

[Supporting Information]

Influence of block sequence on the colloidal self-assembly of poly(norbornene)-block-poly(ethylene oxide) amphiphilic block polymers using rapid injection processing

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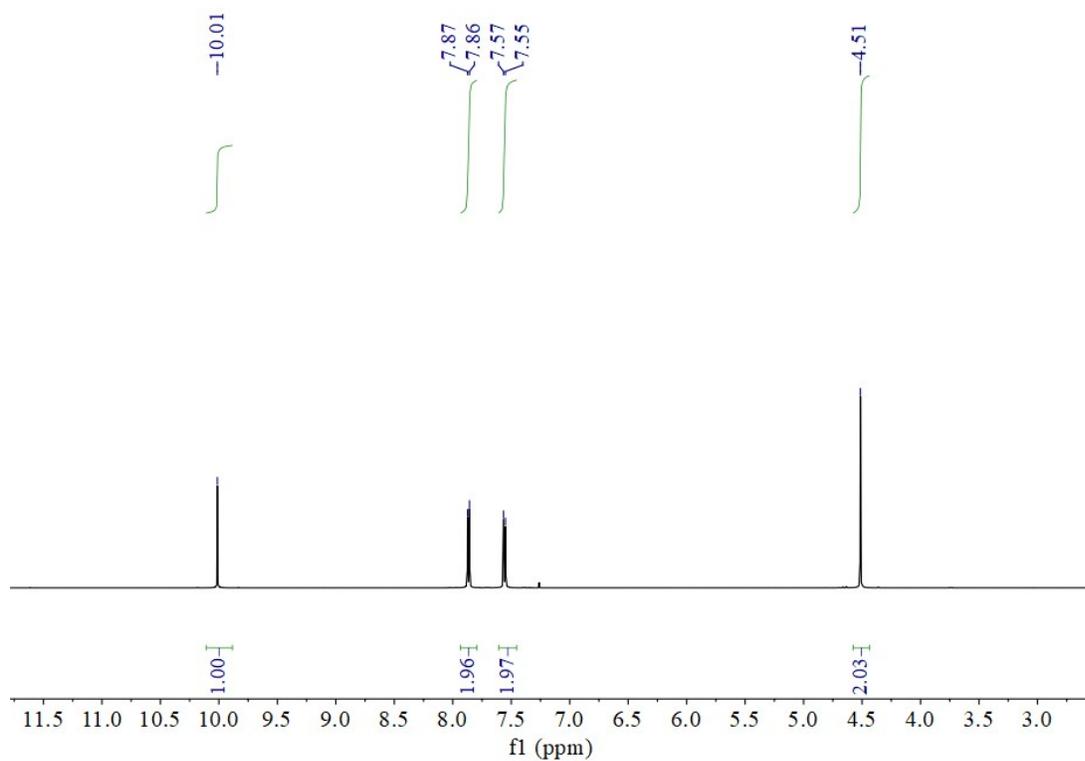


Figure S1. ¹H NMR spectra of compound **1** in CDCl₃.

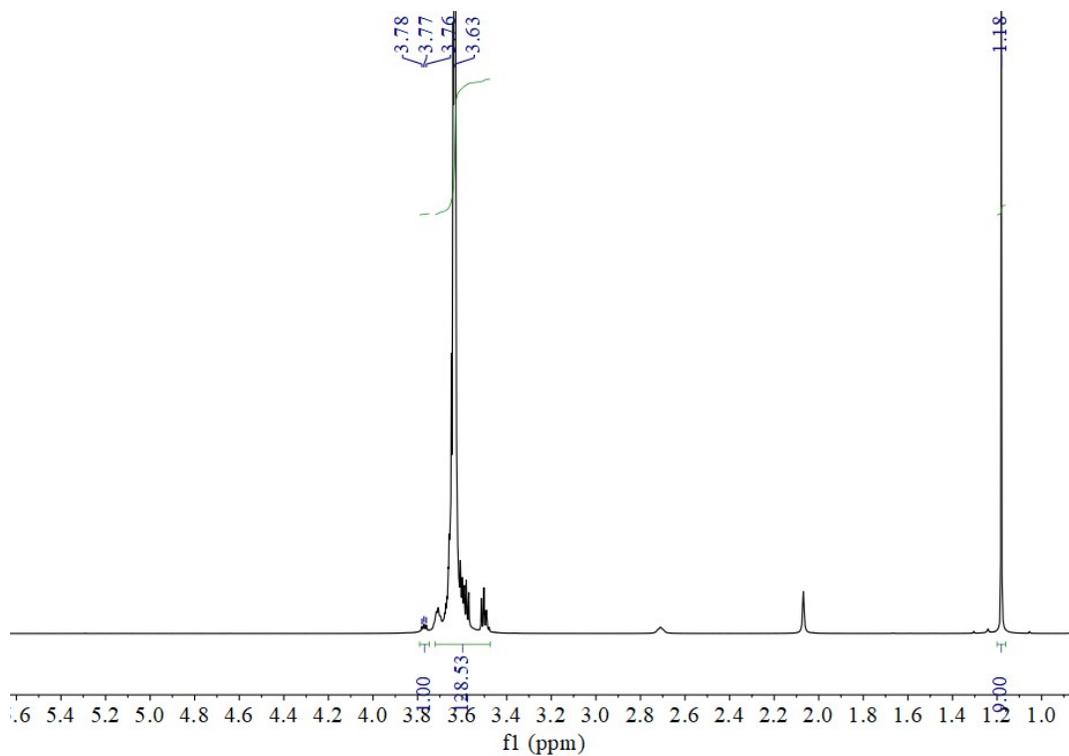


Figure S2. ¹H NMR spectra of mono-hydroxyl functionalized PEO in CDCl₃.

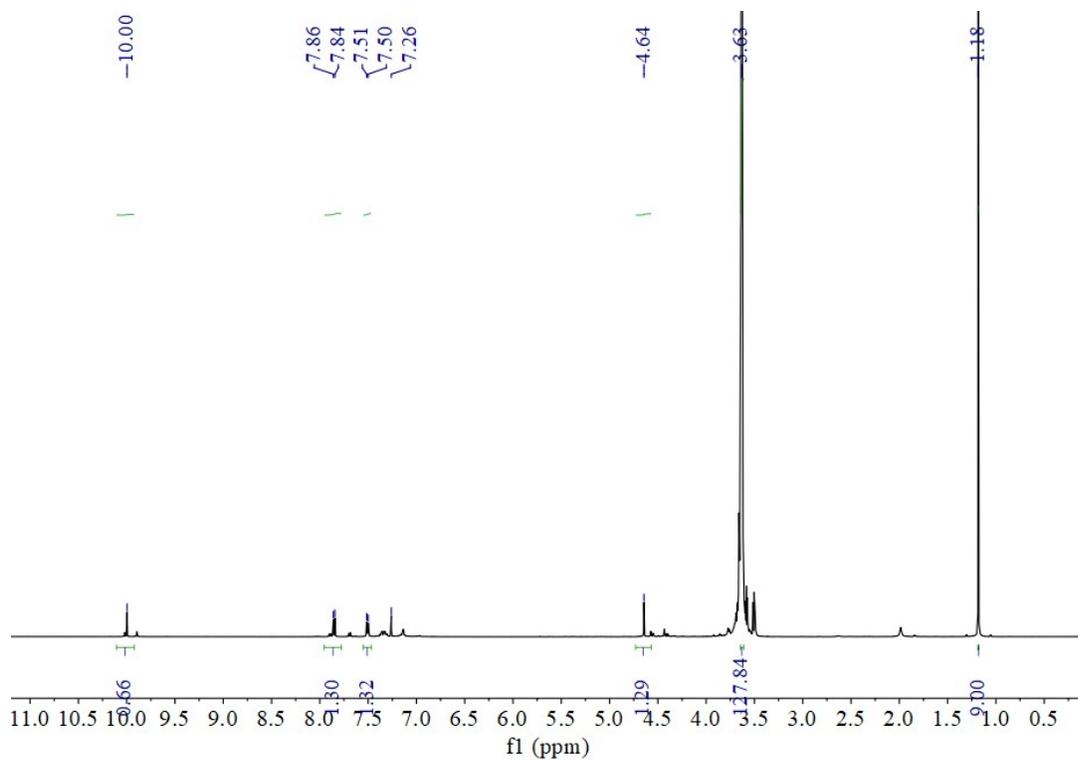


Figure S3. ¹H NMR spectra of mono-aldehyde functionalized PEO **2** in CDCl₃.

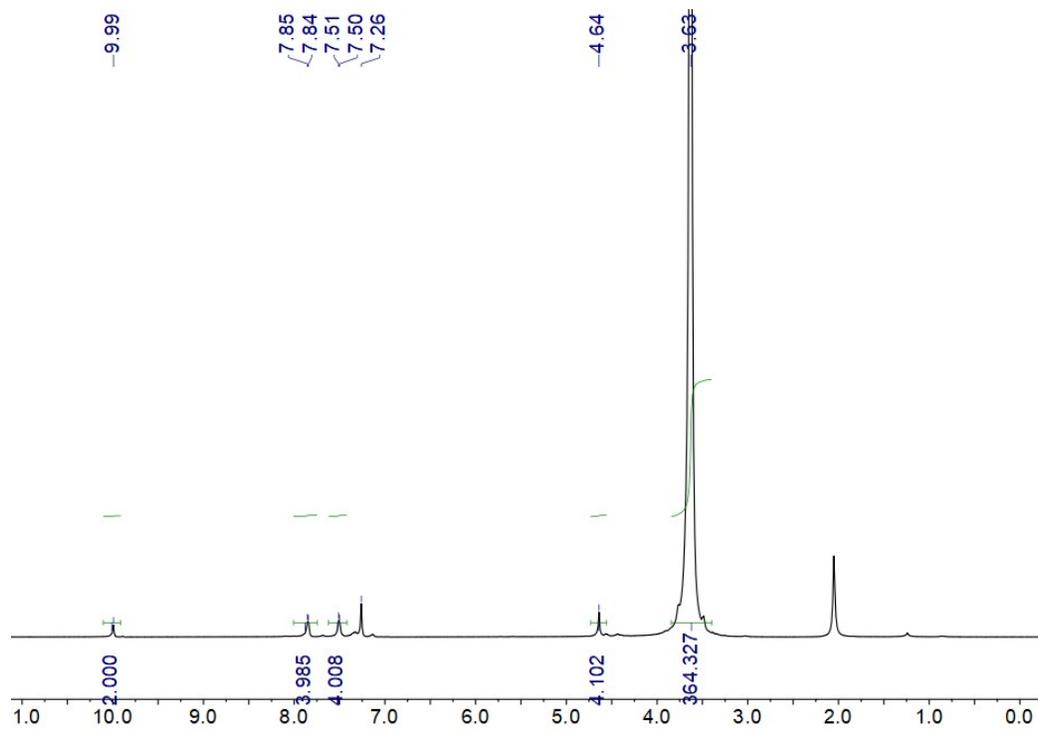


Figure S4. ¹H NMR spectra of di-aldehyde functionalized PEO **3** in CDCl₃.

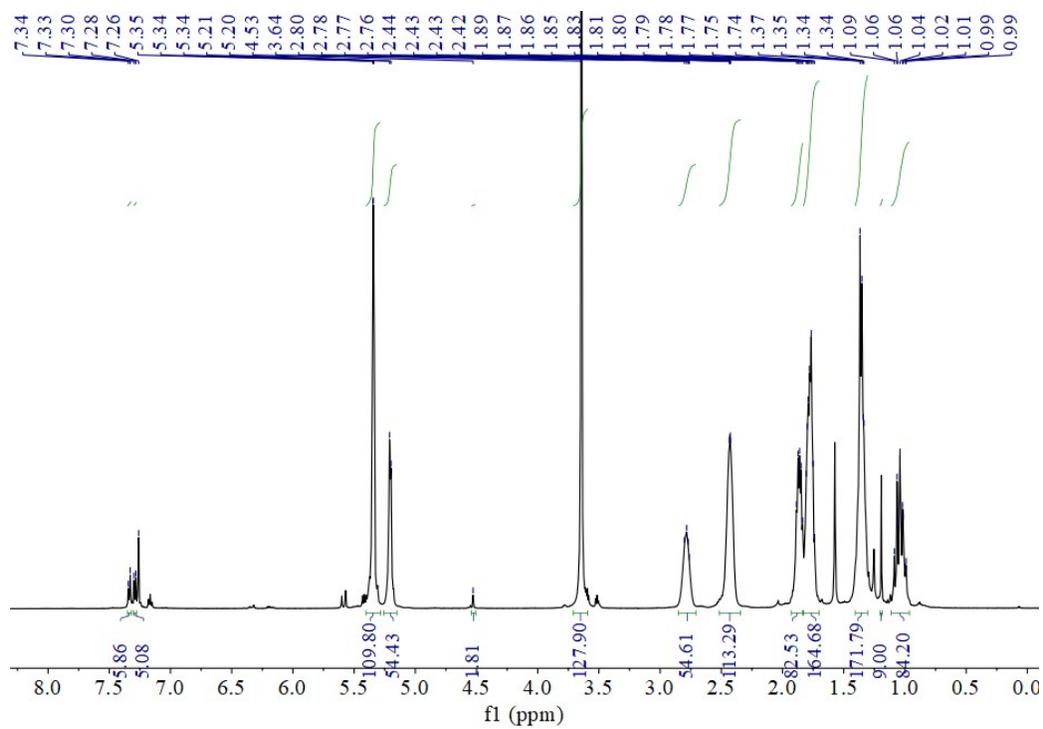


Figure S5. ^1H NMR spectra of NO in CDCl_3 .

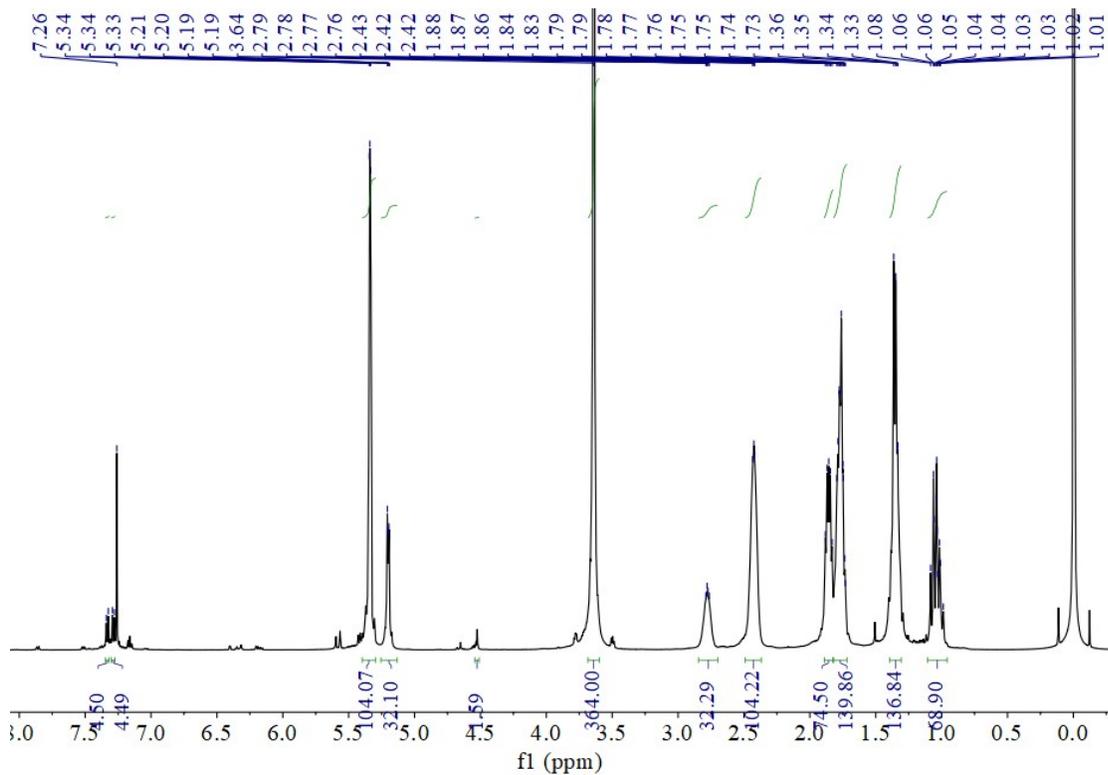


Figure S6. ^1H NMR spectra of NON in CDCl_3 .

Table S1. Comparison of number-average molecular weights of the block copolymers using ^1H NMR spectroscopy and SEC.

Polymer	$M_{n, \text{total}}^{\text{a}}$ (kg/mol)	$M_{n, \text{total}}^{\text{b}}$ (kg/mol)
NO(3.6-1.4)	5.0	4.8
NO(5.8-1.4)	7.2	5.4
NO(7.7-1.4)	9.1	6.2
NON(1.8-4-1.8)	7.6	7.2
NON(3.2-4-3.2)	10.4	8.7

^aNumber-average molecular weight determined from ^1H NMR spectroscopy.

^bNumber-average molecular weight determined from size exclusion chromatography (SEC). The dn/dc values of the block copolymers were calculated using block volume fraction obtained from ^1H NMR and homopolymer dn/dc values. The dn/dc value of PEO in THF (0.067 mL/g) was obtained from the website of Polymer Source. The dn/dc value of PNBE in THF is determined to be 0.17 mL/g using a BI-DNDC differential refractometer (Brookhaven Instruments Corporation). As shown, number-average molecular weights obtained from SEC are similar to the values obtained from ^1H NMR.

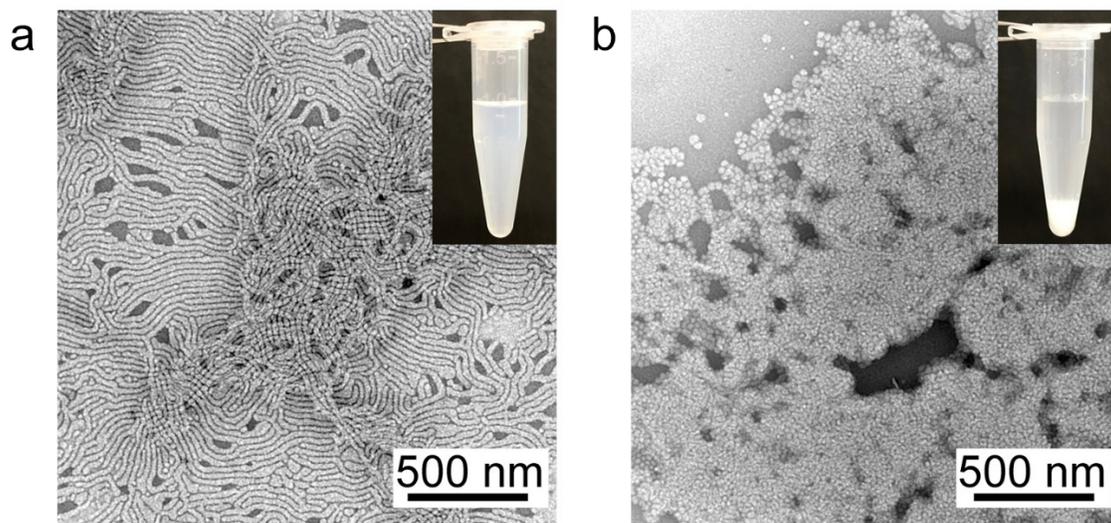


Figure S7. TEM images of (a) **IO** and (b) **IOI** self-assembled structures via rapid injection of 20 wt% polymer solutions in THF. The embedded pictures are aqueous polymer solutions in water after rapid injection.

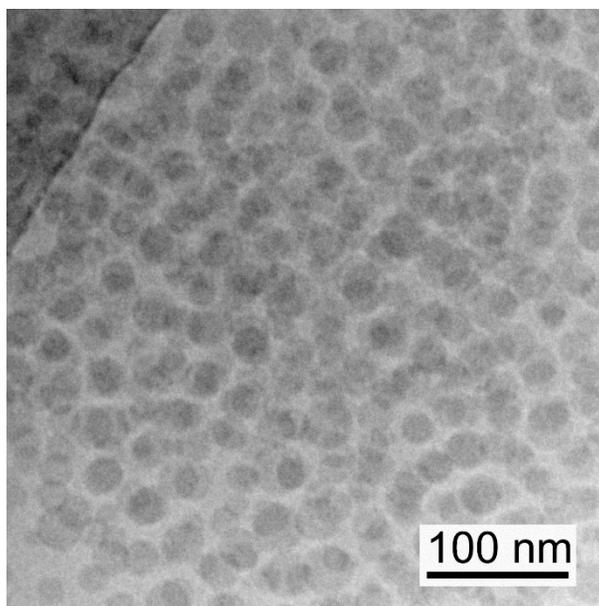


Figure S8. Cryo-TEM image of microgel from rapid injection of a 30 wt% NON(3.2-4-3.2) THF solution into water. The cryo-TEM sample was prepared using

a FEI Vitrobot, stored and handled at frozen state in liquid nitrogen. The image was collected using low-dose mode.

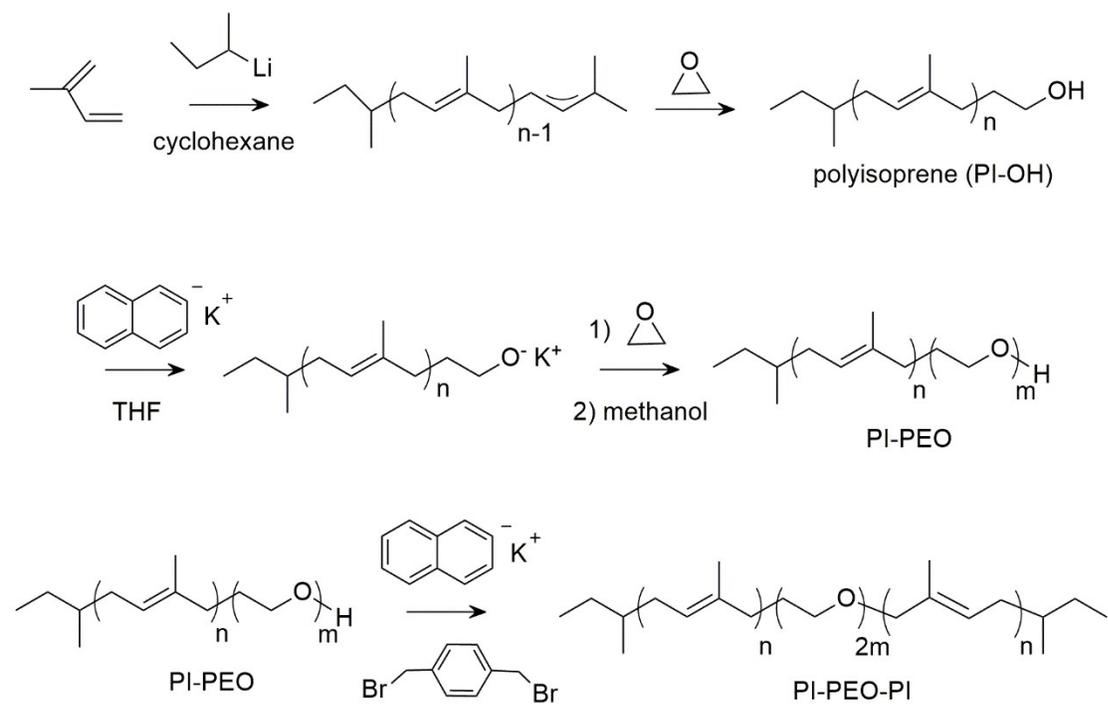


Figure S9. Synthesis route for diblock copolymer IO and triblock copolymer IOI.