

Accepted Manuscript

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PII: S0141-8130(17)34385-4

DOI: <https://doi.org/10.1016/j.ijbiomac.2018.01.042>

Reference: BIOMAC 8874

To appear in:

Received date: 13 November 2017

Revised date: 8 December 2017

Accepted date: 8 January 2018

Please cite this article as: Naphtali A. O'Connor, Mihaela Jitianu, Greisly Nunez, Quentin Picard, Madeline Wong, David Akpatsu, Adam Negrin, Rajendra Gharbaran, Daniel Lugo, Sundus Shaker, Andrei Jitanu, Stephen Redenti, Dextran hydrogels by crosslinking with amino acid diamines and their viscoelastic properties. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Biomac(2017), <https://doi.org/10.1016/j.ijbiomac.2018.01.042>

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Dextran hydrogels by crosslinking with amino acid diamines and their viscoelastic properties

Naphtali A. O'Connor^{a,b,g*}, Mihaela Jitianu^c, Greisly Nunez^a, Quentin Picard^a, Madeline Wong^{a,d}, David Akpatsu^c, Adam Negrin^d, Rajendra Gharbaran^{d,e}, Daniel Lugo^a, Sundus Shaker^a, Andrei Jitanu^{a,b,g}, Stephen Redenti^{d,f,g}

^aDepartment of Chemistry, Lehman College of the City University of New York, Bronx, NY 10468.

^bPh.D. Program in Chemistry, The Graduate Center of the City University of New York, New York, NY 10016.

^cDepartment of Chemistry, William Paterson University, 300 Pompton Rd, Wayne, New Jersey 07470.

^dDepartment of Biology, Lehman College of the City University of New York, Bronx, NY 10468.

^eBiological Sciences Department, Bronx Community College of the City University of New York, Bronx, NY 10453.

^fPh.D. Program in Biology, The Graduate Center of the City University of New York, New York, NY 10016.

^gPh.D. Program in Biochemistry, The Graduate Center of the City University of New York, New York, NY 10016.

*Corresponding author. Tel: 718-960-8678; Email: naphtali.oconnor@lehman.cuny.edu

Abstract

Amine functionalized polysaccharide hydrogels such as those based on chitosan are widely examined as biomaterials. Here we set out to develop a facile procedure for developing such hydrogels by crosslinking dextran with amino acid diamines. The dextran-amino acid gels were formed by the addition of the amino acid diamines to a dextran and epichlorohydrin solution once it became homogeneous. This was demonstrated with three amino acid diamines, lysine, lysine methyl ester, and cystine dimethyl ester. Hydrogel networks with albumin entrapped were also demonstrated. These hydrogels were characterized by FTIR, SEM, rotational rheometry, swelling studies and cell biocompatibility analysis. These hydrogels

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