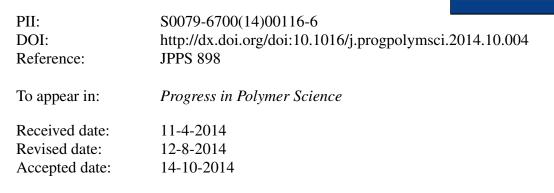
### Accepted Manuscript

Title: Polymers for cell/tissue anti-adhesion

Author: Eugene Lih Se Heang Oh Yoon Ki Joung Jin Ho Lee Dong Keun Han



Please cite this article as: Lih E, Oh SH, Joung YK, Lee JH, Han DK, Polymers for cell/tissue anti-adhesion, *Progress in Polymer Science* (2014), http://dx.doi.org/10.1016/j.progpolymsci.2014.10.004

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.

## ACCEPTED MANUSCRIPT

#### **Polymers for cell/tissue anti-adhesion**

Eugene Lih<sup>a,1</sup>, Se Heang Oh<sup>b,1</sup>, Yoon Ki Joung<sup>a,c</sup>, Jin Ho Lee<sup>d,\*</sup>, Dong Keun Han<sup>a,c\*</sup>

<sup>a</sup>Center for Biomaterials, Korea Institute of Science and Technology,
Hwarangno 14-gil 5, Seongbuk-gu, Seoul 136-791, Republic of Korea
<sup>b</sup>Department of Nanobiomedical Science, Dankook University,
119 Dandae Ro, Dongnam Gu, Cheonan 330-714, Republic of Korea
<sup>c</sup>Department of Biomedical Engineering, Korea University of Science and Technology,
Daejeon 305-350, Republic of Korea
<sup>d</sup>Department of Advanced Materials, Hannam University,
1646 Yuseong Daero, Yuseong Gu, Daejeon 305-811, Republic of Korea

#### ABSTRACT

The appropriate anti-adhesive effect of polymers on cells or tissues in the body is one of the essential requirements of maintaining health and protecting the body from trauma and foreign bodies. Regulating the anti-adhesive properties of biomedical polymers against cells has been considered a pivotal parameter in developing polymeric biomaterials for biomedical applications such as artificial blood vessels and cell encapsulation. Meanwhile, tissue adhesion barriers that can physically isolate wounds and thus effectively prevent the formation of tissue adhesion have been a hot topic in both research and industrial fields. This review describes the comprehensive knowledge and recent research efforts on polymers for anti-adhesion to both cells and tissues. The basic concepts and mechanisms for the design and performance of anti-adhesive polymers are introduced in terms of both cell and tissue. Polymer-based approaches for anti-adhesion to cells or tissues are then extensively discussed. *Keywords:* Biomaterials, Cell anti-adhesion, Bioinert surface, Tissue anti-adhesion, Tissue adhesion barrier

<sup>\*</sup>Corresponding authors :

D.K.H. e-mail:dkh@kist.re.kr; Tel:+82-2-958-5282; Fax:+82-2-958-5308 J.HL. e-mail:jhlee@hnu.kr; Tel: +82-42-629-8859; Fax: +82-42-629-8854

Download English Version:

# https://daneshyari.com/en/article/5208057

Download Persian Version:

https://daneshyari.com/article/5208057

Daneshyari.com