

Understanding the effect of alkyl chains of gemini cations on the physicochemical and cellular properties of polyurethane micelles

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FTIR spectra

The FTIR spectra of polyurethanes were shown in Figure S1. The absorption bands around 3391 cm^{-1} arise from N–H vibration in urethane groups, while those at 2890 (CH_2) and 1110 (C–O–C) cm^{-1} are ascribed to mPEG. In the region of 1650~1750 cm^{-1} (carbonyl region), the peak at 1650 cm^{-1} is assigned to the hydrogen bonded carbonyl in urea groups derived from GQA. This peak was not found for G0mE1900 without GQA groups. The strong peaks around 1726 cm^{-1} assigned to urethane carbonyl $\nu(\text{C=O})$ which arising from the free carbonyl of ester groups in PCL and LDI, free carbonyl of urethane and hydrogen-bonded carbonyl in urethane. In addition, the N=C=O stretching vibration around 2200 cm^{-1} was not observed, certifying that LDI has been completely reacted.

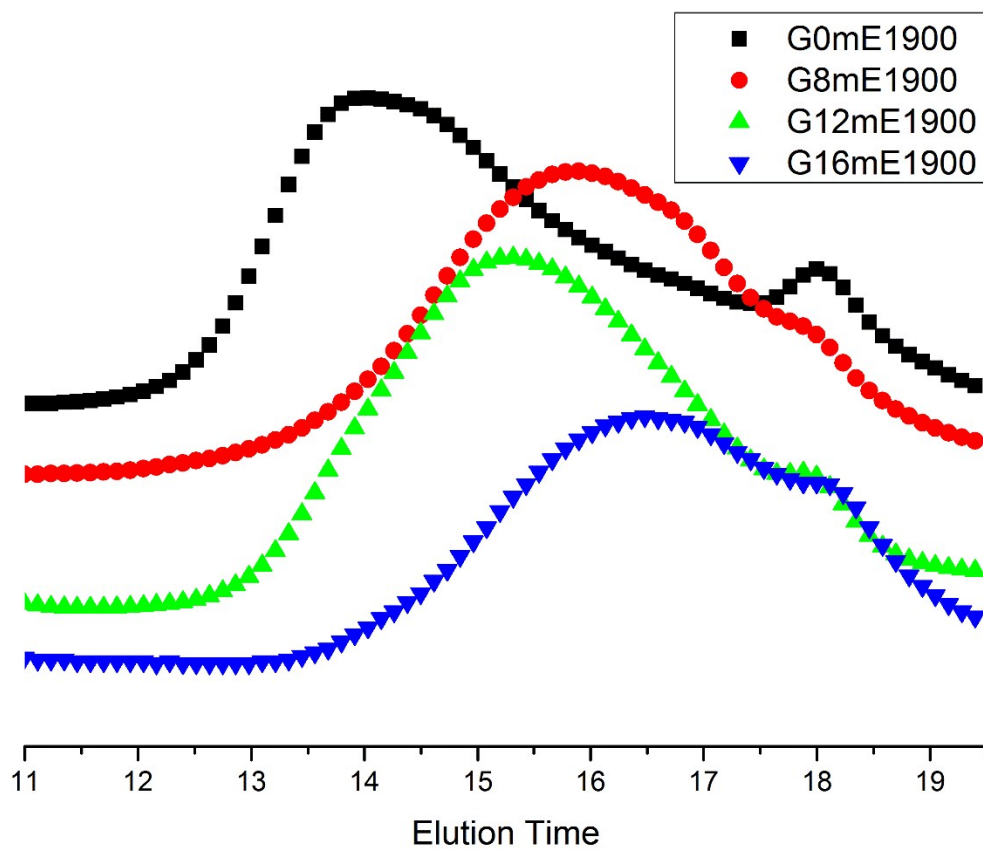


Figure S1. GPC curves of GQA-based polyurethane.

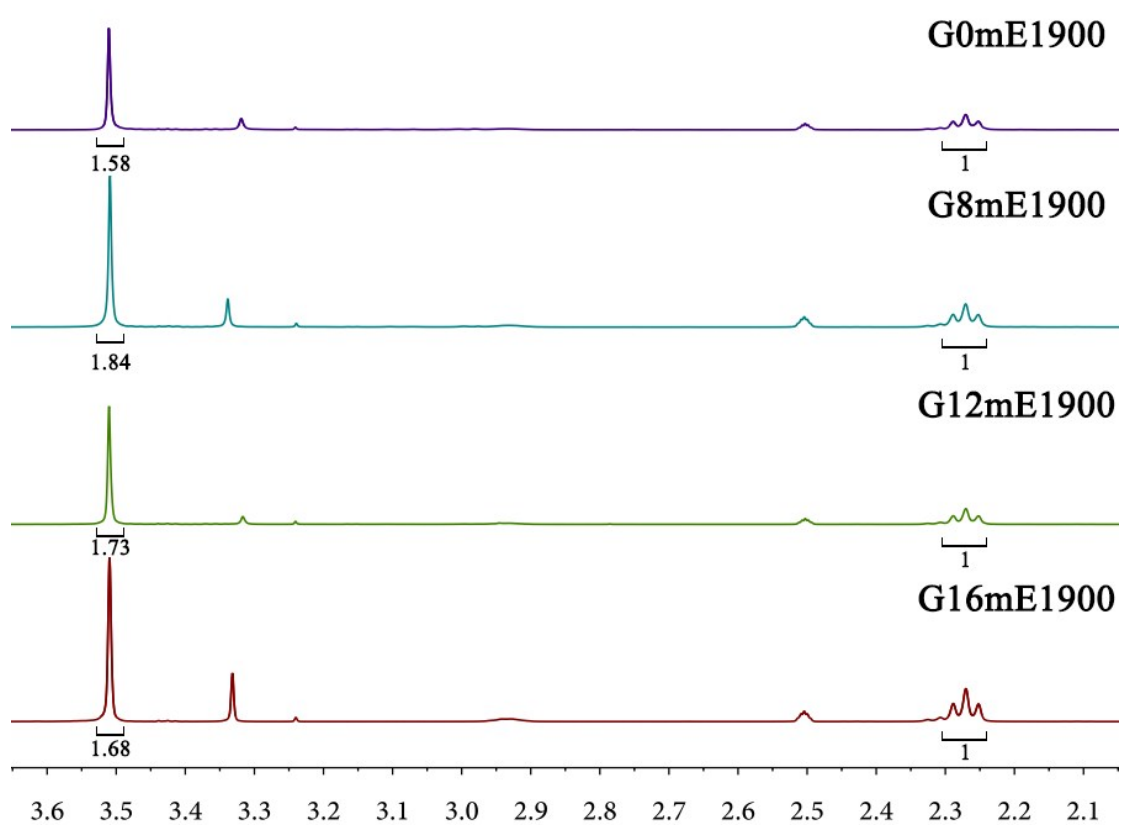


Figure S2. The peak area ratio of the PCL at 2.27 ppm ($-\text{CH}_2\text{COO}-$) and mPEG at 3.51 ppm.

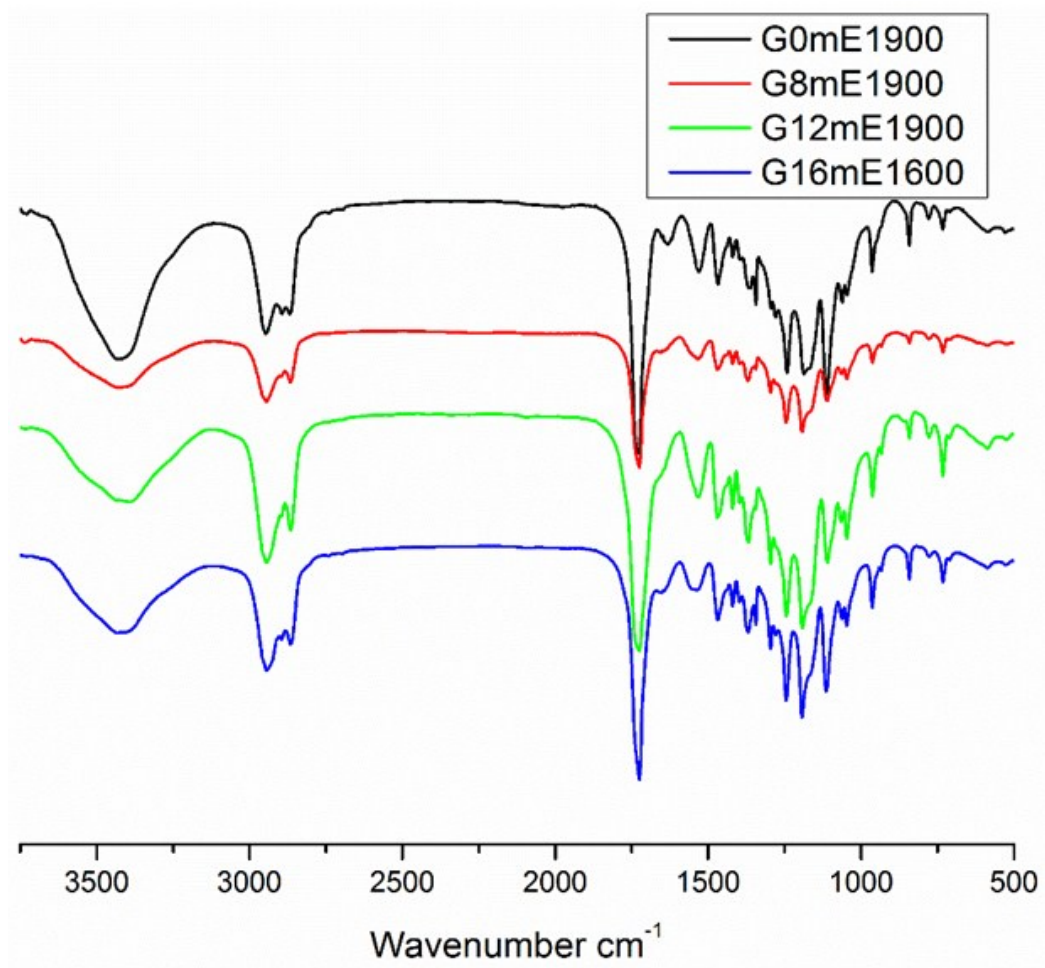


Figure S3. FTIR spectrum of G0mE1900, G8mE1900, G12mE1900 and G16mE1900 polyurethanes.

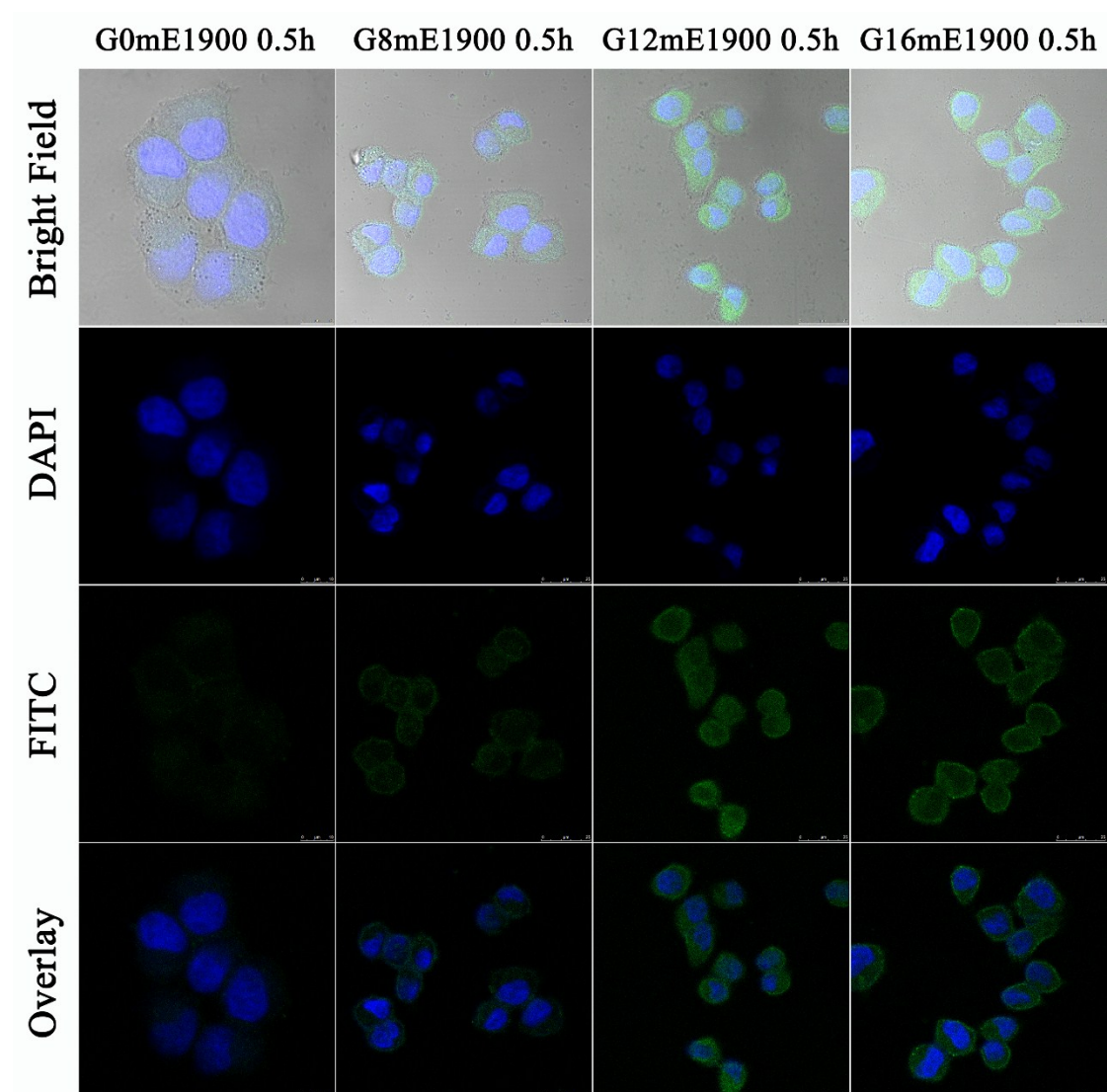


Figure S4. CLSM images of HeLa cells incubated with FITC-labeled polyurethane micelles with different GQA alkyl chain lengths for 0.5 h.

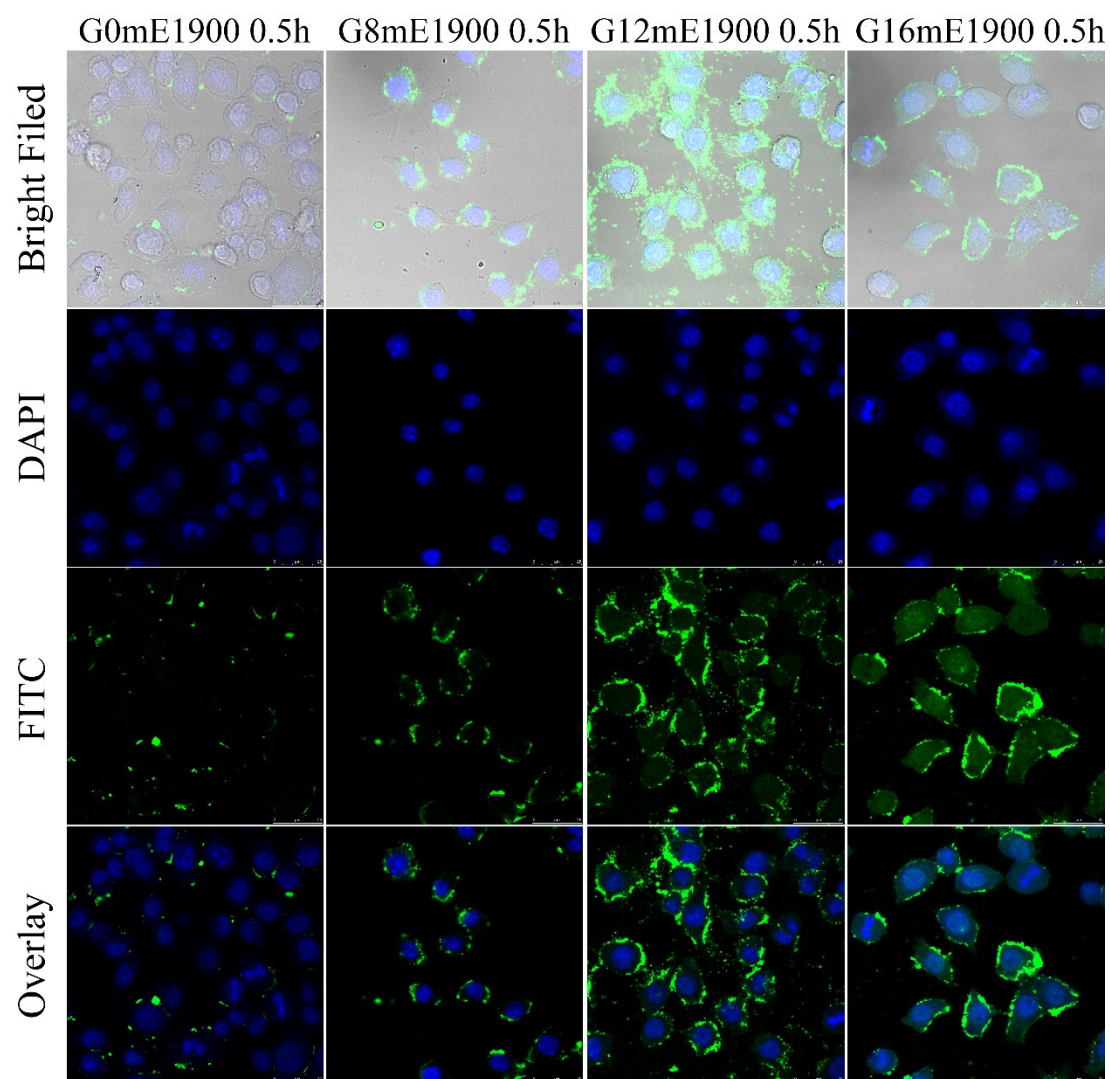


Figure S5. CLSM images of Raw264.7 cells incubated with FITC-labeled polyurethane micelles with different GQA alkyl chain lengths for 0.5 h.