

Accepted Manuscript

Biodegradable hypocrellin derivative nanovesicle as a near-infrared light-driven theranostic for dually photoactive cancer imaging and therapy

Xiuli Zheng, Jiechao Ge, Jiasheng Wu, Weimin Liu, Liang Guo, Qingyan Jia, Ying Ding, Hongyan Zhang, Pengfei Wang



PII: S0142-9612(18)30658-6

DOI: [10.1016/j.biomaterials.2018.09.021](https://doi.org/10.1016/j.biomaterials.2018.09.021)

Reference: JBMT 18892

To appear in: *Biomaterials*

Received Date: 22 June 2018

Revised Date: 3 September 2018

Accepted Date: 13 September 2018

Please cite this article as: Zheng X, Ge J, Wu J, Liu W, Guo L, Jia Q, Ding Y, Zhang H, Wang P, Biodegradable hypocrellin derivative nanovesicle as a near-infrared light-driven theranostic for dually photoactive cancer imaging and therapy, *Biomaterials* (2018), doi: <https://doi.org/10.1016/j.biomaterials.2018.09.021>.

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.

Biodegradable hypocrellin derivative nanovesicle as a near-infrared light-driven theranostic for dually photoactive cancer imaging and therapy

Xiuli Zheng,^{†,§} Jiechao Ge,^{*,†,§} Jiasheng Wu,[†] Weimin Liu,^{†,§} Liang Guo,^{†,§} Qingyan Jia,^{†,§} Ying Ding,^{†,§} Hongyan Zhang,[†] Pengfei Wang^{*,†,§}

[†]Key Laboratory of Photochemical Conversion and Optoelectronic Materials and CityU-CAS Joint Laboratory of Functional Materials and Devices, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, 100190, People's Republic of China

[§]School of future technology, University of Chinese Academy of Sciences, Beijing, 100049, China

*Corresponding authors: wangpf@mail.ipc.ac.cn jchge2010@mail.ipc.ac.cn

Abstract

Photoactive agents based on natural products have attracted substantial attention in clinical applications because of their distinct biological activity, molecular structure multiformity, and low biotoxicity. Herein, we initially modify hypocrellin B (HB) with 1,2-diamino-2-methyl propane to form near-infrared (NIR) light (>700 nm)-responsive amino-substituted HB derivative (DPAHB). The DPAHB exhibit broad absorption (400–800 nm), NIR emission (maximum emission peak at 710 nm), and high singlet oxygen (¹O₂) quantum yield (~0.33) under NIR light (721 nm) irradiation. After self-assembly by using DPAHB with PEG-PLGA, the as-prepared nanovesicles (DPAHB NVs) retain efficient ¹O₂ generation, more interestingly, show high photothermal conversion efficiency (~0.24) under NIR light (721 nm) irradiation

Download English Version:

<https://daneshyari.com/en/article/10149919>

Download Persian Version:

<https://daneshyari.com/article/10149919>

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