Supplementary Information

Self-assembled and pH-responsive Polymeric Nanomicelles Impart Effective Delivery of Paclitaxel to Cancer Cells

Ashok Kumar Jangid^{1,†}, Deep Pooja^{2,†}, Poonam Jain¹, Nitin Gupta¹, Shwathy Ramesan³, Hitesh Kulhari^{1*}

¹School of Nano Sciences, Central University of Gujarat, Gandhinagar-382030, Gujarat, India.

²Centre for Advanced Materials and Industrial Chemistry, School of Science, RMIT

University, 124 La Trobe Street, 3000, Melbourne, Australia.

³School of Engineering, RMIT University, Melbourne, Victoria, 3001 Australia.

*Authors for Correspondence:

Dr. Shwathy Ramesan Email: <u>rameshshwathy@gmail.com</u> Phone: +61450097825

Dr. Hitesh Kulhari Email: <u>hitesh.kulhari@cug.ac.in</u> Phone: +91 9494751080

[†]Authors contributed equally.



Figure S1. Scheme represents the conjugation process of pluronic F68 and PTX conjugate *via* succinoyl group (F68-SA-PTX) and pluronic F68 and PTX conjugate *via* cis-aconitinoyl group (F68-CAA-PTX).



Figure S2. ¹H-NMR spectra of (A) pluronic F68 (F68), (B) succinoyl F68 (F68-SA), (C) cisaconitinoyl F68 (F68-CAA) and (D) pure paclitaxel (PTX).



Figure S3. FTIR spectra [a] pluronic F68 (F68), succinic anhydride (SA), succinoyl F68 (F68-SA), paclitaxel (PTX), and pluronic F68 and PTX conjugate *via* succinoyl group (F68-SA-PTX, [b] F68, pure cis aconitic anhydride (CAA), cis-aconitinoyl F68 (F68-CAA), PTX and pluronic F68 and PTX conjugate *via* cis-aconitinoyl group (F68-CAA-PTX).



Figure S4. Particle size distribution patterns of F68-SA-PTX conjugate nanomicelles (NM-1), and F68-CAA-PTX conjugate nanomicelles (NM-2).