# Electronic Supplementary Information (ESI)

## Temperature and Ultrasound Sensitive Gatekeepers for the Controlled Release of Chemotherapeutic Drugs from Mesoporous Silica Nanoparticles

T. S. Anirudhan*, Anoop S. Nair

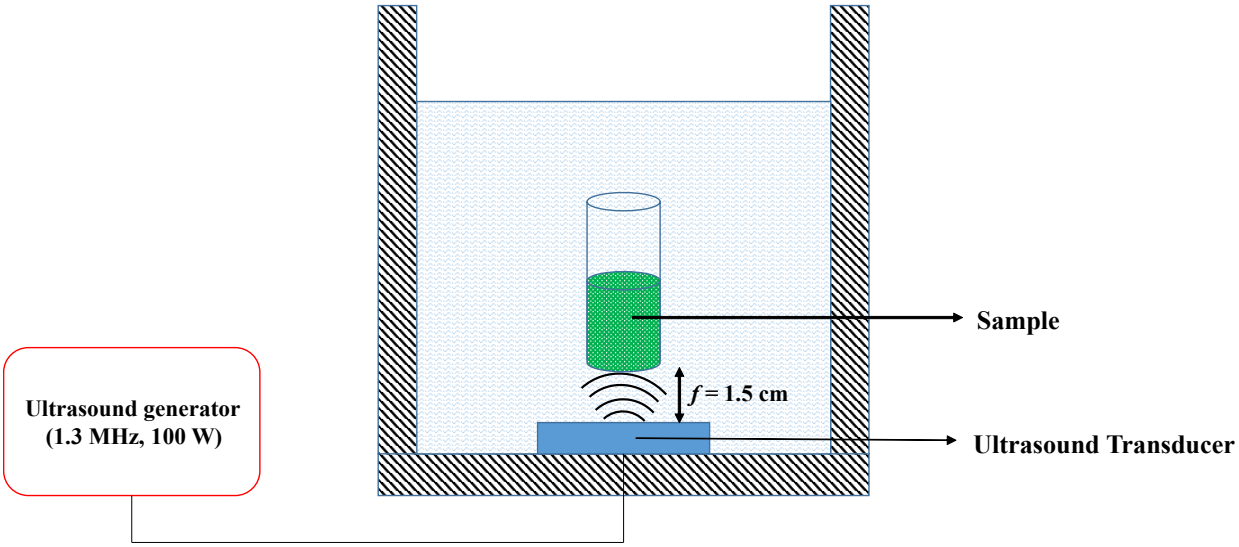
Department of Chemistry, School of Physical and Mathematical Sciences, University of Kerala, Kariavattom, Trivandrum-695581, Kerala

***Corresponding author**

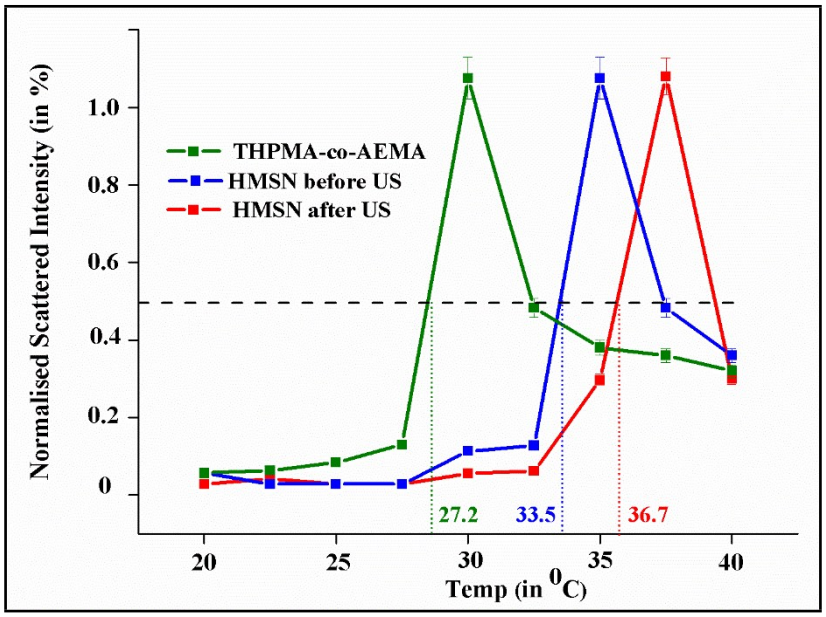
E-mail address: tsani@rediffmail.com

**Supporting Information, S1.** Composition optimization of THPMA and AEMA for the preparation of THPMA-co-AEMA copolymer

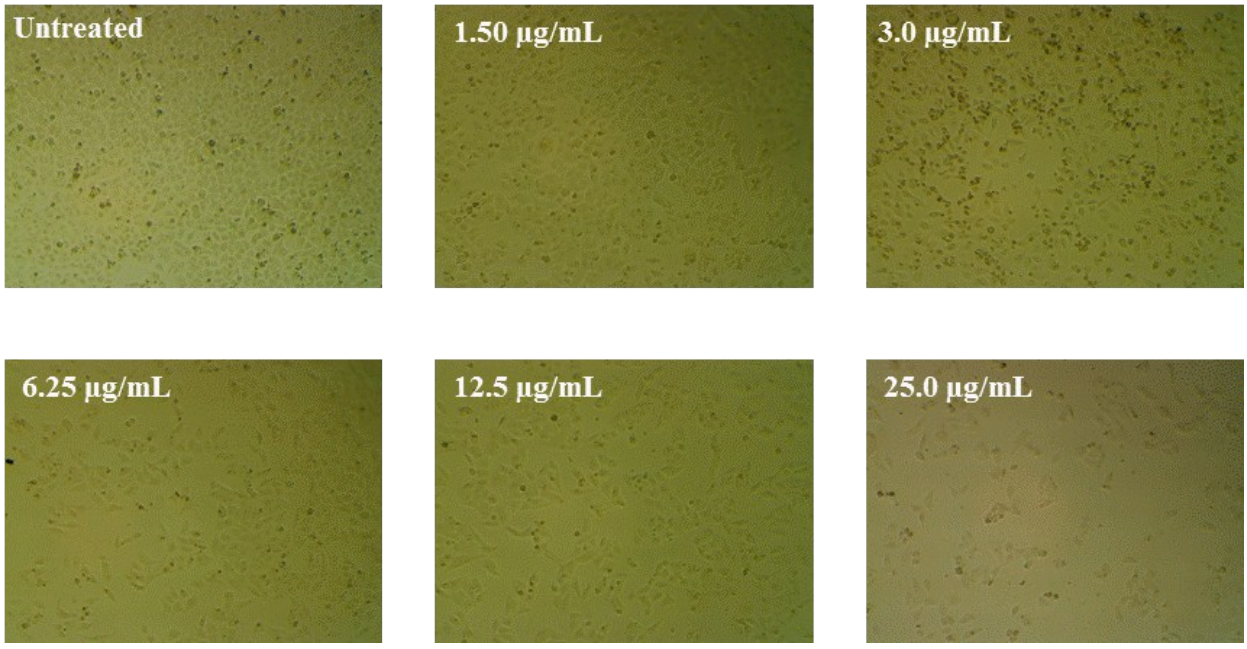
| THPMA | AEMA | Observation |
|---|---|---|
| 100 | 0 | Insoluble in aqueous medium |
| 50 | 50 | Insoluble in aqueous medium |
| 25 | 75 | Insoluble in aqueous medium |
| 12.5 | 87.5 | LCST after US lesser than physiological temperature |
| 10 | 90 | Both US and thermo responsive |
| 8 | 92 | Not US responsive |
| 0 | 100 | Not US responsive |



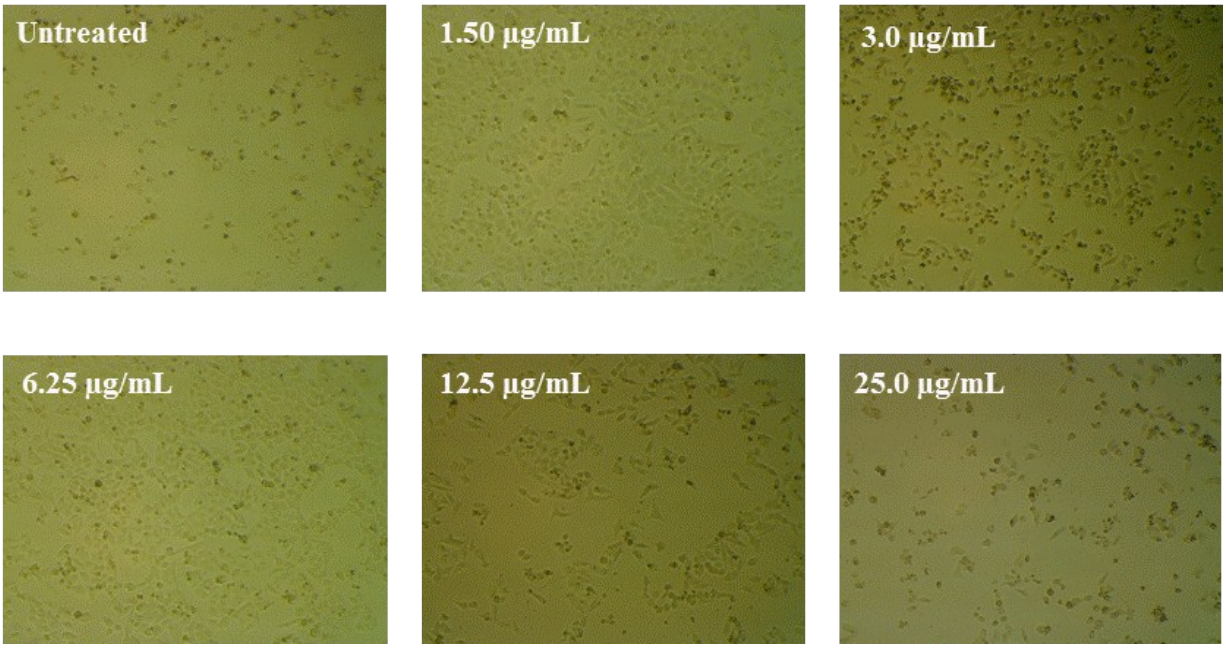

**Supporting Information, S2.** Schematic representation of the experimental setup adopted for US experiments




**Supporting Information, S3.** Determination of LCST of pTHPMA-co-pAEMA by scattered light intensity measurement (n =3 and data are presented as mean ±S.D)




**Supporting Information, S4.** Optical images of HeLa cells on incubation of HMSN at different concentrations before US




**Supporting Information, S5.** Optical images of HeLa cells on incubation of HMSN at different concentrations after US