

# In Vitro Antibacterial and Anti-Inflammatory Properties of Imidazolium Poly(Ionic Liquids) Microspheres Loaded in GelMA-PEG Hydrogels

Chao Zhou <sup>1,†</sup>, Mengdi Sun <sup>1,†</sup>, Danni Wang <sup>1</sup>, Mingmei Yang <sup>2,4</sup>, Jia Ling Celestine Loh <sup>3</sup>, Yawen Xu <sup>2,\*</sup> and Ruzhi Zhang <sup>2,\*</sup>

<sup>1</sup> School of Medical and Health Engineering, Changzhou University, Changzhou 213164, China; zhouchao@cczu.edu.cn (C.Z.); 2041101204@smail.cczu.edu.cn (M.S.); s22090860022@smail.cczu.edu.cn (D.W.)

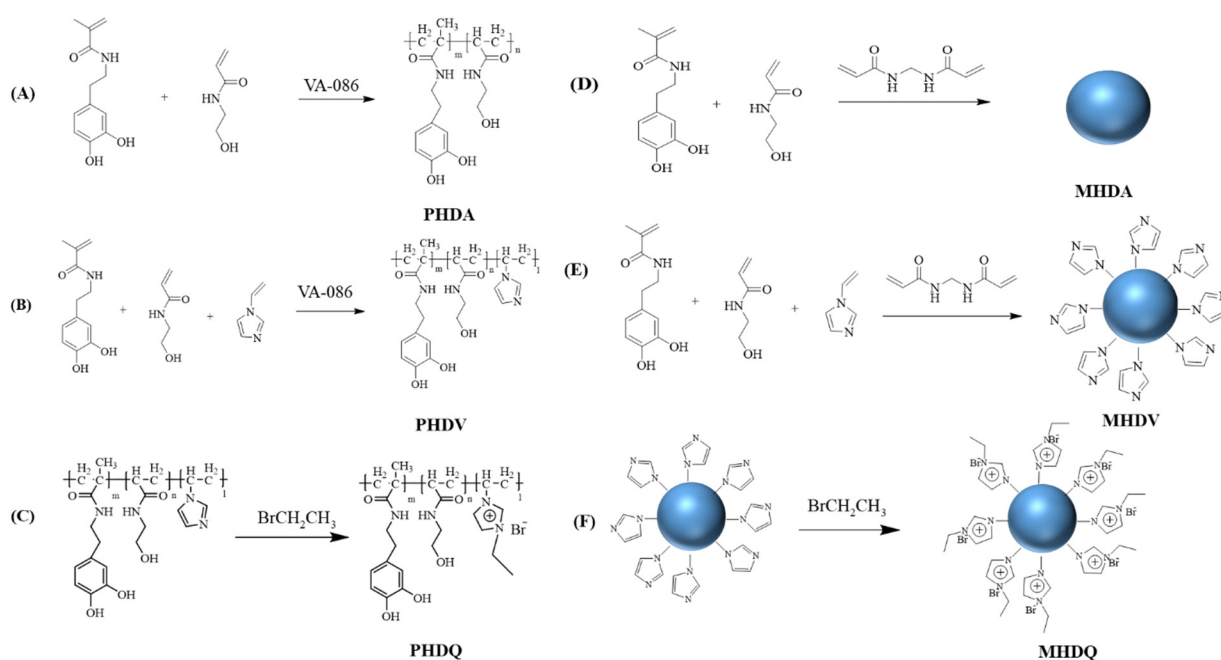
<sup>2</sup> Department of Dermatology, The Third Affiliated Hospital of Soochow University, Changzhou 213000, China; 20214135026@stu.suda.edu.cn

<sup>3</sup> DUKE-NUS Medical School, National University of Singapore, Singapore 169857, Singapore; e0368666@u.duke.nus.edu

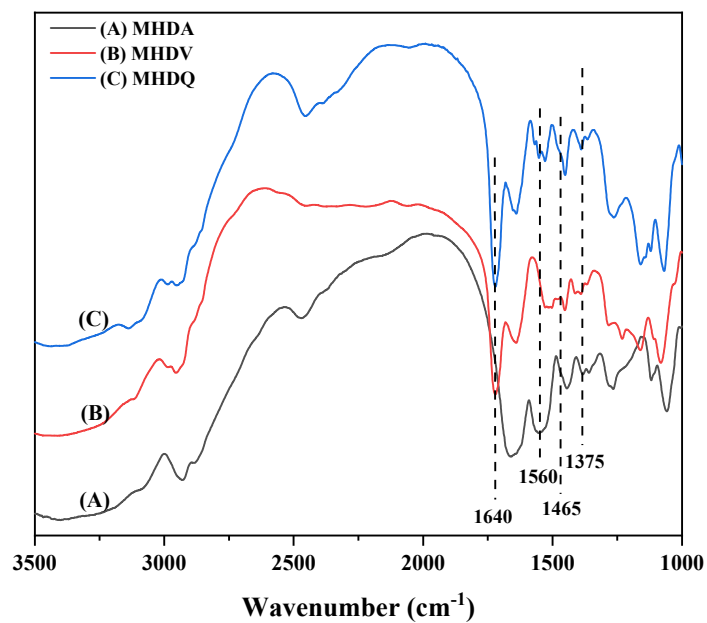
<sup>4</sup> Department of Dermatology, Affiliated Changzhou Children's Hospital of Nantong University, Changzhou 213000, China

\* Correspondence: xyw4937@suda.edu.cn (Y.X.); gy2016@suda.edu.cn (R.Z.)

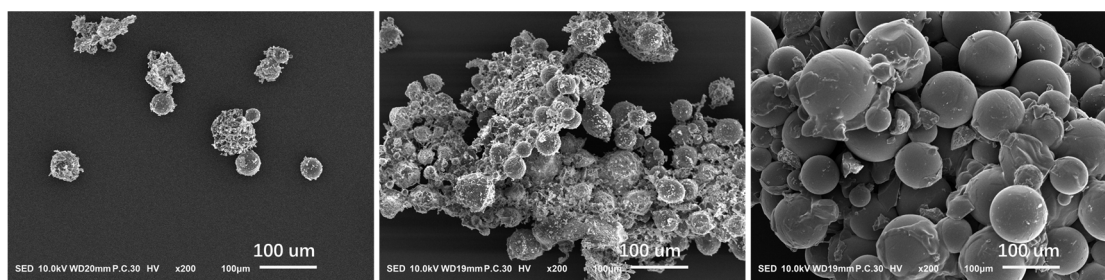
† These authors contributed equally to this work.



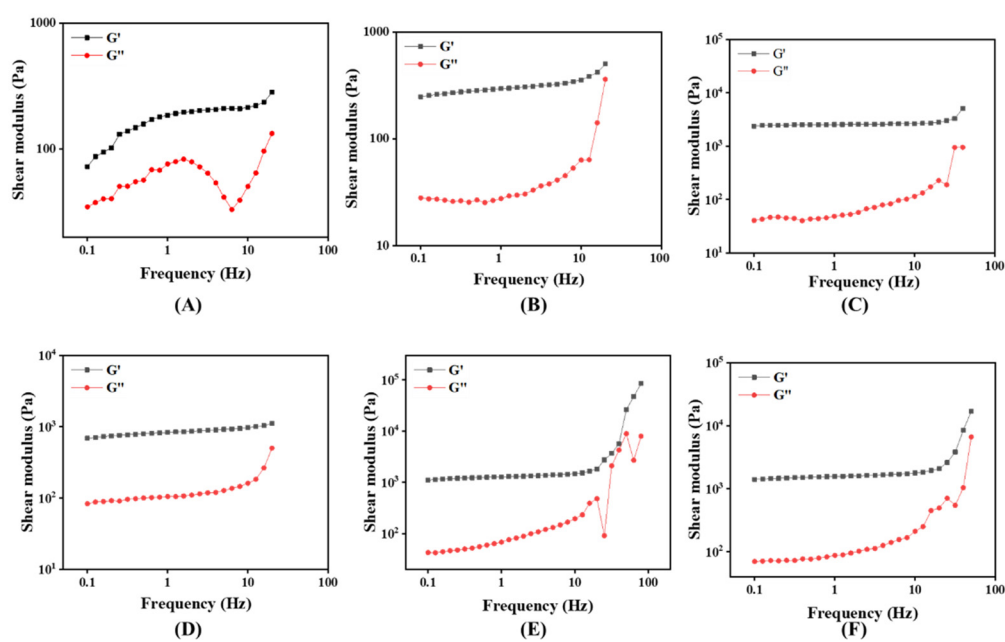
**Figure S1.** Procedure of synthesis of (A) PHDA, (B) PHDV, (C) PHDQ, (D)MHDA, (E) MHDV and (F) MHDQ.



**Figure S2.** FT-IR of (A) MHDA; (B) MHDV; (C) MHDQ.



**Figure S3.** Surface topography of microspheres: (A) MHDA, (B) MHDV and (C) MHDQ.



**Figure S4.** Frequency scanning of (A) PHDA-gel, (B) PHDV-gel, (C) PHDQ-gel, (D) MHDA-gel, (E) MHDV-gel (F) MHDQ-gel at constant strain  $\gamma = 0.5\%$ ,  $F = 0.1\text{--}20$  Hz.