ELECTRONYC SUPPLEMENTARY INFORMATION

1.1. ^{1}H-RMN characterization of different hydrophobic modified pBAEs.

C32 polymer

^{1}H-NMR(400MHz, DMSO-d_6, TMS) (ppm): δ =6,32 (d, C$\underline{H}_2$=CH-), 6,16 (d, CH$_2$=C$\underline{H}$-), 5,94 (d, C$\underline{H}_2$=CH-), 4.12 (br, C$\underline{H}_2$-O-C(=O)-CH=CH$_2$), 4.01 (t, -CH$_2$-C$\underline{H}_2$-O-), 3.35 (t, CH$_2$-C$\underline{H}_2$-OH), 2.65 (br, -CH$_2$-C$\underline{H}_2$-N-), 2.34 (br, -N-CH$_2$-C$\underline{H}_2$-C(=O)-O), 1.63 (br, -O-CH$_2$-C$\underline{H}_2$-C$\underline{H}_2$-CH$_2$-O), 1.35 (br, - C$\underline{H}_2$-CH2-C$\underline{H}_2$-CH$_2$-OH), 1.22 (br, N-(CH$_2$)$_2$-C$\underline{H}_2$-(CH$_2$)$_2$-OH).

Table S1. Molar ratio of hexylamine/5-amino-1-pentanol of different C6 polymerizations.

Polymer	Molar Ratio (Hexylamine/5-amino-1-pentanol)	Molar Ratio (Amine/Diacrylate)	1,4-butanediol diacrylate	5-amino-1-pentanol	Hexylamine
C6-100	1/0	1/1.1	9.1	-	8.3
C6-50	0.5/0.5	1/1.1	9.1	4.1	4.1
C6-25	0.25/0.75	1/1.1	9.1	6.2	2.1

C6-100 polymer

^{1}H-NMR(400MHz, Chloroform-*d,* TMS) (ppm): δ =6,45 (d, C$\underline{H}_2$=CH-), 6,18 (d, CH$_2$=C$\underline{H}$-), 5,88 (d, C$\underline{H}_2$=CH-), 4.15 - 4.05 (br, C$\underline{H}_2$-O-C(=O)-CH=CH$_2$), 3,99 (t, -CH$_2$-C$\underline{H}_2$-O-), 2.62 (br, -CH$_2$-C$\underline{H}_2$-N-), 2.32 (br, -N-CH$_2$-C$\underline{H}_2$-C(=O)-O), 1.71 - 1.53 (br, -O-CH$_2$-C$\underline{H}_2$-C$\underline{H}_2$-CH$_2$-O), 1.36 - 1.12 (br, - C$\underline{H}_2$-CH2-C$\underline{H}_2$-CH$_2$-OH, N-(CH$_2$)$_2$-C$\underline{H}_2$-(CH$_2$)$_2$-OH), 0.83 (t, CH$_2$-CH$_2$-C$\underline{H}_3$).

C6-50 polymer

^{1}H-NMR (400MHz, Chloroform-*d*, TMS) (ppm): δ =6,40 (d, C$\underline{H}_2$=CH-), 6,10 (d, CH$_2$=C$\underline{H}$-), 5,83 (d, C$\underline{H}_2$=CH-), 4.18 (br, C$\underline{H}_2$-O-C(=O)-CH=CH$_2$), 4,09 (t, -CH$_2$-C$\underline{H}_2$-O-), 3.62 (t, CH$_2$-C$\underline{H}_2$-OH), 2.78 (br, -CH$_2$-C$\underline{H}_2$-N-), 2.45 (br, -N-CH$_2$-C$\underline{H}_2$-C(=O)-O), 1.83 - 1.60 (br, -O-CH$_2$-C$\underline{H}_2$-C$\underline{H}_2$-CH$_2$-O), 1.40- 1.18 (br, - C$\underline{H}_2$-CH2-C$\underline{H}_2$-CH$_2$-OH, N-(CH$_2$)$_2$-C$\underline{H}_2$-(CH$_2$)$_2$-OH), 0.88 (t, CH$_2$-CH$_2$-C$\underline{H}_3$).

C6-25 polymer

^{1}H-NMR(400MHz, Chloroform-*d*, TMS) (ppm): δ =6,40 (d, C$\underline{H}_2$=CH-), 6,12 (d, CH$_2$=C$\underline{H}$-), 5,83 (d, C$\underline{H}_2$=CH-), 4.19 (br, C$\underline{H}_2$-O-C(=O)-CH=CH$_2$), 4,09 (t, -CH$_2$-C$\underline{H}_2$-O-), 3.61 (t, CH$_2$-C$\underline{H}_2$-OH), 2.78 (br, -CH$_2$-C$\underline{H}_2$-N-), 2.45 (br, -N-CH$_2$-C$\underline{H}_2$-C(=O)-

O), 1.80 – 1.57 (br, -O-CH_2-CH_2-CH_2-CH_2-O), 1.40- 1.18 (br, - CH_2-CH2-CH_2-CH_2-OH, N-$(CH_2)_2$-CH_2-$(CH_2)_2$-OH), 0.88 (t, CH_2-CH_2-CH_3).

Table S2. Molar ratio of hexadecylamine/5-amino-1-pentanol of different C16 polymerizations.

Polymer	Molar Ratio (Hexylamine/5-amino-1-pentanol)	Molar Ratio (Amine/Diacrylate)	1,4-butanediol diacrylate	5-amino-1-pentanol	Hexadecylamine
C16-50	0.5/0.5	1/1.1	9.1	4.1	4.1
C16-25	0.25/0.75	1/1.1	9.1	6.2	2.1

C16-50 polymer

^{1}H NMR (400 MHz, Chloroform-*d*, TMS) (ppm): δ =6,40 (d, CH_2=CH-), 6,12 (d, CH_2=CH-), 5,83 (d, CH_2=CH-), 4.18 (br, CH_2-O-C(=O)-CH=CH_2), 4,09 (t, -CH_2-CH_2-O-), 3.61 (t, CH_2-CH_2-OH), 2.74 (br, -CH_2-CH_2-N-), 2.41 (br, -N-CH_2-CH_2-C(=O)-O), 1.88- 1.15 (m, - CH_2-CH2-CH_2-CH_2-OH, N-$(CH_2)_2$-CH_2-$(CH_2)_2$-OH, -O-CH_2-CH_2-CH_2-CH_2-O, -CH_2-$(CH_2)_{14}$-CH_3), 0.85 (t, CH_2-CH_2-CH_3).

C16-25 polymer

^{1}H NMR (400 MHz, Chloroform-*d*, TMS) (ppm): δ =6,40 (d, CH_2=CH-), 6,12 (d, CH_2=CH-), 5,83 (d, CH_2=CH-), 4.18 (br, CH_2-O-C(=O)-CH=CH_2), 4,10 (t, -CH_2-CH_2-O-), 3.62 (t, CH_2-CH_2-OH), 2.76 (br, -CH_2-CH_2-N-), 2.41 (br, -N-CH_2-CH_2-C(=O)-O), 1.79- 1.18 (m, - CH_2-CH2-CH_2-CH_2-OH, N-$(CH_2)_2$-CH_2-$(CH_2)_2$-OH, -O-CH_2-CH_2-CH_2-CH_2-O, -CH_2-$(CH_2)_{14}$-CH_3), 0.83 (t, CH_2-CH_2-CH_3).

Table S3. Different percentage of C32 polymer esterification using Chlolesterol-COOH

Polymer	C32 (mmol)	Cholesterol-COOH (mmol)	C32 (g)	Cholesterol-COOH (g)
Cchol-50	0.14	0.49	0.3	0.242
Cchol-25	0.14	0.25	0.3	0.121
Cchol-12,5	0.14	0.12	0.3	0.061

Cchol-50 polymer

^{1}H-NMR (400MHz, Chloroform-*d*, TMS) (ppm): δ =6,40 (d, CH_2=CH-), 6,12 (d, CH_2=CH-), 5,83 (d, CH_2=CH-), 5.37(s, -C=CH-C-), 4.69 – 4.55 (m, -O-CH(-C-)$_2$) 4.19 (br, CH_2-O-C(=O)-CH=CH_2), 4,09 (t, -CH_2-CH_2-O-), 3.62 (t, CH_2-CH_2-OH),

2.76 (br, -CH_2-C<u>H_2</u>-N-), 2.60 (t, -O-C(=O)-C<u>H_2</u>-C<u>H_2</u>-C(=O)-O), 2.42 (br, -N-CH_2-C<u>H_2</u>-C(=O)-O), 2.36 – 2.24, (m, from cholesterol), 2.09- 0.94 (m, - C<u>H_2</u>-CH2-C<u>H_2</u>-CH_2-OH, -O-CH_2-C<u>H_2</u>-C<u>H_2</u>-CH_2-O, N-$(CH_2)_2$-C<u>H_2</u>-$(CH_2)_2$-OH, from cholesterol), 0.86 (dd, from cholesterol), 0.67 (s, -CH-(C<u>H_2</u>)$_2$.

<u>Cchol-25 polymer</u>

^{1}H NMR (400 MHz, Chloroform-d, TMS) (ppm): δ =6,40 (d, C<u>H_2</u>=CH-), 6,12 (d, CH_2=C<u>H</u>-), 5,83 (d, C<u>H_2</u>=CH-), 5.37(s, -C=C<u>H</u>-C-), 4.72 – 4.51 (m, -O-C<u>H</u>(-C-)$_2$) 4.19 (br, C<u>H_2</u>-O-C(=O)-CH=CH_2), 4,09 (t, -CH_2-C<u>H_2</u>-O-), 3.62 (t, CH_2-C<u>H_2</u>-OH), 2.76 (br, -CH_2-C<u>H_2</u>-N-), 2.60 (t, -O-C(=O)-C<u>H_2</u>-C<u>H_2</u>-C(=O)-O), 2.43 (br, -N-CH_2-C<u>H_2</u>-C(=O)-O), 2.35 – 2.22, (m, from cholesterol), 2.11- 0.89 (m, - C<u>H_2</u>-CH2-C<u>H_2</u>-CH_2-OH, -O-CH_2-C<u>H_2</u>-C<u>H_2</u>-CH_2-O, N-$(CH_2)_2$-C<u>H_2</u>-$(CH_2)_2$-OH, from cholesterol), 0.86 (dd, from cholesterol), 0.67 (s, -CH-(C<u>H_2</u>)$_2$.

<u>Cchol-12.5 polymer</u>

^{1}H NMR (400 MHz, Chloroform-d, TMS) (ppm): δ =6,41 (d, C<u>H_2</u>=CH-), 6,12 (d, CH_2=C<u>H</u>-), 5,83 (d, C<u>H_2</u>=CH-), 5.37(s, -C=C<u>H</u>-C-), 4.66 – 4.55 (m, -O-C<u>H</u>(-C-)$_2$) 4.18 (br, C<u>H_2</u>-O-C(=O)-CH=CH_2), 4,09 (t, -CH_2-C<u>H_2</u>-O-), 3.61 (t, CH_2-C<u>H_2</u>-OH), 2.76 (br, -CH_2-C<u>H_2</u>-N-), 2.60 (t, -O-C(=O)-C<u>H_2</u>-C<u>H_2</u>-C(=O)-O), 2.43 (br, -N-CH_2-C<u>H_2</u>-C(=O)-O), 2.31, (m, from cholesterol), 2.09- 0.89 (m, - C<u>H_2</u>-CH2-C<u>H_2</u>-CH_2-OH, -O-CH_2-C<u>H_2</u>-C<u>H_2</u>-CH_2-O, N-$(CH_2)_2$-C<u>H_2</u>-$(CH_2)_2$-OH, from cholesterol), 0.86 (dd, from cholesterol), 0.67 (s, -CH-(C<u>H_2</u>)$_2$.

1.2. ^{1}H-RMN characterization of oligopeptide-modified pBAE polymers

<u>CR3-C6-CR3</u>

^{1}H-NMR(400MHz, Methanol-*d_4*, TMS) (ppm): δ = 4.41-4.33 (br, NH_2-C(=O)-C<u>H</u>-NH-C(=O)-C<u>H</u>-NH-C(=O)-C<u>H</u>-NH-C(=O)-C<u>H</u>-CH_2-, 4.11 (t, CH_2-C<u>H_2</u>-O), 3.55 (t, CH_2-C<u>H_2</u>-OH), 3.22 (br, NH_2-C(=NH)-NH-C<u>H_2</u>-, OH-$(CH_2)_4$-C<u>H_2</u>-N-), 3.04 (t, CH_2-C<u>H_2</u>-N-), 2.82 (dd, -C<u>H_2</u>-S-C<u>H_2</u>), 2.48 (br, -N-CH_2-C<u>H_2</u>-C(=O)-O), 1.90 (m, NH_2-C(=NH)-NH-$(CH_2)_2$-C<u>H_2</u>-CH-), 1.73 (br, -O-CH_2-C<u>H_2</u>-C<u>H_2</u>-CH_2-O), 1.69 (m, NH_2-C(=NH)-NH-CH_2-C<u>H_2</u>-CH_2-), 1.56 (br, -C<u>H_2</u>-CH2-C<u>H_2</u>-CH_2-OH), 1.39 (br, -N-$(CH_2)_2$-C<u>H_2</u>-$(CH_2)_2$-OH), 0.88 (t, CH_2-CH_2-C<u>H_3</u>).

<u>CK3-C6-CK3</u>

^{1}H-NMR(400MHz, Methanol-*d_4*, TMS) (ppm): δ = 4.38-4.29 (br, NH_2-$(CH_2)_4$-C<u>H</u>-), 4.13 (t, CH_2-C<u>H_2</u>-O-), 3.73 (br, NH_2-C<u>H</u>-CH_2-S-), 3.55 (t, CH_2-C<u>H_2</u>-OH), 2.94 (br, CH_2-C<u>H_2</u>-N-, NH2-C<u>H_2</u>-$(CH_2)_3$-CH-), 2.81 (dd, -C<u>H_2</u>-S-C<u>H_2</u>), 2.57 (br, -N-CH_2-

$C\underline{H}_2$-C(=O)-O), 1.85 (m, NH_2-$(CH_2)_3$-$C\underline{H}_2$-CH-), 1.74 (br, -O-CH_2-$C\underline{H}_2$-$C\underline{H}_2$-CH_2-O), 1.68 (m, NH_2-CH_2-$C\underline{H}_2$-$(CH_2)_2$-CH-), 1.54 (br, - $C\underline{H}_2$-CH2-$C\underline{H}_2$-CH_2-OH), 1.37 (br, N-$(CH_2)_2$-$C\underline{H}_2$-$(CH_2)_2$-OH), 0.88 (t, CH_2-CH_2-$C\underline{H}_3$).

CH3-C6-CH3

^{1}H-NMR(400MHz, Methanol-d_4, TMS) (ppm): δ = 8.0-7.0 (br -N(=C$\underline{H}$)-NH-C(=C$\underline{H}$)-), 4.61-4.36 (br, -CH_2-C$\underline{H}$-), 4.16 (t, CH_2-$C\underline{H}_2$-O-), 3.55 (t, CH_2-$C\underline{H}_2$-OH), 3.18 (t, CH_2-$C\underline{H}_2$-N-), 3.06 (dd, -$C\underline{H}_2$-CH-), 2.88 (br, OH-$(CH_2)_4$-$C\underline{H}_2$-N-), 2.82 (dd, -$C\underline{H}_2$-S-$C\underline{H}_2$-), 2.72 (br, -N-CH_2-$C\underline{H}_2$-C(=O)-O), 1.75 (br, -O-CH_2-$C\underline{H}_2$-$C\underline{H}_2$-CH_2-O), 1.65 (m, NH_2-CH_2-$C\underline{H}_2$-$(CH_2)_2$-CH-), 1.58 (br, -$C\underline{H}_2$-CH2-$C\underline{H}_2$-CH_2-OH), 1.40 (br, N-$(CH_2)_2$-$C\underline{H}_2$-$(CH_2)_2$-OH), 0.88 (t, CH_2-CH_2-$C\underline{H}_3$).

CD3-C6-CD3

^{1}H-NMR(400MHz, DMSO-d_6, TMS) (ppm): δ = 4.56-4.44 (br, NH_2-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-CH_2-), 4.19 (br,NH_2-C$\underline{H}$-CH_2-S), 4.00 (t, CH_2-$C\underline{H}_2$-O), 3.34 (t, CH_2-$C\underline{H}_2$-OH), 2.98 (dd, -$C\underline{H}_2$-S-$C\underline{H}_2$), 2.57-2.48 (t, -CH-$C\underline{H}_2$-COO-), 2.40 (br, -N-CH_2-$C\underline{H}_2$-C(=O)-O), 1.60 (br, -O-CH_2-$C\underline{H}_2$-$C\underline{H}_2$-CH_2-O), 1.38 (br, -$C\underline{H}_2$-CH_2-$C\underline{H}_2$-CH_2-OH), 1.20 (br, -N-$(CH_2)_2$-$C\underline{H}_2$-$(CH2)_2$-OH), 0.88 (t, CH_2-CH_2-$C\underline{H}_3$).

CR3-Cchol-50-CR3

^{1}H NMR (400 MHz, Methanol-d_4,TMS): δ = 5.40(s, -C=C$\underline{H}$-C-), 4.54 – 4.33 (m, -O-C$\underline{H}$(-C-)$_2$, NH_2-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-NH-C(=O)-C$\underline{H}$-CH_2-), 4.29-4.09 (br, $C\underline{H}_2$-O-C(=O)-CH=CH_2), 4,09 (t, -CH_2-$C\underline{H}_2$-O-), 3.60 (t, CH_2-$C\underline{H}_2$-OH), 3.40-2.76 (m, -CH_2-$C\underline{H}_2$-N-, NH_2-C(=NH)-NH-$C\underline{H}_2$-, -$C\underline{H}_2$-S-$C\underline{H}_2$, from cholesterol and peptide), 2.63 (t, -O-C(=O)-$C\underline{H}_2$-$C\underline{H}_2$-C(=O)-O), 2.38 – 2.25, (m, from cholesterol), 2.12- 0.99 (m, - $C\underline{H}_2$-CH_2-$C\underline{H}_2$-CH_2-OH, -O-CH_2-$C\underline{H}_2$-$C\underline{H}_2$-CH_2-O, N-$(CH_2)_2$-$C\underline{H}_2$-$(CH_2)_2$-OH, from cholesterol and peptide), 0.90 (dd, from cholesterol), 0.74 (s, -CH-$(C\underline{H}_2)_2$.

CK3-Chol-50-CK3

^{1}H NMR (400 MHz, Methanol-d_4,TMS): δ = 5.40(s, -C=C$\underline{H}$-C-), 4.42 – 4.30 (m, -O-C$\underline{H}$(-C-)$_2$, from peptide), 4,25-4.05 (m, $C\underline{H}_2$-O-C(=O)-CH=CH_2, -CH_2-$C\underline{H}_2$-O-), 3.60 (t, CH_2-$C\underline{H}_2$-OH), 3.55-2.75 (m, -$C\underline{H}_2$-S-$C\underline{H}_2$, CH_2-$C\underline{H}_2$-N-, NH_2-$C\underline{H}_2$-$(CH_2)_3$-CH-, from cholesterol and peptide), 2.62 (t, -O-C(=O)-$C\underline{H}_2$-$C\underline{H}_2$-C(=O)-O), 2.36 – 2.24, (m, from cholesterol), 2.10- 0.99 (m, - $C\underline{H}_2$-CH_2-$C\underline{H}_2$-CH_2-OH, -O-CH_2-$C\underline{H}_2$-$C\underline{H}_2$-CH_2-O, N-$(CH_2)_2$-$C\underline{H}_2$-$(CH_2)_2$-OH, from cholesterol and peptide), 0.90 (dd, from cholesterol), 0.74 (s, -CH-$(C\underline{H}_2)_2$.

CH3-Cchol-CH3

^{1}H NMR (400 MHz, Methanol-d_4,TMS): δ = 8.6-7.0 (m -N(=C$\underline{H}$)-NH-C(=C$\underline{H}$)-), 5.41(s, -C=C$\underline{H}$-C-), 4.75 – 4.49 (m, -O-C$\underline{H}$(-C-)$_2$, from peptide), 4.20-4.08 (m, $C\underline{H}_2$-O-C(=O)-CH=CH_2, -CH_2-$C\underline{H}_2$-O-), 3.60 (t, CH_2-$C\underline{H}_2$-OH), 3.55-2.70 (m, -$C\underline{H}_2$-S-$C\underline{H}_2$,

CH_2-C$\underline{H}_2$-N-, from cholesterol and peptide), 2.62 (t, -O-C(=O)-C$\underline{H}_2$-C$\underline{H}_2$-C(=O)-O), 2.32, (m, from cholesterol), 2.19-0.93 (m, - C$\underline{H}_2$-CH_2-C$\underline{H}_2$-CH_2-OH, -O-CH_2-C$\underline{H}_2$-C$\underline{H}_2$-CH_2-O, N-$(CH_2)_2$-C$\underline{H}_2$-$(CH_2)_2$-OH, from cholesterol), 0.93-0.86 (dd, from cholesterol), 0.74 (s, -CH-(C$\underline{H}_2$)$_2$.

CD3-Cchol-CD3

^{1}H NMR (400 MHz, DMSO-d_6, TMS): δ = 5.33(s, -C=C$\underline{H}$-C-), 4.42 – 4.05 (m, -O-C$\underline{H}$(-C-)$_2$, C$\underline{H}_2$-O-C(=O)-CH=CH_2, -CH_2-C$\underline{H}_2$-O-, from peptide), 3.63 (t, CH_2-C$\underline{H}_2$-OH), 3.51-2.63 (m, -C$\underline{H}_2$-S-C$\underline{H}_2$, CH_2-C$\underline{H}_2$-N-, -O-C(=O)-C$\underline{H}_2$-C$\underline{H}_2$-C(=O)-O, from cholesterol and peptide), 2.28 – 2.19, (m, from cholesterol), 2.05- 0.89 (m, - C$\underline{H}_2$-CH_2-C$\underline{H}_2$-CH_2-OH, -O-CH_2-C$\underline{H}_2$-C$\underline{H}_2$-CH_2-O, N-$(CH_2)_2$-C$\underline{H}_2$-$(CH_2)_2$-OH, from cholesterol), 0.84 (dd, from cholesterol), 0.65 (s, -CH-(C$\underline{H}_2$)$_2$.

CE3-Cchol-CE3

^{1}H NMR (400 MHz, DMSO-d_6, TMS): ^{1}H NMR (400 MHz, DMSO-d_6, TMS): δ = 5.33(s, -C=C$\underline{H}$-C-), 4.44 – 4.06 (m, -O-C$\underline{H}$(-C-)$_2$, C$\underline{H}_2$-O-C(=O)-CH=CH_2, -CH_2-C$\underline{H}_2$-O-, from peptide), 3.63 (t, CH_2-C$\underline{H}_2$-OH), 3.50-2.62 (m, -C$\underline{H}_2$-S-C$\underline{H}_2$, CH_2-C$\underline{H}_2$-N-, -O-C(=O)-C$\underline{H}_2$-C$\underline{H}_2$-C(=O)-O, from cholesterol and peptide), 2.27 – 2.18, (m, from cholesterol), 2.05- 0.89 (m, - C$\underline{H}_2$-CH_2-C$\underline{H}_2$-CH_2-OH, -O-CH_2-C$\underline{H}_2$-C$\underline{H}_2$-CH_2-O, N-$(CH_2)_2$-C$\underline{H}_2$-$(CH_2)_2$-OH, from cholesterol), 0.84 (dd, from cholesterol), 0.65 (s, -CH-(C$\underline{H}_2$)$_2$.

1.3. Biophysical characterization: Gel Retardation Assay

Polymer - nucleic acid binding capability was analyzed by gel retardation assay working at different polymer/nucleic acid weight ratios, ranging from 10:1 to 400:1. Polymers obtained by stoichiometric ratios of hydrophobic/hydrophilic amine and further end-modified with arginine were analyzed by gel retardation assay as a representative formulation of each hydrophobic modifications. Moreover, previously described C32-CR3 polymer was used as a control (Supplementary Figure 1).

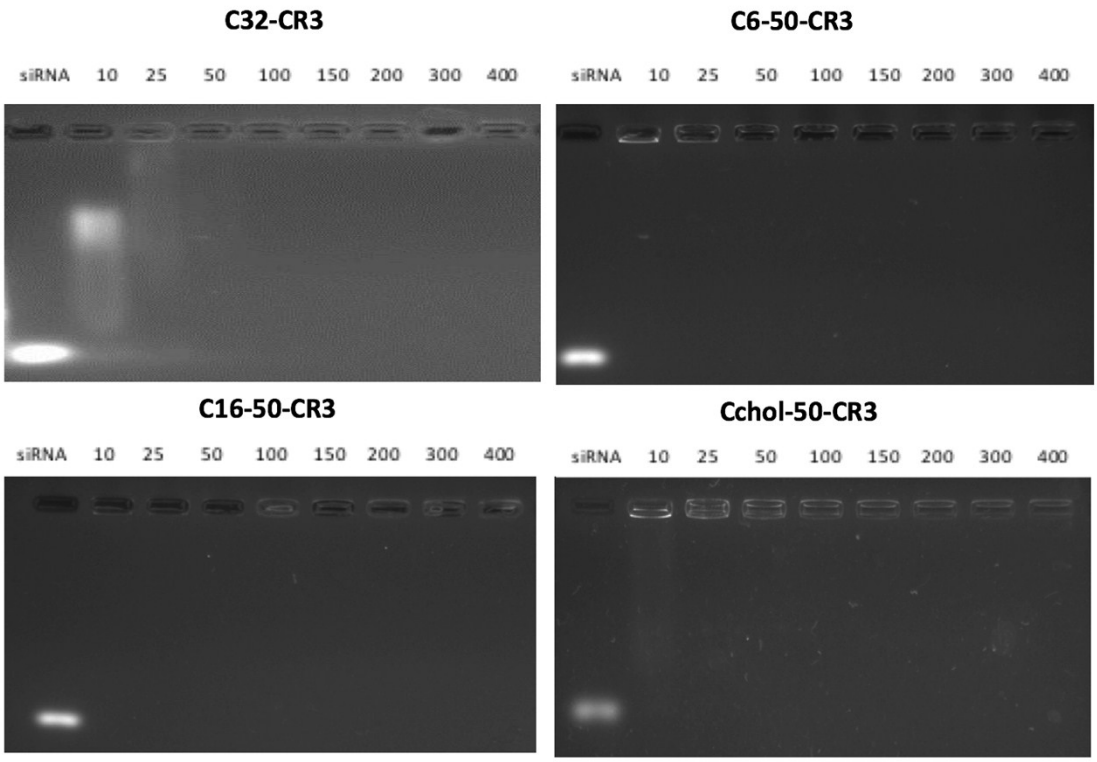

Figure S1. Agarose gel retardation assay of newly hydrophobic synthetized PBAES using siGFP siRNA at various weight ratios. Polymer:siRNA complexes were prepared at different ratios (w/w) ranging from 1:10 to 1:400. An intermediate hydrophobicity range, stequiometry hydrophobic/hydrophilic ratio, of different alkyl side chains was selected. Polymers were compared with previously well characterized C32 polymer. Polyplexes were freshly prepared prior the assay and agarose gel containing ethidium bromide loaded into 2,5% and was run 1 h at 80 V.

1.4. Oligopeptide-end modification of C6-50 and Cchol-50 polymers

C6-50 and Cchol-50 polymers were further modified using positive and negative oligopeptides and biophysically characterized by DLS.

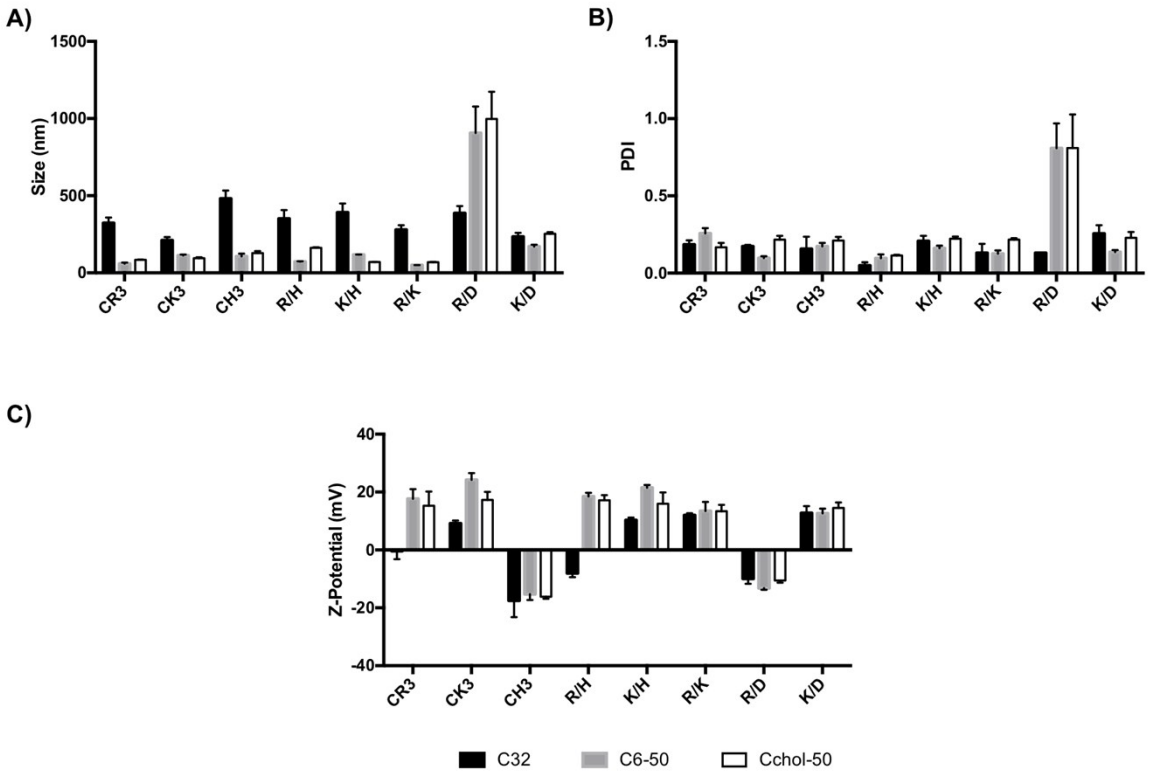

Figure S2. Biophysical characterization of oligopeptide end-modified C6-50 and Cchol-50 polymers. A) Average size, B) polydispersity, C) and zeta potential were determined by dynamic light scattering (DLS). Polyplexes were prepared using siRNA and different end-modified pBAE C6-50 and Cchol-50 polymers at 100:1 w/w ratio. 200:1 w/w ratio was used for C32 polymer. Results are shown as mean and standard deviation of triplicates.