

Supporting Information for

## Phase Behavior of Polystyrene-Polypeptoid Block Copolymers

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### Analytical HPLC traces for Polypeptoid Homopolymers

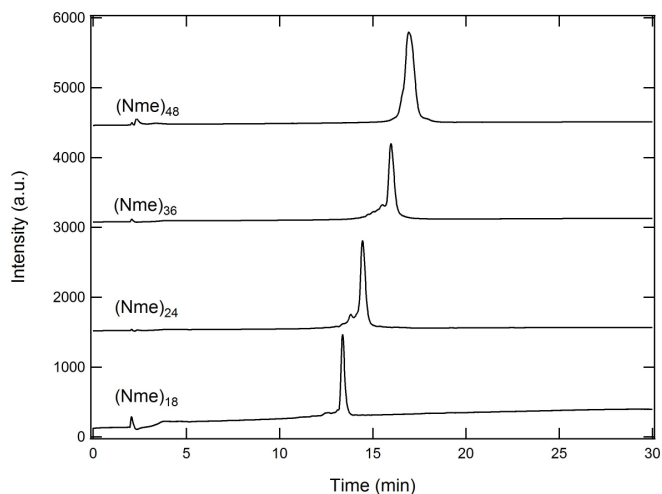


Figure S1. Analytical HPLC traces for (Nme)<sub>N</sub> polypeptoids. The HPLC gradient was 5-95% acetonitrile (solvent B was water) over 30 minutes at 60°C.

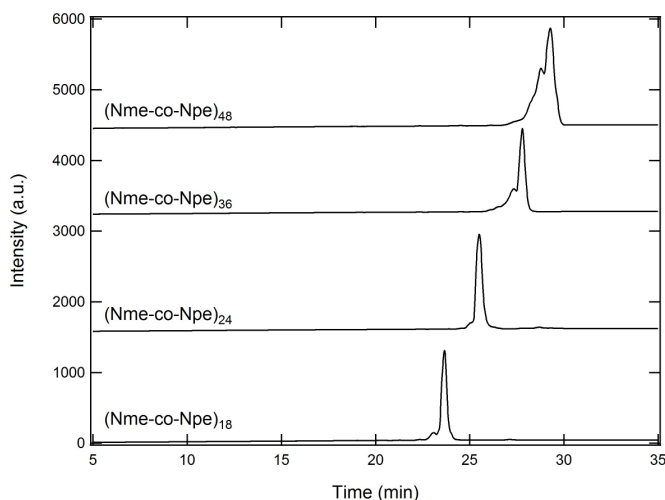


Figure S2. Analytical HPLC traces for (Nme-co-Npe)<sub>N</sub> polypeptoids. The HPLC gradient was 5-95% acetonitrile (solvent B was water) over 30 minutes at 60°C.

### Magnified SAXS for $S_{84}Nme_{24}$

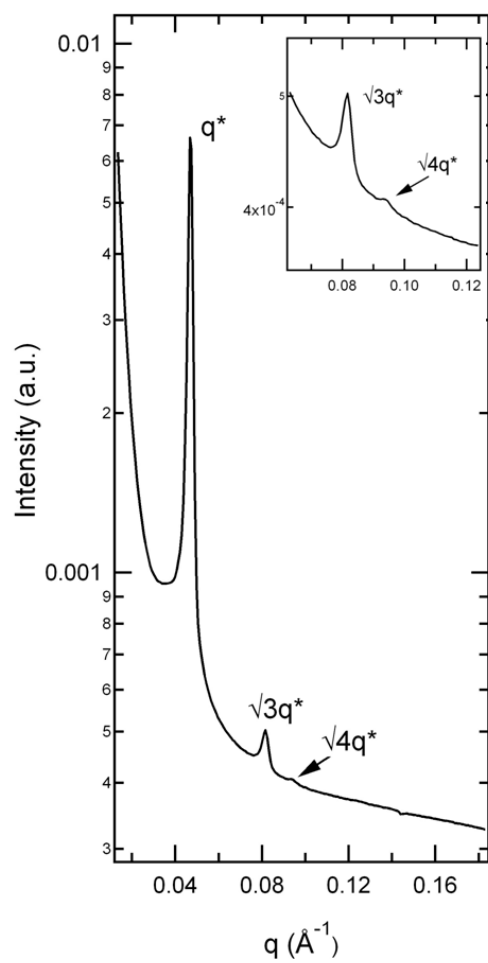


Figure S3. Magnified SAXS pattern for  $S_{84}Nme_{24}$  allows one to see the  $\sqrt{4}q^*$  peak more clearly.

### Inverse Intensity vs. Inverse Temperature Plots to Determine Order-Disorder Transitions

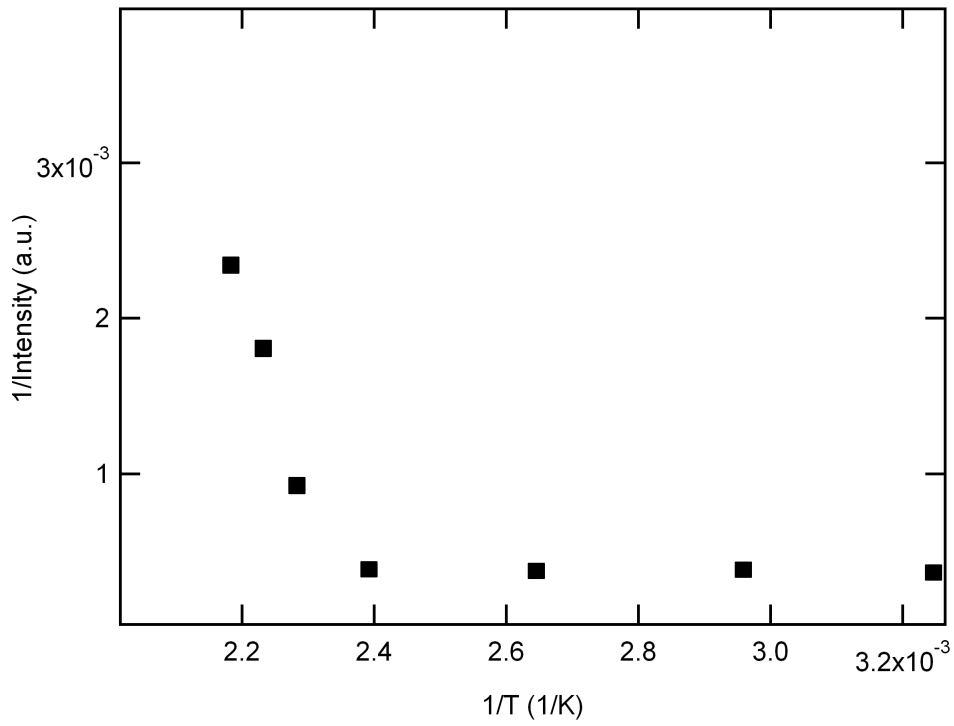


Figure S4. Inverse intensity versus inverse temperature for S<sub>32</sub>Nme<sub>24</sub>.

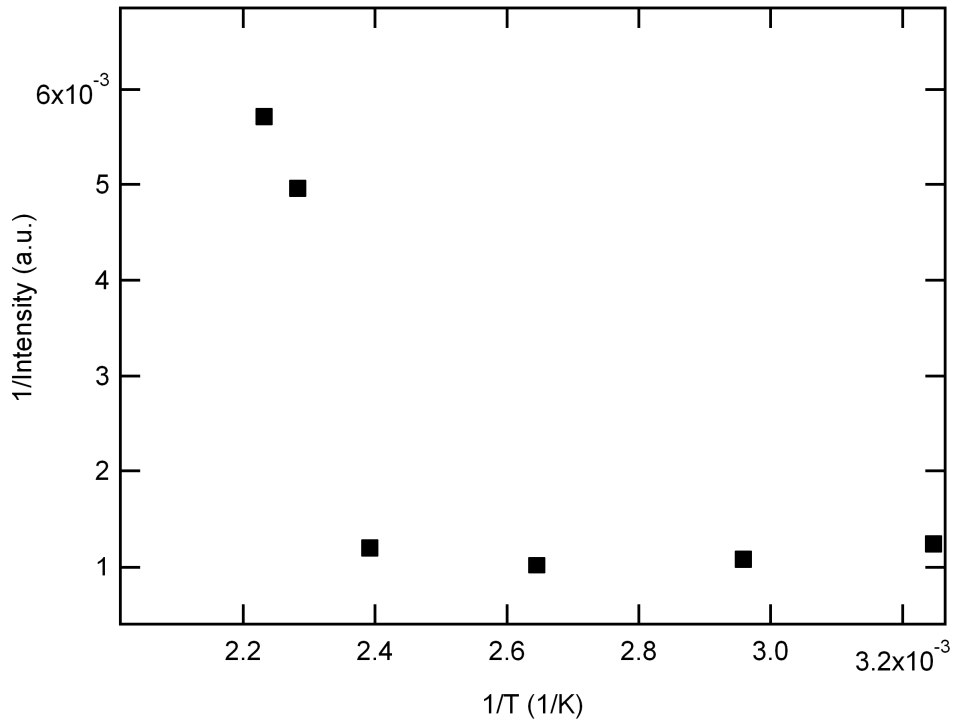


Figure S5. Inverse intensity versus inverse temperature for  $S_{32}Nme_{36}$ .

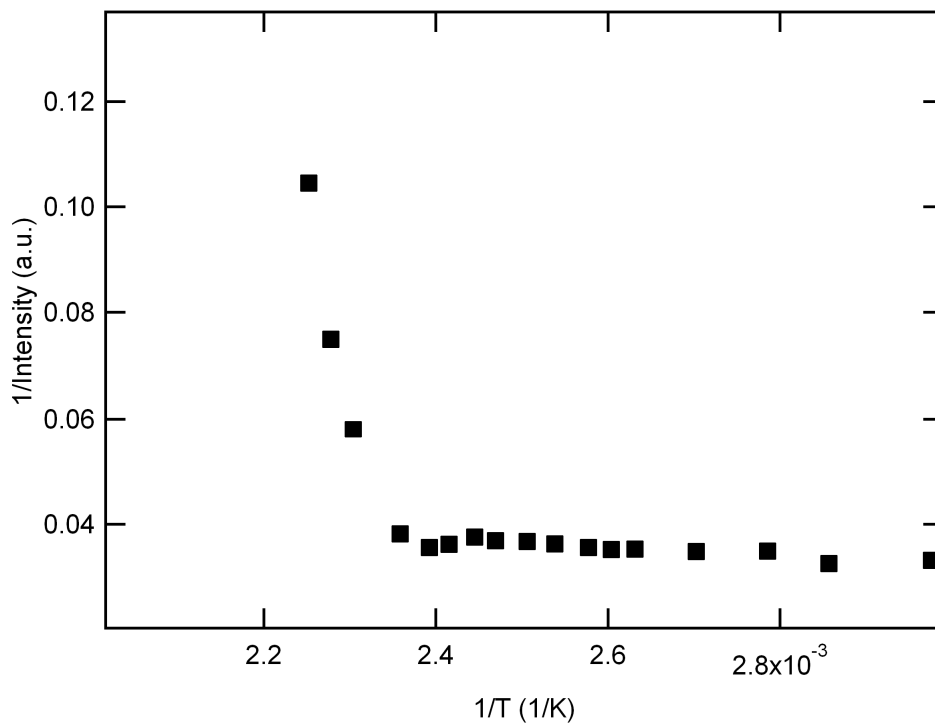


Figure S6. Inverse intensity versus inverse temperature for  $S_{32}Nme_{48}$ .

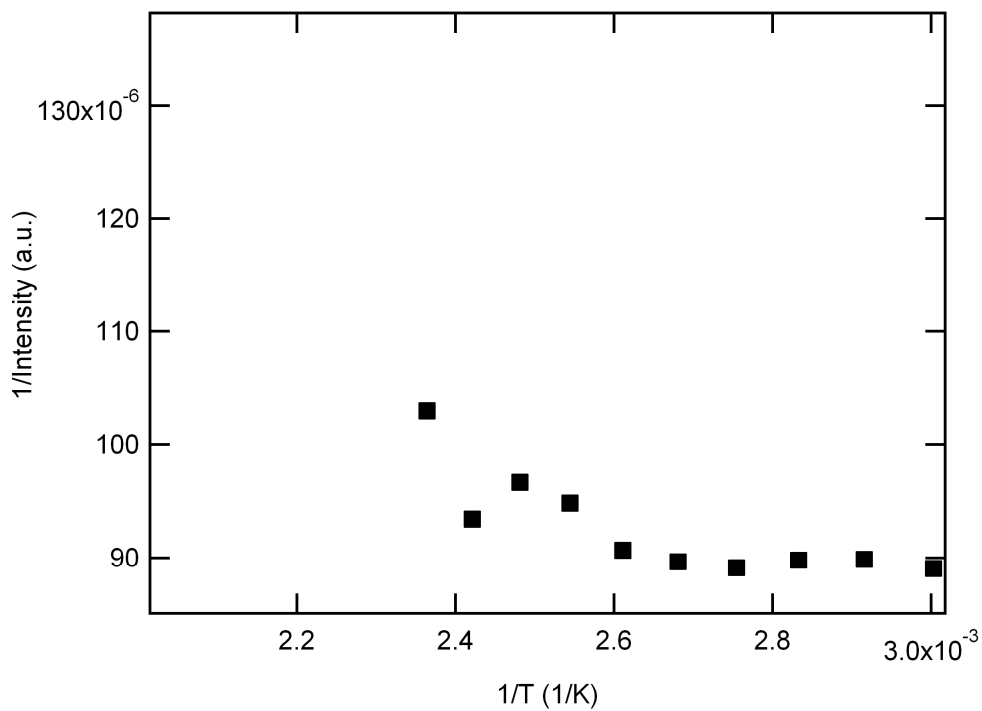


Figure S7. Inverse intensity versus inverse temperature for  $S_{48}Nme_{36}$ .

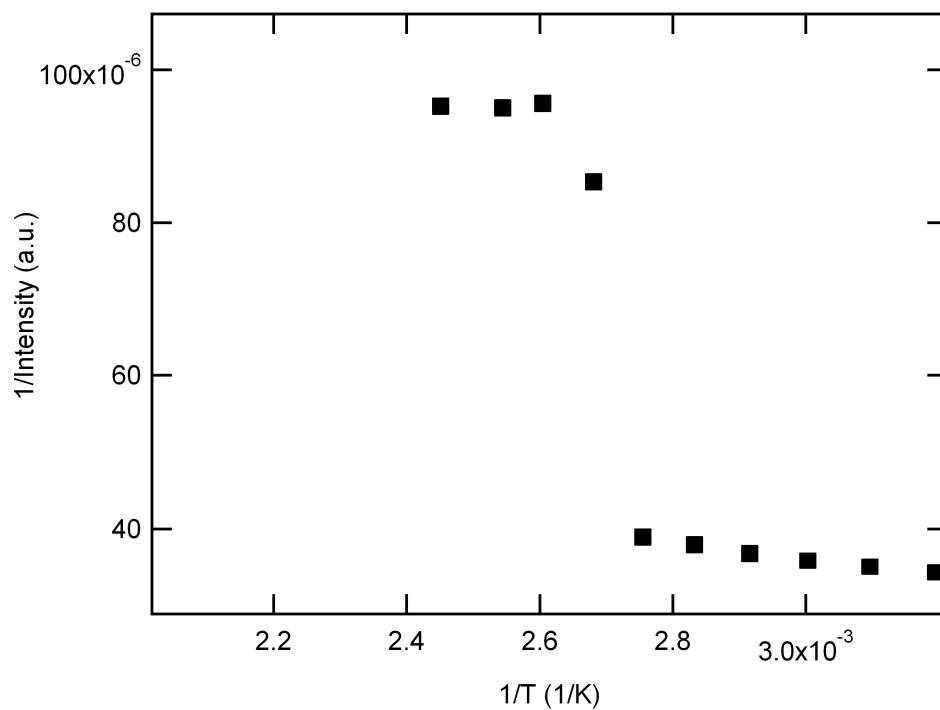


Figure S8. Inverse intensity versus inverse temperature for  $S_{48}(\text{Nme-co-Npe})_{36}$ .

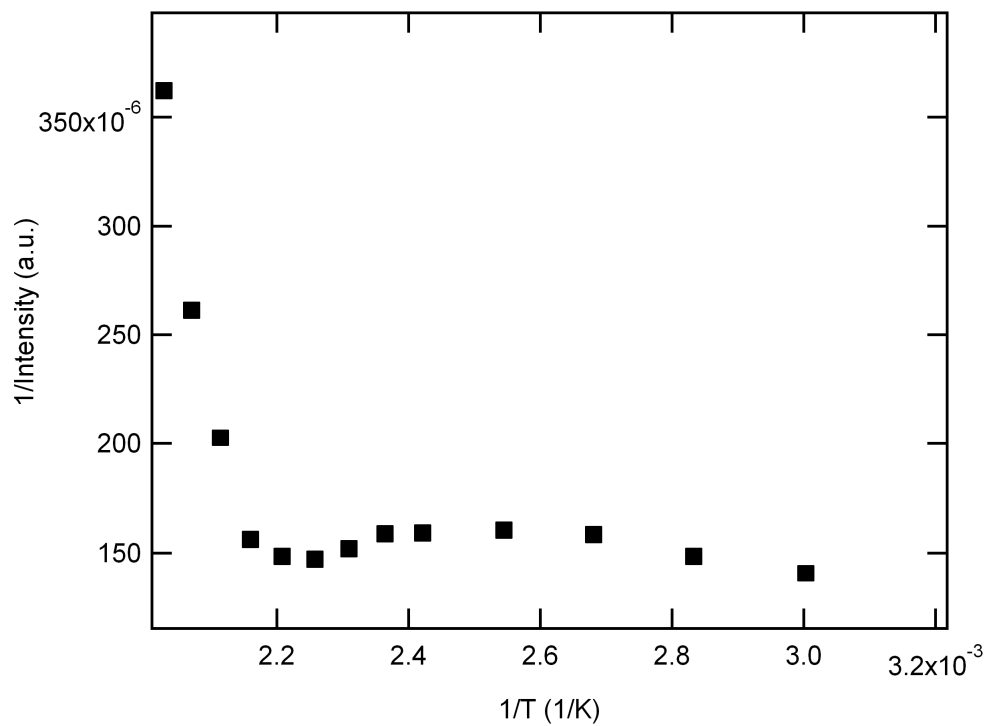


Figure S9. Inverse intensity versus inverse temperature for  $S_{84}(\text{Nme-co-Npe})_{36}$ .