised Date: 28 March 2018

Accepted Date: 13 April 2018

Please cite this article as: Haugh MG, Vaughan TJ, Madl CM, Raftery RM, McNamara LM, O'Brien FJ, Heilshorn SC, Investigating the interplay between substrate stiffness and ligand chemistry in directing mesenchymal stem cell differentiation within 3D macro-porous substrates, *Biomaterials* (2018), doi: 10.1016/j.biomaterials.2018.04.026.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Investigating the interplay between substrate stiffness and ligand chemistry in directing mesenchymal stem cell differentiation within 3D macro-porous substrates

Matthew G. Haugh^{1,2}, Ted J. Vaughan³, Christopher M. Madl⁴, Rosanne M. Raftery^{2,5,6}, Laoise M. McNamara³, Fergal J. O'Brien^{2,5,6}, Sarah C. Heilshorn^{1}*

¹Department of Materials Science and Engineering, Stanford University, Stanford, CA, USA

²Tissue Engineering Research Group, Department of Anatomy, Royal College of Surgeons in Ireland, Dublin, Ireland

³Department of Biomedical Engineering, National University of Ireland, Galway, Ireland

⁴Department of Bioengineering, Stanford University, Stanford, CA, USA

⁵Trinity Centre for Bioengineering, Trinity College Dublin (TCD), Dublin, Ireland

⁶Advanced Materials and Bioengineering Research (AMBER) Centre, RCSI & TCD, Dublin, Ireland

*Prof. S. Heilshorn
476 Lomita Mall
McCullough Rm 246
Stanford, CA
94305, USA
heilshorn@stanford.edu
Fax: 650-498-5596

Keywords: Substrate Stiffness, Macro-Porosity, Differentiation, Mesenchymal Stem Cells, Mechanotransduction, Tissue Engineering, Cell-Matrix Interactions

Download English Version:

<https://daneshyari.com/en/article/6484489>

Download Persian Version:

<https://daneshyari.com/article/6484489>

[Daneshyari.com](https://daneshyari.com)