Supporting Information

Block Ionomer Networks from Poly(acrylic acid) and Poly(ethylene oxide): Sorption and Release of Cytochrome C

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Figure S-1. Effect of (a) NaCl (b) $CaCl_2$ and $MgCl_2$ (c) on the swelling of PN, Q, as a function of the concentration of added NaCl: (●) *cl*PAA, (■) PEO-*cl*-PAA(1:320), and (▲) PEO-*cl*-PAA(1:80). The data are mean ± SEM, n = 3. The equilibrium swelling ratios for these hydrogels in distilled water, Q_o are presented in **Table 1** of the manuscript.

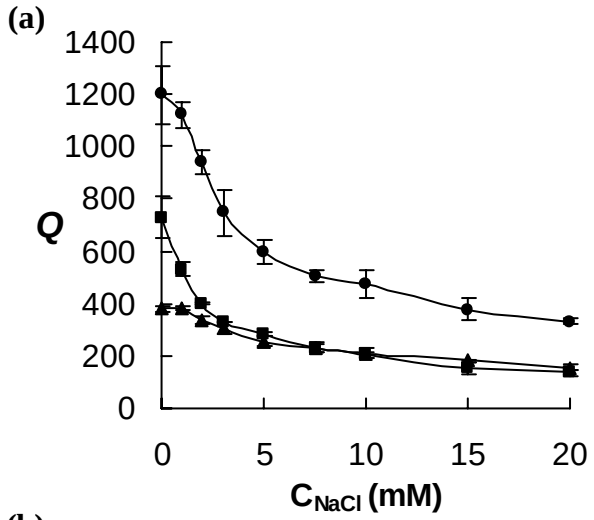
Figure S-2. Kinetics of sorption of cytochrome C in PN at z = 0.25 and pH 9.5: (●) *cl*PAA, (■) PEO-*cl*-PAA(1:320), and (▲) PEO-*cl*-PAA(1:80). The insert present the data for a shorter time scale.

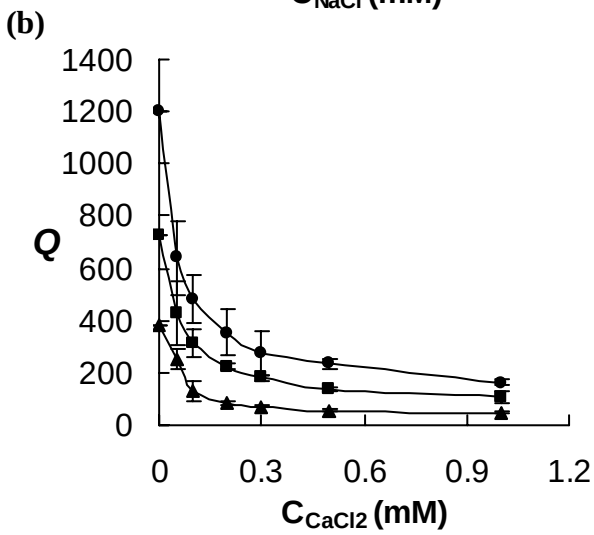
Figure S-3. Linearization of the data in Figure 4 of the main paper and Figure S-2 of the Supporting Information in the coordinates ln[1 - F] vs *t*: (a) z = 0.25, pH 5.8; (b) z = 0.25, pH 9.5; and (c) z = 1, pH 5.8: (●) *cl*PAA, (■) PEO-*cl*-PAA(1:320), and (▲) PEO-*cl*-PAA(1:80). The insert present the data for a shorter time scales. The first rate kinetic constants for the sorption determined for the linear areas are presented in Table S-4 of the supplementary material.

Figure S-5. Linearization of the data in Figure 4 of the main paper and Figure S-2 of the Supporting Information in the coordinates of Fick law, F vs. $t^{1/2}$: (a) z = 0.25, pH 5.8; (b) z = 0.25, pH 9.5; and (c) z = 1, pH 5.8: (●) *cl*PAA, (■) PEO-*cl*-PAA(1:320), and (▲) PEO-*cl*-PAA(1:80). The insert present the data for a shorter time scales.

Table S-4. Rate constant values calculated from the kinetic data of inserts in Figure S-3

System	z	pH	K_s, s^{-1}
*cl*PAA			2.31×10^{-5}
PEO-*cl*-PAA(320)	0.25	5.8	1.02×10^{-5}
PEO-*cl*-PAA(80)			1.45×10^{-5}
*cl*PAA			1.86×10^{-5}
PEO-*cl*-PAA(320)	0.25	9.5	1.62×10^{-5}
PEO-*cl*-PAA(80)			1.21×10^{-5}
*cl*PAA			4.66×10^{-6}
PEO-*cl*-PAA(320)	1	5.8	4.21×10^{-6}
PEO-*cl*-PAA(80)			5.95×10^{-6}


(a)
1400
1200
1000
800
600
400
200
0
Q
0
5
10
15
20
C NaCl (mM)


(b)
1400
1200
1000
800
600
400
200
0
Q
0
0.3
0.6
0.9
1.2
C CaCl2 (mM)

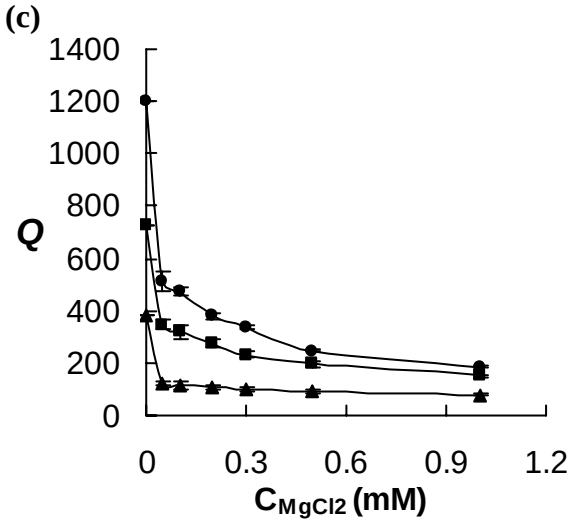

(c)
1400
1200
1000
800
600
400
200
0
Q
0
0.3
0.6
0.9
1.2
C MgCl2 (mM)

Figure S-1.

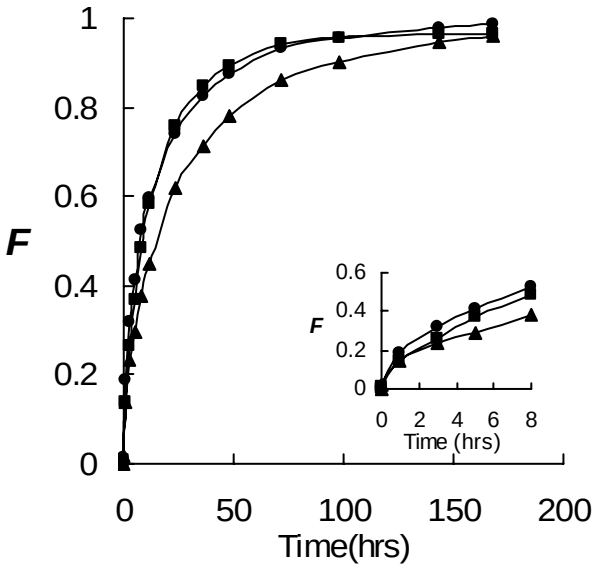


Figure S-2.

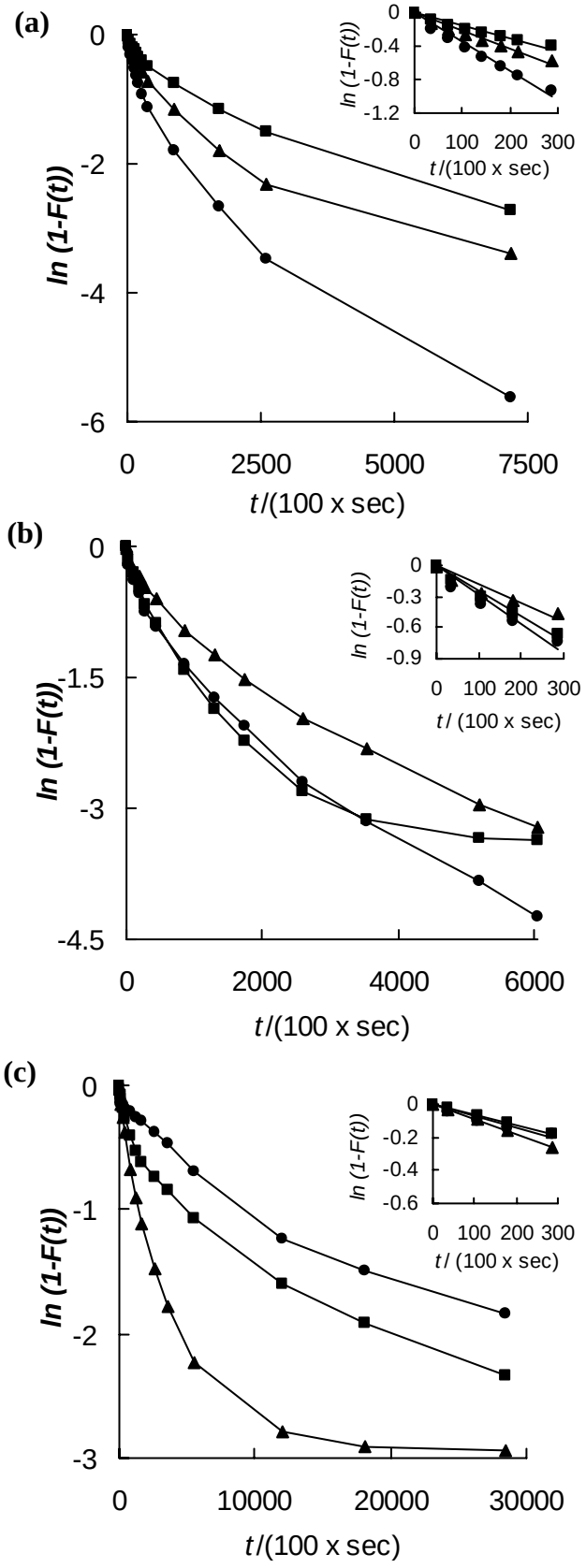

(a)
ln (1-F(t))
0
-2
-4
-6
0
2500
5000
7500
t/(100 x sec)
ln (1-F(t))
0
-0.4
-0.8
-1.2
0
100
200
300
t/(100 x sec)
(b)
ln (1-F(t))
0
-1.5
-3
-4.5
0
2000
4000
6000
t/(100 x sec)
ln (1-F(t))
0
-0.3
-0.6
-0.9
0
100
200
300
t/ (100 x sec)
(c)
ln (1-F(t))
0
-1
-2
-3
0
10000
20000
30000
t/(100 x sec)
ln (1-F(t))
0
-0.2
-0.4
-0.6
0
100
200
300
t/ (100 x sec)

Figure S-3.

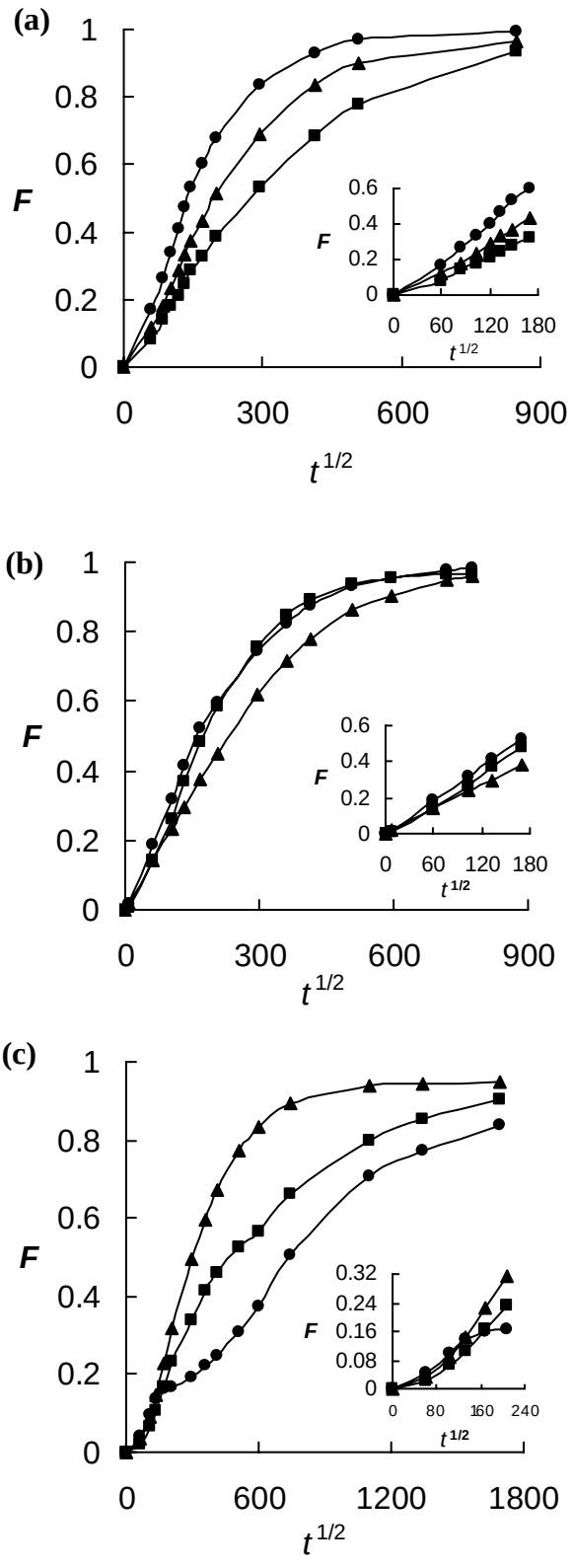


Figure S-5.