

## CORRECTION



# Correction to: Alginate-based hydrogels as drug delivery vehicles in cancer treatment and their applications in wound dressing and 3D bioprinting



Farhad Abasalizadeh<sup>1</sup>, Sevil Vaghefi Moghaddam<sup>2</sup>, Effat Alizadeh<sup>3</sup>, Elahe Akbari<sup>4</sup>, Elmira Kashani<sup>5</sup>, Seyyed Mohammad Bagher Fazljou<sup>1</sup>, Mohammadali Torbati<sup>6\*</sup> and Abolfazl Akbarzadeh<sup>7,8\*</sup>

### Correction to: Journal of Biological Engineering (2020) 14:8 https://doi.org/10.1186/s13036-020-0227-7

Following the publication of this article [1] the authors informed us of the following errors:

- 1. Figure 18 should be removed, since this is the same as Fig. 16.
- 2. Figure 17 legend should be replaced by Fig. 18 legend to read:

Fig. 17 Patient-Specific Platelet-Rich Plasma (PRP) bioink using 3D bioprinting of alginate scaffold a Schematic of PRP extraction and its incorporation with alginate to form patient-specific bioink b Schematic of proposed bioprinting process c PRP incorporated alginate scaffold containing fluorescence particles. d Images of different PRP-alginate constructs. In the production of these constructs 0.04% (w/v) CaCl2, 50 U ml – 1 PRP, and 1% (w/v) alginate was used. e, f The fabricated constructs could easily be removed from the substrate without losing their integrity. g Metabolic activity of mesenchymal stem cells (MSCs) treated with alginate and alginate/PRP over 5 days without any growth factor. h Metabolic

The original article can be found online at https://doi.org/10.1186/s13036-020-0227-7.

\* Correspondence: torbatim@tbzmed.ac.ir; dr.akbarzadeh2010@gmail.com <sup>6</sup>Department of Food Science and Technology, Faculty of Nutrition, Tabriz University of Medical Sciences, Tabriz, Iran

<sup>7</sup>Tuberculosis and Lung Disease Research Center of Tabriz, Tabriz University of Medical Sciences, Tabriz 22 5154853431, Iran activity of human umbilical vein endothelial cells (HUVECs) treated with alginate and alginate/PRP over 3 days without any growth factor. (\*P < 0.05; \*\*P < 0.01, \*\*\*P < 0.001) [129]. Faramarzi, N., et al., Patient-Specific Bioinks for 3D Bioprinting of Tissue Engineering Scaffolds. Advanced healthcare materials, 2018. 7(11), Copyright (2020)

It is also clarified here that Figs. 9, 10, 11, 12, 13 and 15 were reproduced with permission from the copyright holders.

#### Author details

<sup>1</sup>Department of Traditional Medicine, Faculty of Traditional Medicine, Tabriz University of Medical Sciences, Tabriz, Iran. <sup>2</sup>Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran. <sup>3</sup>Department of Medical Biotechnology, Faculty of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran. <sup>4</sup>Higher Education Institute of Rab-Rashid, Tabriz, Iran. <sup>5</sup>Department of Medical Nanotechnology, Faculty of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran. <sup>6</sup>Department of Food Science and Technology, Faculty of Nutrition, Tabriz University of Medical Sciences, Tabriz, Iran. <sup>7</sup>Tuberculosis and Lung Disease Research Center of Tabriz, Tabriz University of Medical Sciences, Tabriz 22 5154853431, Iran. <sup>8</sup>Universal Scientific Education and Research Network (USERN), Tabriz, Iran.

#### Published online: 12 June 2020

#### Reference

 Abasalizadeh, et al. Alginate-based hydrogels as drug delivery vehicles in cancer treatment and their applications in wound dressing and 3D bioprinting. J Biol Eng. 2020;14:8 https://doi.org/10.1186/s13036-020-0227-7.

© The Author(s). 2020 **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/. The Creative Commons Public Domain Dedication waiver (http://creativecommons.org/publicdomain/zero/1.0/) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

(2020) 14:17

Full list of author information is available at the end of the article