

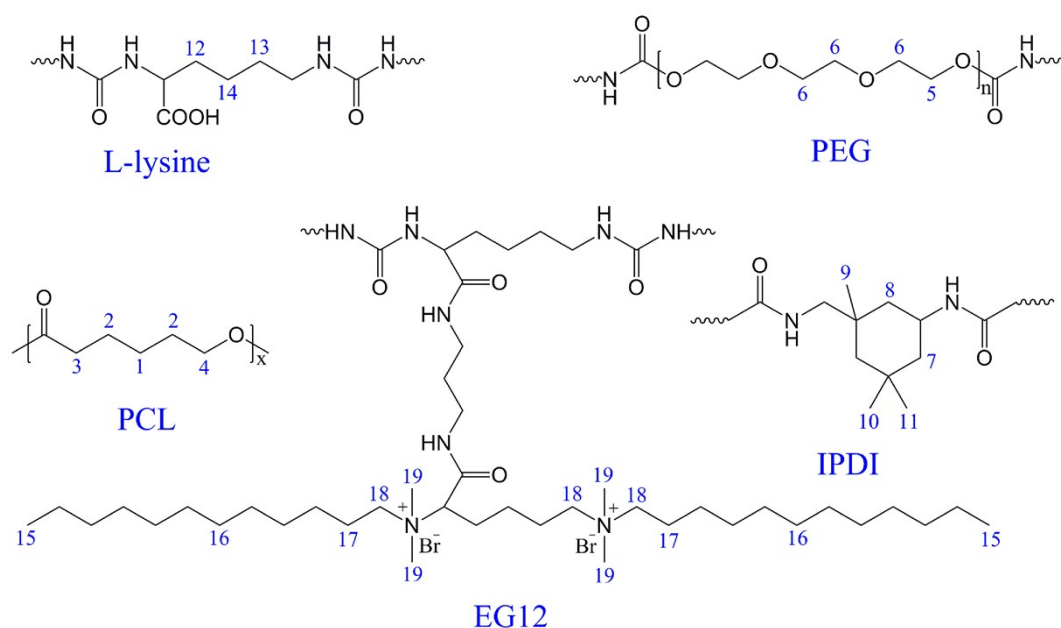
## Electronic supplementary information (ESI):

### Dual-functional anticoagulant and antibacterial blend coatings based on gemini quaternary ammonium salt waterborne polyurethane and heparin<sup>†</sup>

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**Fig. S1.** The structure components of GWPU and its characteristic protons in <sup>1</sup>H

NMR spectrum

The characteristic proton chemical shifts of PEG, PCL, IPDI, L-lysine and EG12 in GWPU recorded in DMSO are distinctly presented, as listed below in details (Fig S1).

Peaks for PEG: 3.51 ppm (6); 3.82 ppm (5);

Peaks for PCL: 1.29 ppm (1); 1.53 ppm (2); 2.27 ppm (3); 3.98 ppm (4);

Peaks for IPDI: 0.75-1.00 ppm (9, 10, 11); 1.53 ppm (7, 8);

Peaks for L-lysine: 1.53 ppm (13); 1.29 ppm (14); 1.77 ppm (12);

Peaks for EG12: 0.75-1.00 ppm (15); 1.29 ppm (16); 1.77 ppm (17); 3.00-3.10 ppm  
(18, 19).