pH-sensitive composite nanofiber of Poly(E-caprolactone) loaded with iron oxide nanoparticles/ammonium bicarbonate nanocarrier toward efficient doxorubicin release for postsurgical cancer treatment

Quang Nhat Quynh Vo^{1†}, Abdelrahman I. Rezk^{1,2,3†}, Sungkun Chun^{2,3*}, Chan Hee Park^{1,4*}, Cheol Sang Kim^{1,4*}

¹Department of Bionanotechnology and Bioconvergence Engineering, Graduate School, Jeonbuk National University, Jeonju 561–756, Republic of Korea,

²Department of Physiology, Jeonbuk National University Medical School, Jeonju-si 54907, Republic of Korea

³BK21FOUR 21st Century Medical Science Creative Human Resource Development Center, Republic of Korea

⁴Mechanical Design Engineering, Jeonbuk National University, Jeonju 561–756, Republic of Korea.

*Corresponding authors:

Tel: +82 63 270 4284, Fax: +82 63 270 2460

Cheol Sang Kim (<u>chskim@jbnu.ac.kr</u>), Chan Hee Park (<u>biochan@jbnu.ac.kr</u>), Sungkun Chun (sungkun.chun@jbnu.ac.kr)



Figure S1. FESEM images, the average diameter of different mats at different magnifications and the elemental content resuls from EDX analysis of PA 0.5 and PA 1.





Figure S2. Magnetization effect of PIA.



Figure S3. Thermographic images of (A) PIA mat at different sample weight; (B) stability test of PIA mat at 40 mg over 5 cycles of magnetic hyperthermia.



Figure S4. CO₂ production. (A) pH changes of immersed samples after specific time points, (B) digital images of PCL, PIA 0.5 and PIA 1 after immersion for 120 h, (C) SEM images of different mats after 120 h.