Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B. This journal is © The Royal Society of Chemistry 2022

## **Supplementary Information**

Doxorubicin-encapsulated thermosensitive liposome-functionalized photothermal composite scaffolds for synergistic photothermal therapy and chemotherapy

Huajian Chen,<sup>ab</sup> Rui Sun,<sup>ab</sup> Jing Zheng,<sup>ab</sup> Naoki Kawazoe,<sup>a</sup> Yingnan Yang<sup>c</sup> and Guoping Chen\*<sup>ab</sup>

<sup>a.</sup> Research Center for Functional Materials, National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan. Email: Guoping.CHEN@nims.go.jp; Tel: 81-29-860-4496; Fax: 81-29-860-4673

<sup>b.</sup> Department of Materials Science and Engineering, Graduate School of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8577, Japan

<sup>c.</sup> Graduate School of Life and Environmental Science, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8572, Japan

\* Corresponding author: Prof. Guoping Chen, E-mail: Guoping.CHEN@nims.go.jp; Tel: 81-29-

860-4496, Fax: 81-29-860-4673



Fig. S1 <sup>1</sup>H-NMR spectra of gelatin and FA-gelatin dissolved in D<sub>2</sub>O.



Fig. S2 VIS-NIR spectrum of colloidal solution of AuNRs.



Fig. S3 Fluorescence spectra of free doxorubicin and the DPPC/Chol/DSPE-PEG-NH<sub>2</sub> and doxorubicin-encapsulated DPPC/Chol/DSPE-PEG-NH<sub>2</sub> liposomes.



Fig. S4 Live/dead staining of breast cancer cells cultured in the bottom wells of transwell plates covered by inserts containing the (a) Gel/PGA, (b) AuNR/Gel/PGA, (c) Doxlipo/Gel/PGA and (d) Dox-lipo/AuNR/Gel/PGA composite scaffolds after NIR laser irradiation. The culture time was 72 h. Scale bar: 200 μm.