

## Supplemental Information

### Host Defense Peptide Mimicking Cyclic Peptoid Polymers Exerting Strong Activity against Drug-Resistant Bacteria

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### Figure captions

**Fig. S1.** Synthesis route of *N*-pentafluorobenzyl-NNCA monomer

**Fig. S2.** <sup>1</sup>H NMR of *N*<sup>β</sup>-Cbz-aminoethyl-NNCA monomer

**Fig. S3.** HRESI-MS of *N*<sup>β</sup>-Cbz-aminoethyl-NNCA monomer

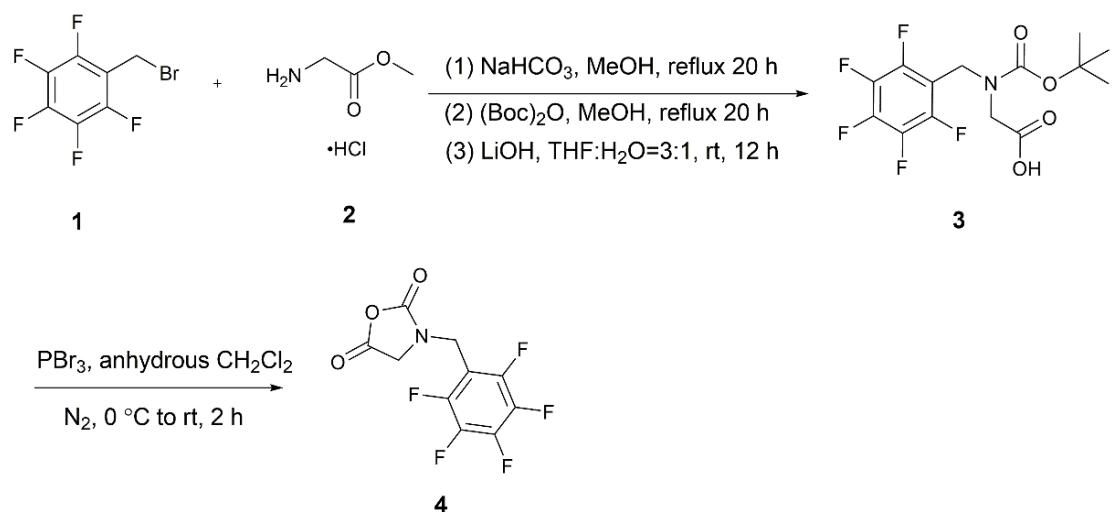
**Fig. S4.** <sup>1</sup>H NMR of *N*-[(perfluorophenyl)methyl]-*N*-[(tert-butoxy)carbonyl]glycine (compound 3)

**Fig. S5.** <sup>1</sup>H NMR of *N*-pentafluorobenzyl-NNCA monomer (compound 4)

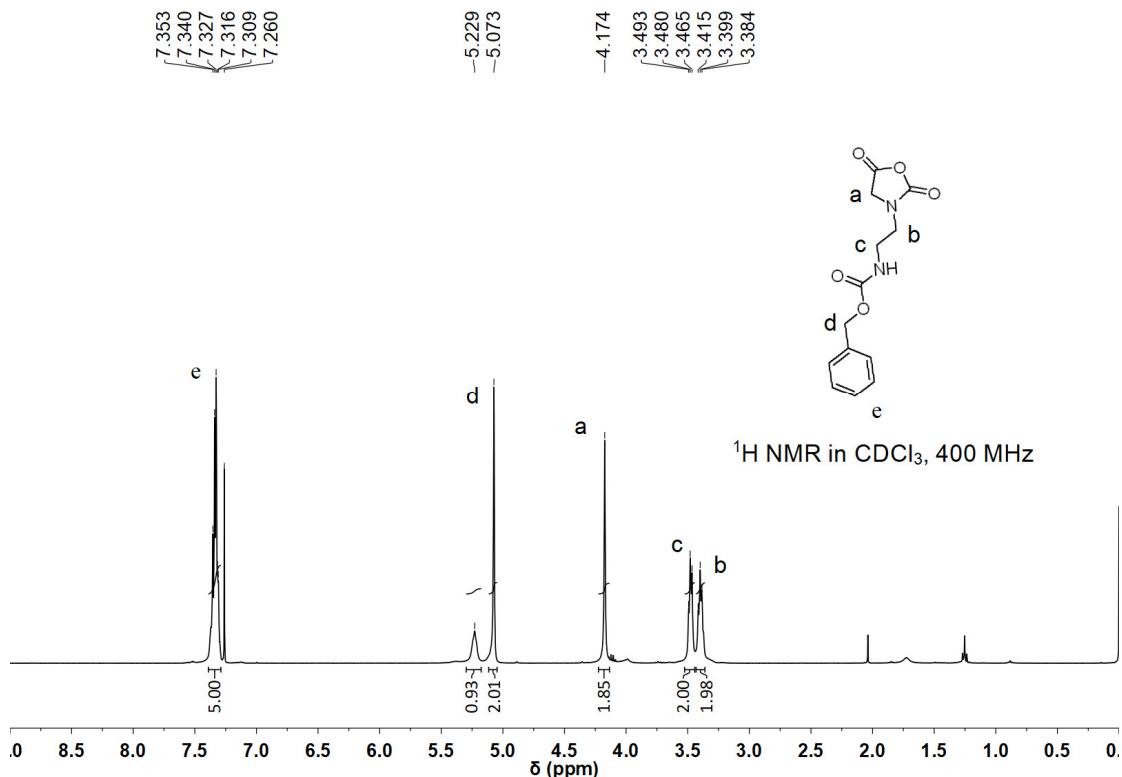
**Fig. S6.** <sup>13</sup>C NMR of *N*-pentafluorobenzyl-NNCA monomer (compound 4)

**Fig. S7.** HREI-MS of *N*-pentafluorobenzyl-NNCA monomer (compound 4)

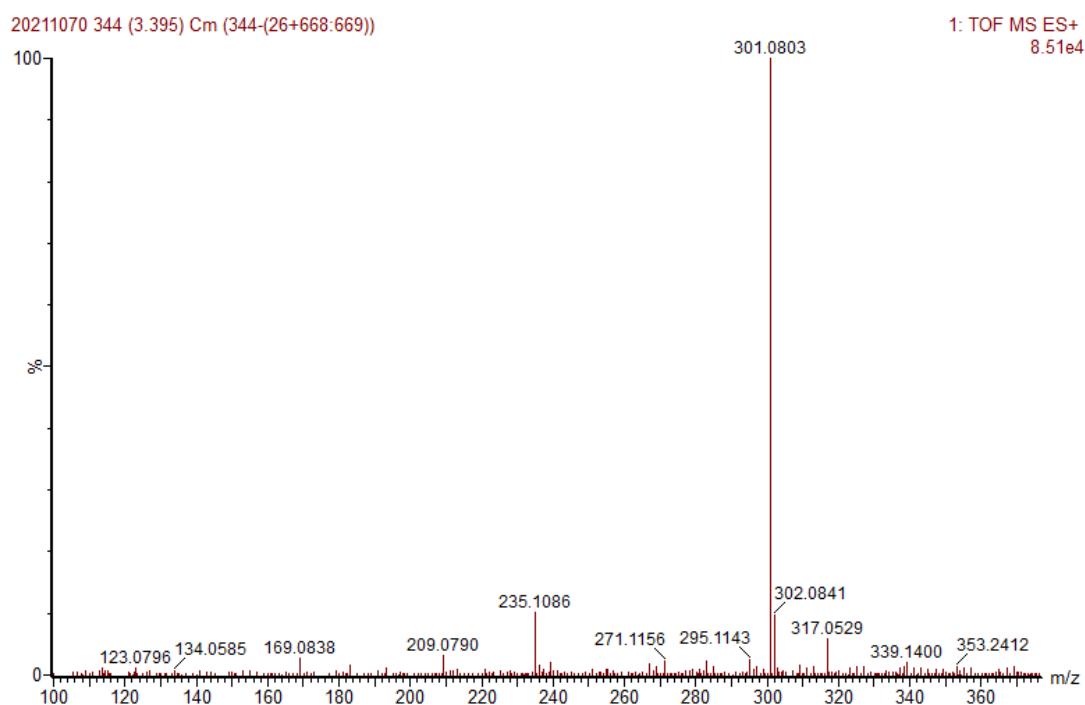
**Table S1.** GPC analysis of *N*-Cbz protected cyclic poly(Naeg<sub>x</sub>Npfbg<sub>y</sub>)<sub>20</sub> (x=0.4 – 0.9)



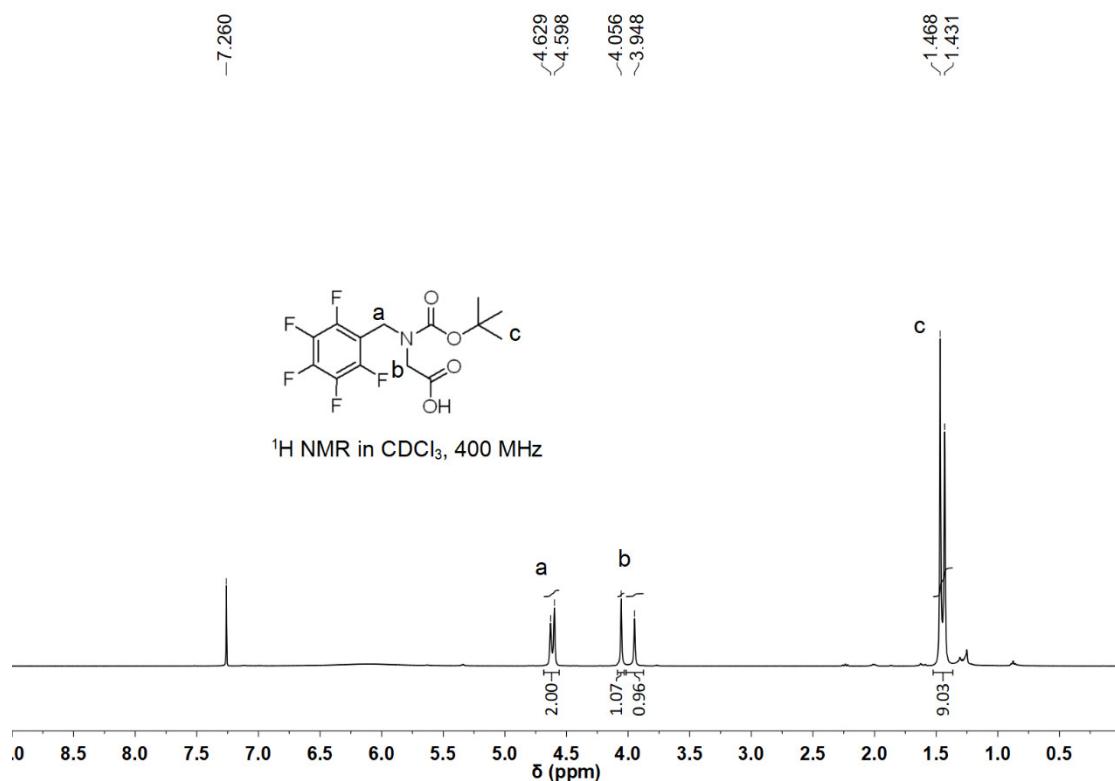
**Fig. S1.** Synthesis route of *N*-pentafluorobenzyl-NNCA monomer.



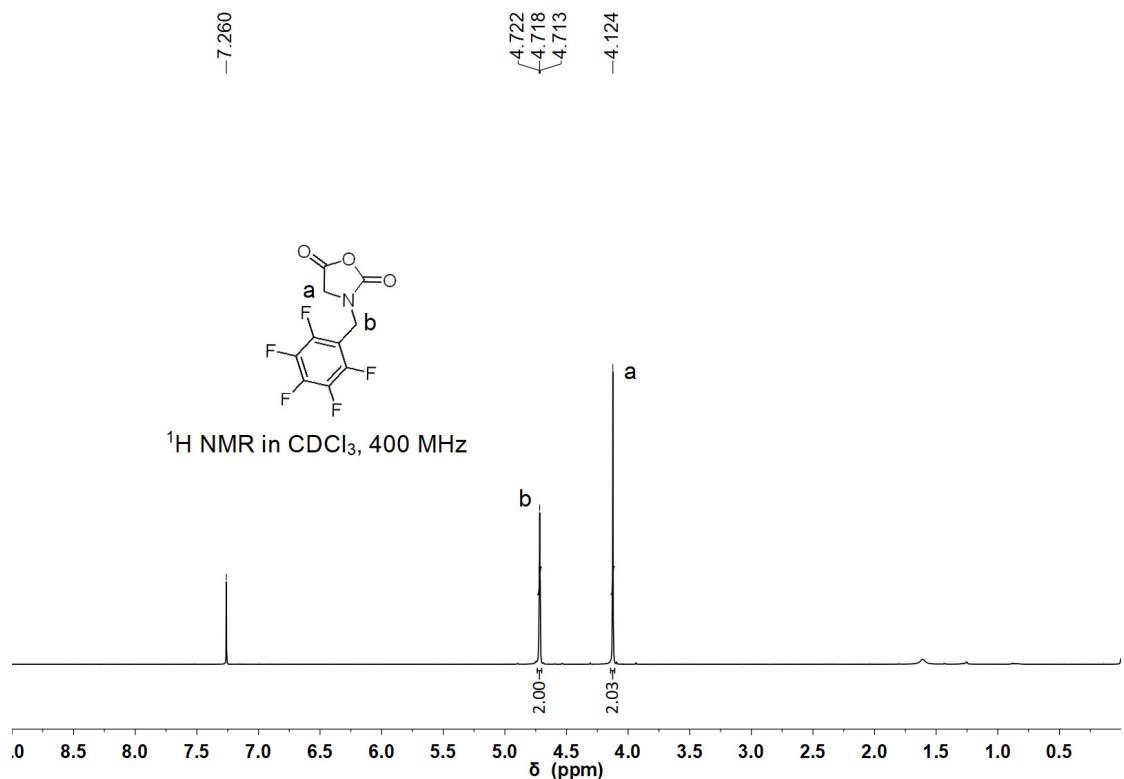
**Fig. S2.**  $^1\text{H}$  NMR spectrum of  $\text{N}^\beta\text{-Cbz-aminoethyl-NNCA}$  monomer in  $\text{CDCl}_3$  at 400 MHz.



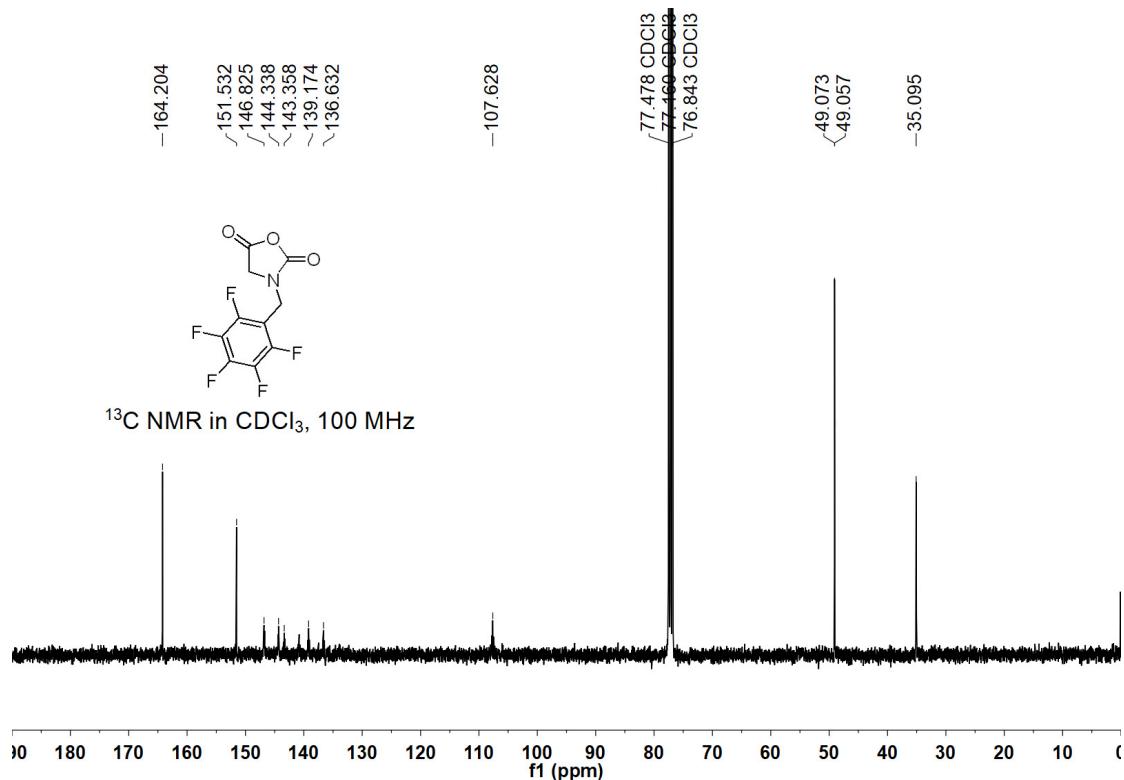
**Fig. S3.** HRESI-MS characterization of  $N^{\beta}$ -Cbz-aminoethyl-NNCA monomer.



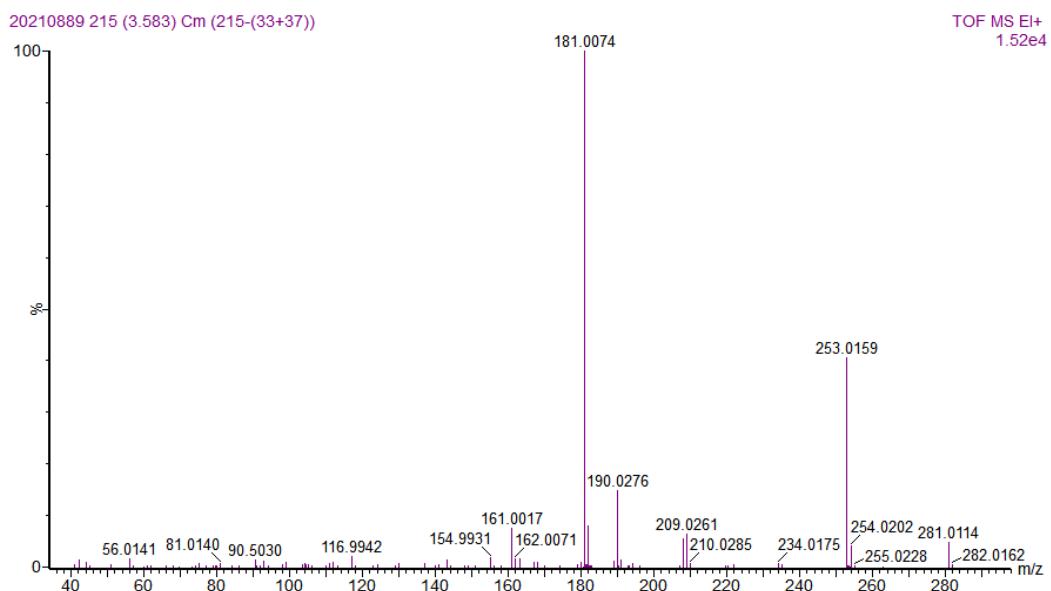
**Fig. S4.** <sup>1</sup>H NMR spectrum of  $N$ -[(perfluorophenyl)methyl]- $N$ -[(tert-butoxy)carbonyl]glycine (compound 3) in CDCl<sub>3</sub> at 400 MHz.



**Fig. S5.**  $^1\text{H}$  NMR spectrum of *N*-pentafluorobenzyl-NNCA monomer (compound 4) in  $\text{CDCl}_3$  at 400 MHz.



**Fig. S6.**  $^{13}\text{C}$  NMR spectrum of *N*-pentafluorobenzyl-NNCA monomer (compound 4) in  $\text{CDCl}_3$  at 100 MHz.



**Fig. S7.** HREI-MS characterization result of *N*-pentafluorobenzyl-NNCA monomer (compound 4).

**Table S1.** GPC characterization of *N*-Cbz protected cyclic poly(Naeg<sub>x</sub>Npfbg<sub>y</sub>)<sub>20</sub> (x = 0.4 – 0.9, x and y represent content of two monomers respectively)

Naeg : Npfbg x : y	[M] <sub>0</sub> : [I] <sub>0</sub>	M <sub>n</sub> (Da)	DP	D
40:60	20	3700	15	1.24
50:50	20	3700	16	1.24
60:40	20	4000	17	1.25
70:30	20	4100	17	1.26
80:20	20	4000	17	1.27
90:10	20	4000	17	1.26