Supporting Information

Core/shell PEGS/HA Hybrid Nanoparticle via Micelle-coordinated Mineralization for Tumor-specific Therapy

Zihan Wu[a,b], Xiaoyu Ma[a], Yifan Ma[c], Zhaogang Yang[d], Yuan Yuan*[a,b] and Changsheng Liu*[a,b]

a. Key Laboratory for Ultrafine Materials of Ministry of Education, and School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, P. R. China

b. Engineering Research Center for Biomedical Materials of Ministry of Education, East China University of Science and Technology, Shanghai 200237, P. R. China

c. Department of Chemical and Biomolecular Engineering, The Ohio State University, Columbus, OH 43220, USA

d. Department of Radiation Oncology, The University of Texas Southwestern Medical Center, Dallas, TX 75390, USA

* Corresponding authors: yyuan@ecust.edu.cn (Yuan Yuan); liucs@ecust.edu.cn (Changsheng Liu);

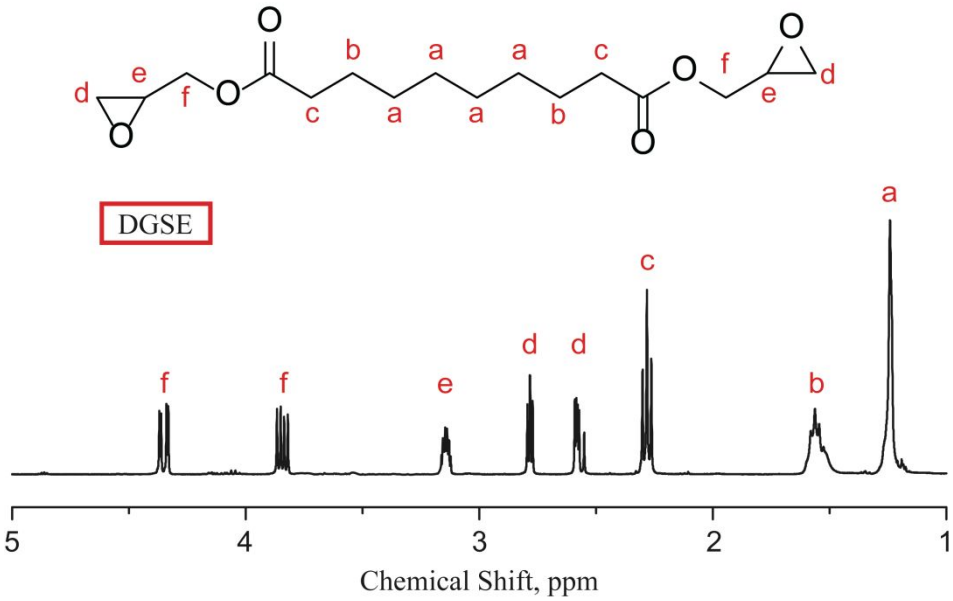

Figure S1. ^{1}H NMR spectra of DGSE.

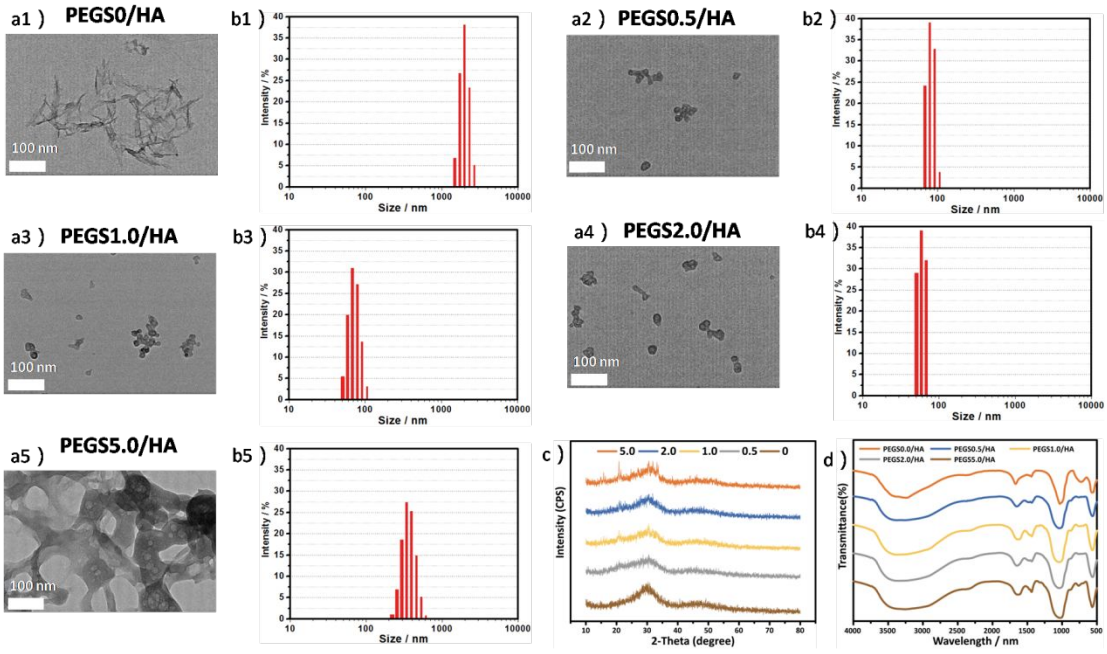

Figure S2. a1-a5) Morphological observation and b1-b5) DLS tests for PEGS/HA nanoparticles with various PEGS amounts. The DLS results were slightly larger those from TEM observations, because hydrogen bond from aqueous solution would promote the collision and increase hydrated ionic radius. c) XRD for PEGS/HA: the PEGS/HA was of low crystallinity, indicating the incorporation of PEGS would result in highly dissolvable calcium phosphate counterpart. d) FTIR spectrum of PEGS/HA: FTIR peaks around 3000-3500 cm^{-1} came from absorbed water.

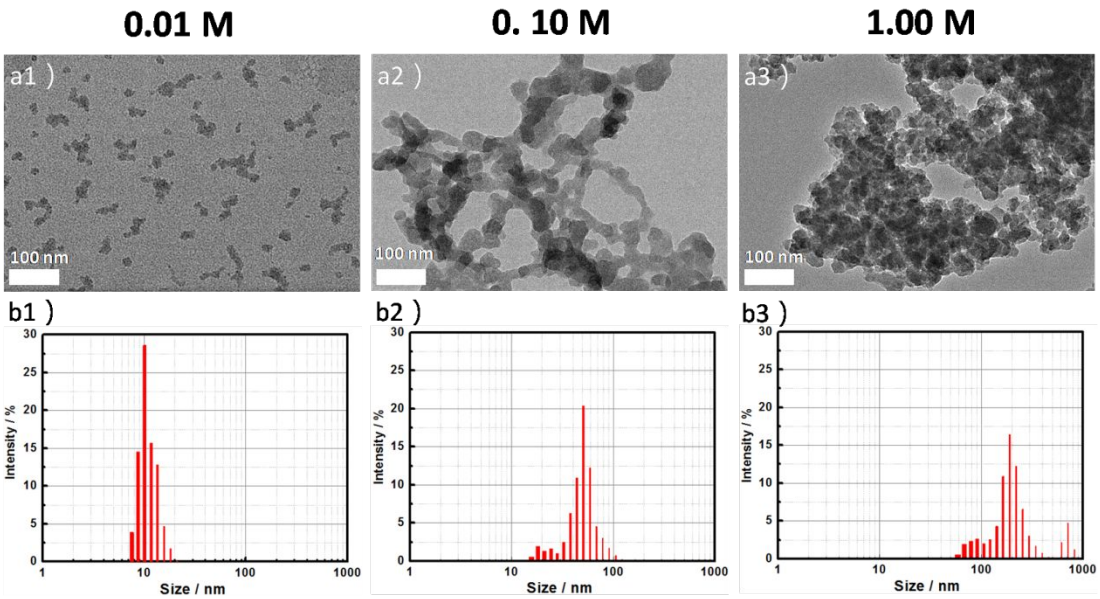

Figure S3. a1-a3): Morphological observations and b1-b3): DLS tests for PEGS2.0/HA with various reaction concentrations.

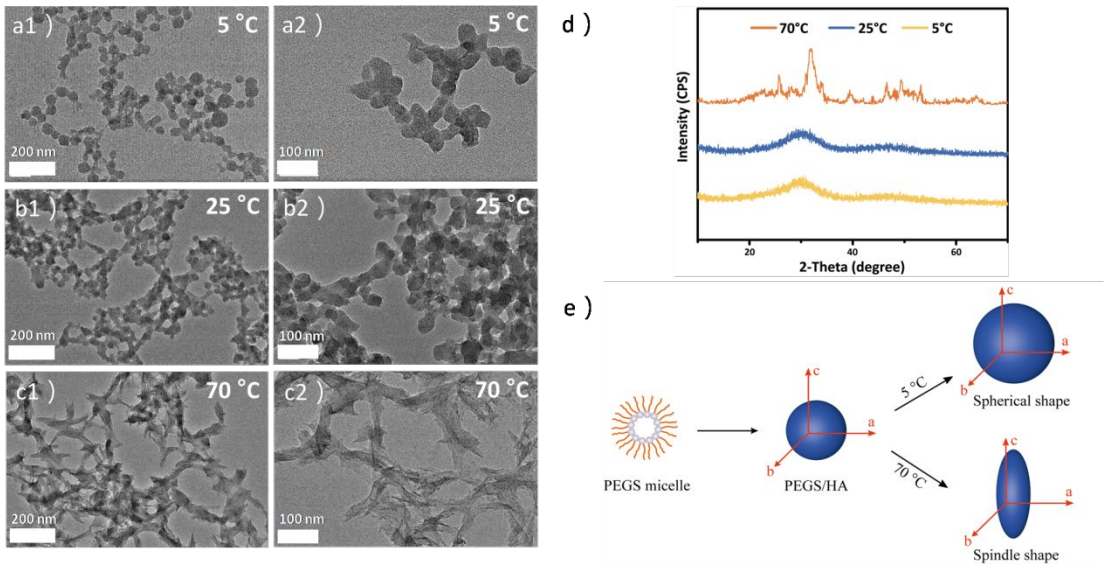

Figure S4. a-c) TEM observations for PEGS/HA and d) XRD tests for PEGS/HA under various temperatures: 5 °C, 25 °C, 70 °C (PEGS2.0/HA, 0.01 M). e) Scheme of different morphology PEGS/HA nanoparticles generated under various temperatures: when the reaction temperature increased to 70 °C, the high energy input could promote calcium phosphate crystaling along c-axis.