Supplementary Information

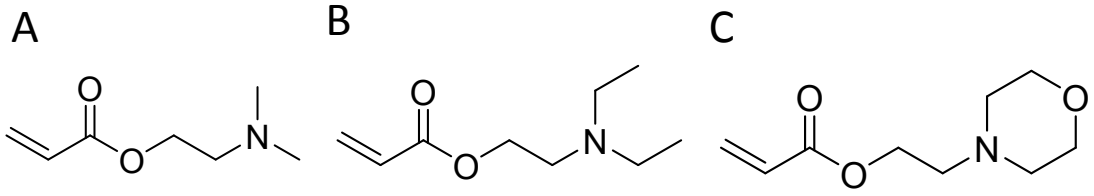


*Figure SI 1 Structures of the monomers used: A) Dimethylamino ethyl acrylate; B) Diethylamino ethyl acrylate; C) 2-N-Morpholinoethyl acrylate*

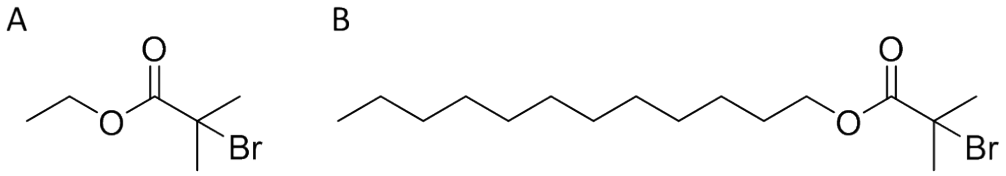


*Figure SI 2 Structures of the initiators used: A) EBiB; B) DBiB*

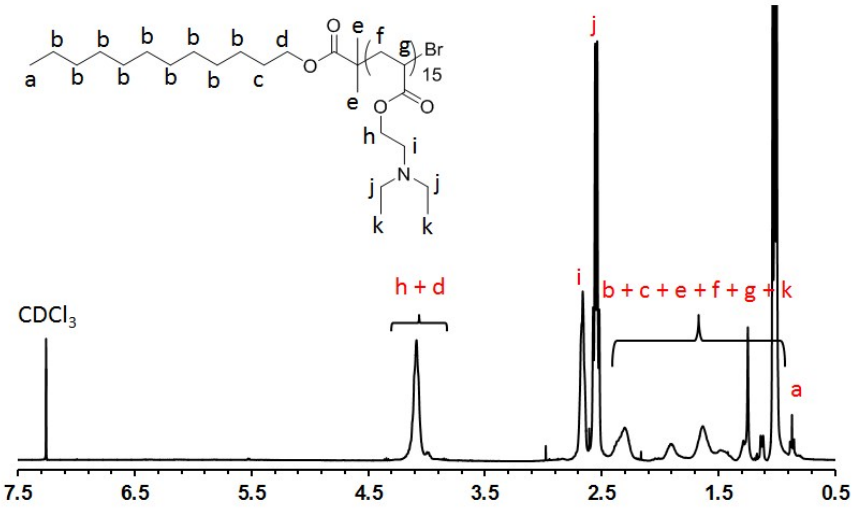


*Figure SI 3 $^{1}H$ NMR spectra of DEAEA polymer*

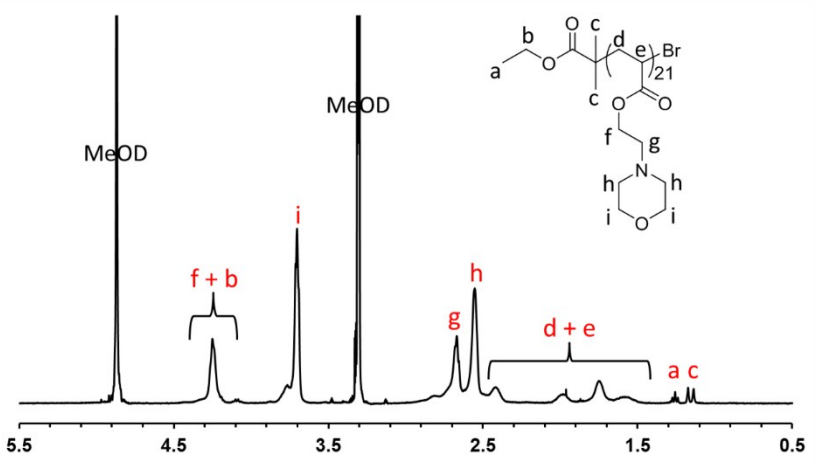


*Figure SI 4 $^{1}$H NMR spectra of MEA polymer*

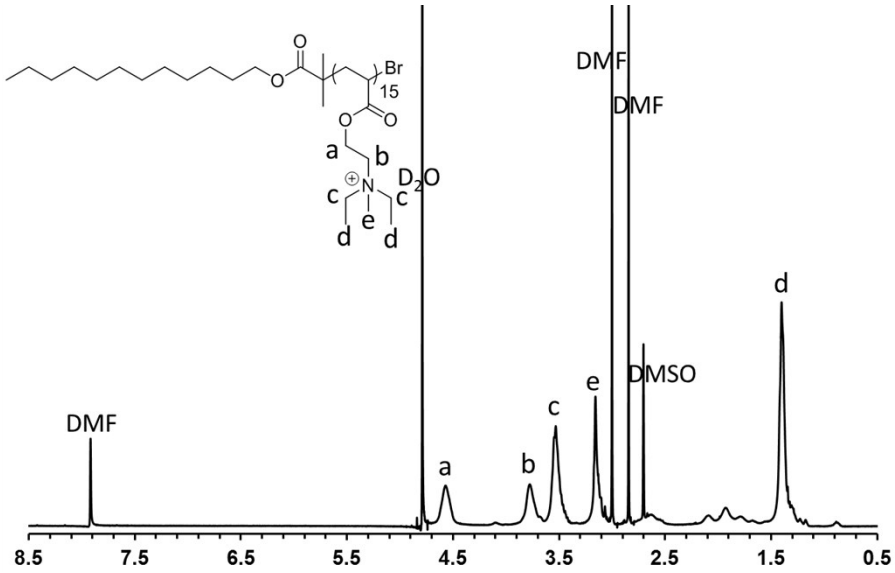


*Figure SI 5 $^{1}$H NMR of quaternized DEAEA polymer*

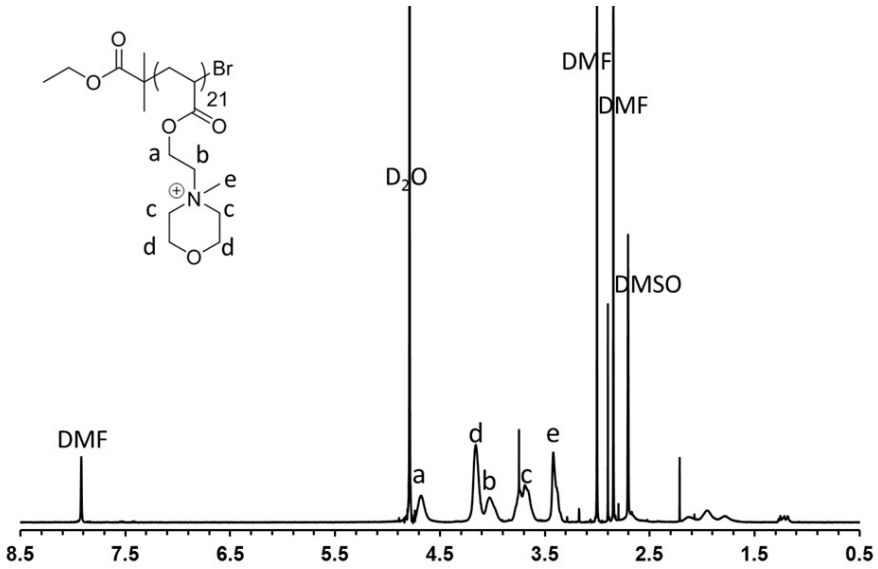


*Figure SI 7 [1]H NMR of quaternized MEA polymer*

*Table SI 1 Characterization of the polymers using 1H NMR and GPC*

| Entry N° | Monomer | Tail length | DP[a] | $M_n$[a] | $M_n$[b] | PDI[b] |
|---|---|---|---|---|---|---|
| 1 | DMAEA | Ethyl | 27 | 4100 | 2686 | 1.20 |
| 2 | DMAEA | Ethyl | 5 | 900 | 937 | 1.05 |
| 3 | DMAEA | Dodecyl | 26 | 4100 | 2700 | 1.32 |
| 4 | DMAEA | Dodecyl | 5 | 1100 | 900 | 1.05 |
| 5 | DEAEA | Ethyl | 16 | 2900 | 2600 | 1.33 |
| 6 | DEAEA | Ethyl | 5 | 1100 | 1100 | 1.05 |
| 7 | DEAEA | Dodecyl | 15 | 2900 | 2500 | 1.38 |
| 8 | DEAEA | Dodecyl | 5 | 1200 | 1300 | 1.14 |
| 9 | MEA | Ethyl | 21 | 4100 | 4500 | 1.18 |
| 10 | MEA | Ethyl | 4 | 900 | 1300 | 1.12 |
| 11 | MEA | Dodecyl | 27 | 5300 | 4900 | 1.14 |
| 12 | MEA | Dodecyl | 4 | 1100 | 1300 | 1.13 |

[a]DP(degree of polymerization) and $M_n$ values were determined by [1]H NMR peak integration analysis.
[b]Mn and PDI was determined by GPC analysis in DMAC against PSTY standards.

*Table SI 2 Table of the compounds that were tested for cell viability in Tables SI 3 and SI 4*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| A | Polymer 1 | Polymer 2 | Polymer 3 | Polymer 4 | Polymer 5 |
| B | Polymer 6 | Polymer 7 | Polymer 8 | Polymer 9 | Polymer 10 |
| C | Polymer 11 | Polymer 12 | Polymer 13 | Polymer 14 | Polymer 15 |
| D | Polymer 16 | Polymer 17 | Polymer 18 | Polymer 19 | Polymer 20 |
| E | Polymer 21 | Polymer 22 | Polymer 23 | Polymer 24 | |

*Table SI 3 Cell viability (% of cell survival) in 1% FBS (100 µg/mL of each polymer)*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| A | 96.5 | 97.4 | 105.9 | 4.0 | 82.8 |
| B | 95.4 | 23.8 | 85.5 | 82.7 | 34.1 |
| C | -0.9 | -0.1 | 88.9 | 91.4 | 44.9 |
| D | 26.3 | 87.2 | 105.1 | 111.6 | 4.7 |
| E | 104.9 | 97.0 | 101.3 | 29.6 | |

*Table SI 4 Cell viability (% of cell survival) in 10% FBS (100 µg/mL of each polymer)*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| A | 112.2 | 127.0 | 139.3 | 31.2 | 84.0 |
| B | 90.4 | 79.1 | 106.0 | 98.4 | 74.0 |
| C | 1.7 | -3.5 | 105.6 | 93.5 | 80.6 |
| D | 104.3 | 98.0 | 107.6 | 113.0 | 105.6 |
| E | 103.3 | 118.0 | 108.6 | 117.0 | |

*Table SI 5 Selectivity index values[a] for the lead compounds. MIC values are located in Table 1 and Table 2*

| Polymer N[o] | $HC_{50}$ (µg/mL)[b] | *P. aeruginosa* | *A. baumannii* | *K. pneumoniae* | *S. aureus* | *A. baumannii* R |
|---|---|---|---|---|---|---|
| 4 | 187 | 1 | 4 | 1 | 0 | 5 |
| 5 | >1500 | >3 | >3 | >3 | >30 | >4 |
| 7 | >1500 | >3 | >6 | >3 | >60 | >17 |
| 12 | 127 | 0 | 1 | 1 | 1 | 8 |
| 16 | 407 | 1 | 2 | 1 | 8 | 20 |

[a]The selectivity index is obtained by dividing the $HC_{50}$ by the MIC value for a given bacterium; and these values are shown in Table SI 5. The selectivity index is used routinely[1, 2] to describe the selectivity of the compound towards a particular bacterium. [b]$HC_{50}$ values were calculated by interpolation of results in Figure 4.

1. N. Ilic, M. Novkovic, F. Guida, D. Xhindoli, M. Benincasa, A. Tossi, et al., *Biochimica Et Biophysica Acta-Biomembranes,* 2013, **1828**, 1004-1012.

2. Y. M. Li, N. Bionda, A. Yongye, P. Geer, M. Stawikowski, P. Cudic, et al., *ChemMedChem*., 2013, **8**, 1865-1872.