

Supplementary Material (ESI) for Soft Matter
This journal is © The Royal Society of Chemistry 2011

Supporting Information for

Interfiber Interactions Alter Stiffness of Gels Formed by Supramolecular Self-Assembled Nanofibers

Yavuz S. Dagdas, Aysegul Tombuloglu, Ayse B. Tekinay, AykutluDana*, Mustafa O.
Guler*

*UNAM-Institute of Materials Science and Nanotechnology, Bilkent University,
Ankara 06800, Turkey*

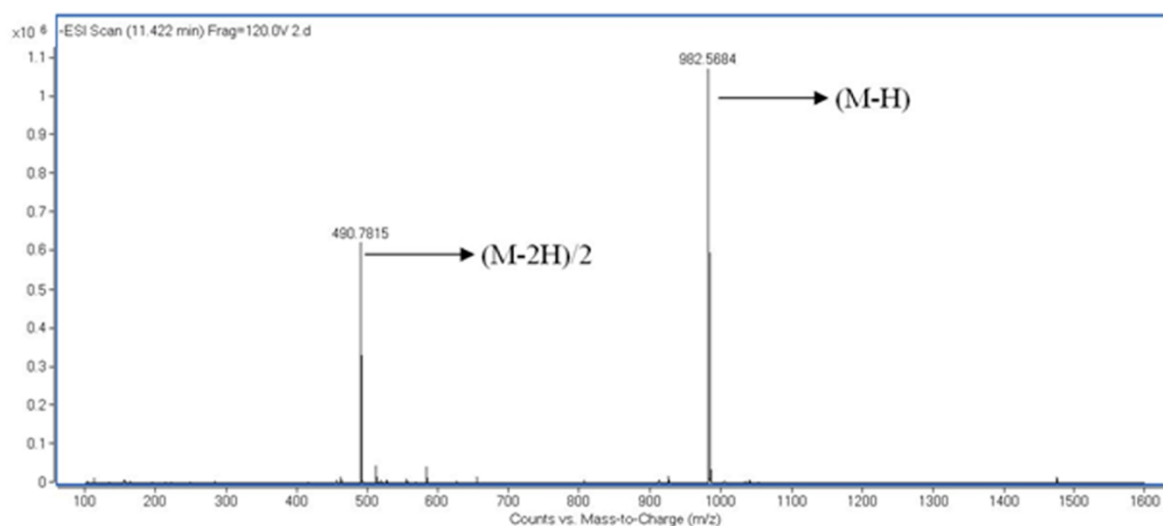


Figure S1. Electrospray ionization mass spectra of the PA.

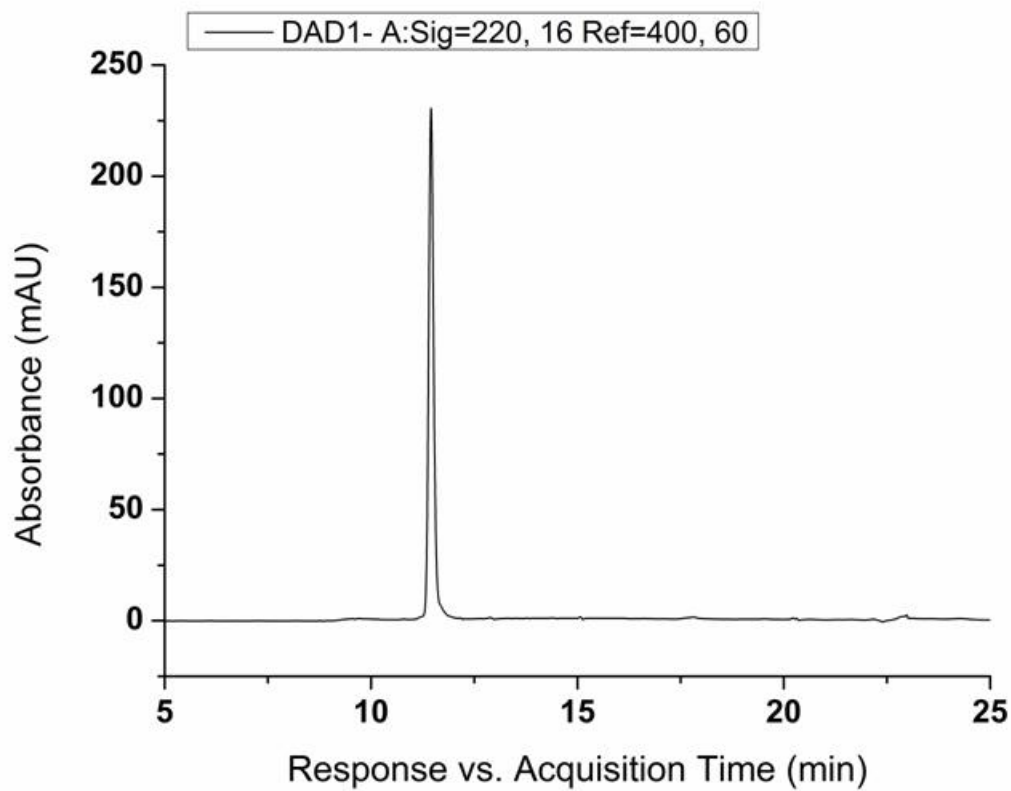


Figure S2. Analytical HPLC trace of the PA.

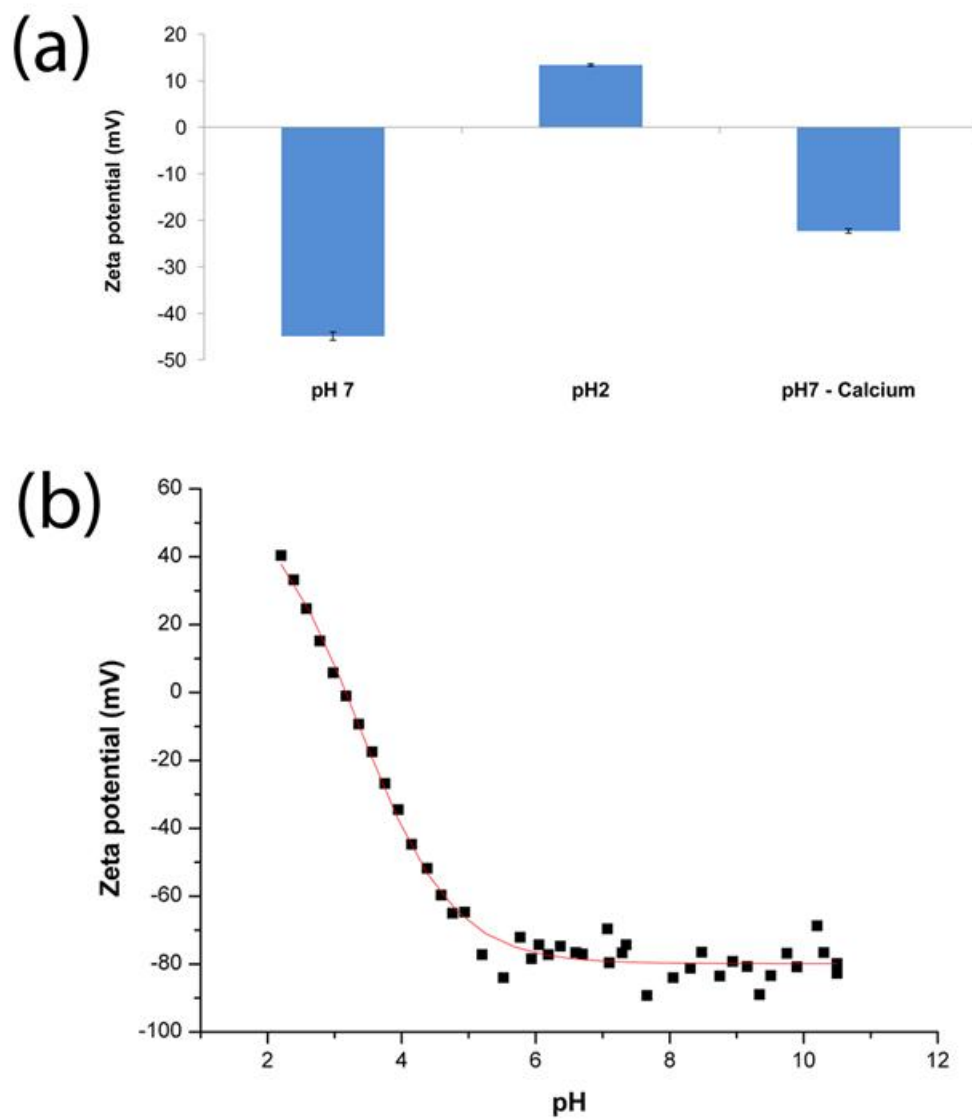


Figure S3. Zeta potential graph of the PA (a) at pH 7, pH 2 and pH 7 with CaCl_2 , (b) at various pH's.

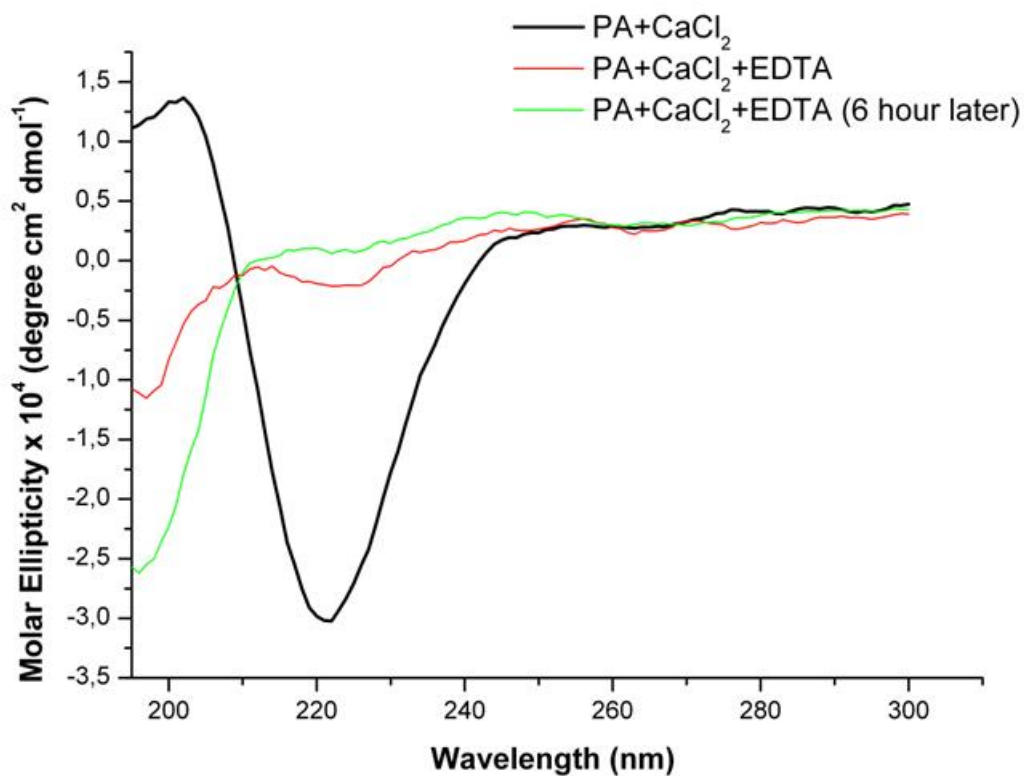


Figure S4. The PA with CaCl₂, addition of EDTA disturbs β-sheet structure immediately, after 6 h random coil becomes the most predominant secondary structure

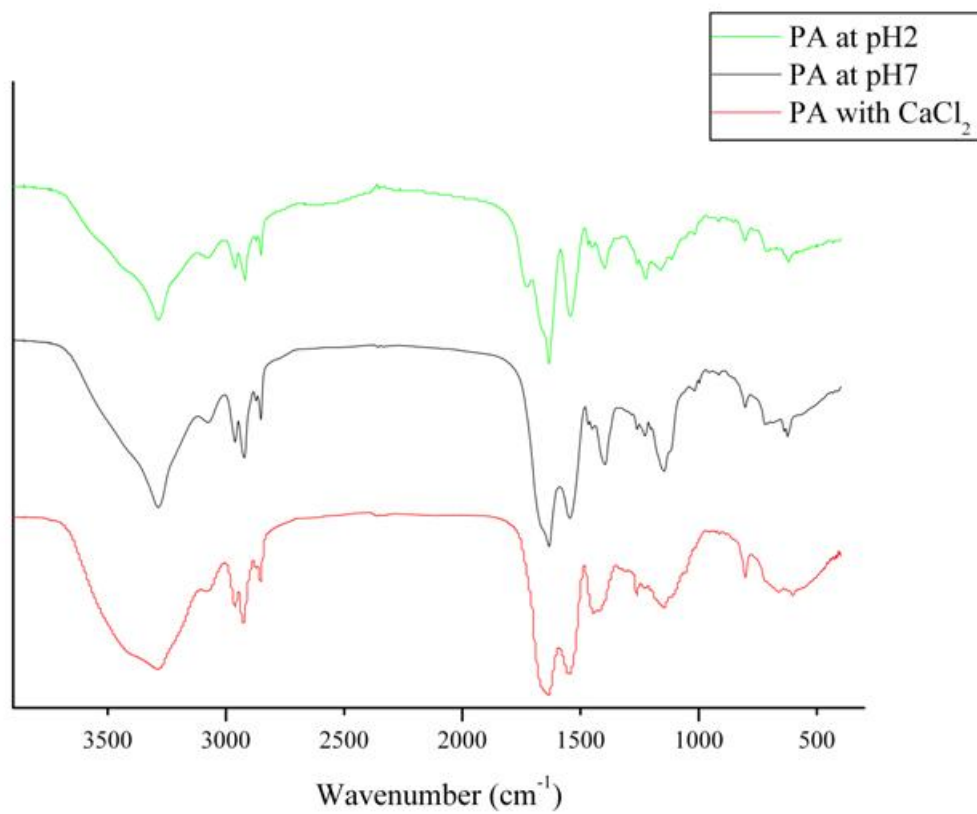


Figure S5. FTIR spectra of lyophilized PA with CaCl₂, PA with HCl, PA at pH 7

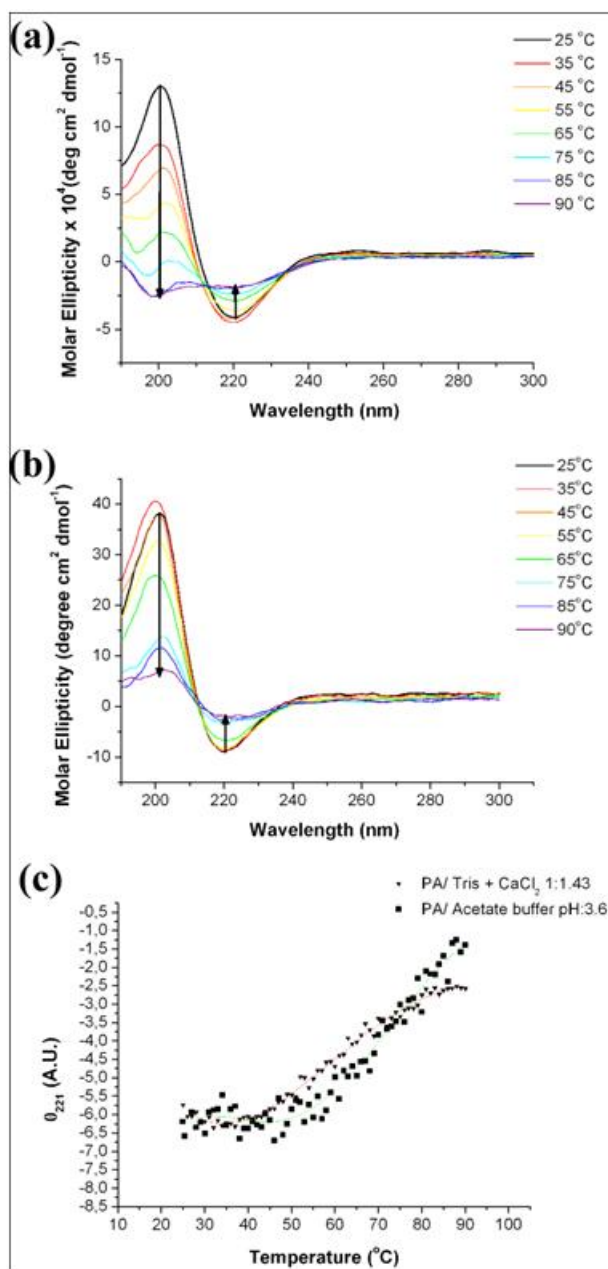


Figure S6. Circular Dichroism spectra of (a) PA with CaCl₂ (1:1.43 molar ratio), (b) PA with acetate buffer (pH 3.6) between 25 °C and 90 °C. (c) Ellipticity at 221 nm for PA with CaCl₂ (1:1.43 molar ratio) and PA with acetate buffer (pH 3.6) monitored between 25 °C and 90 °C.

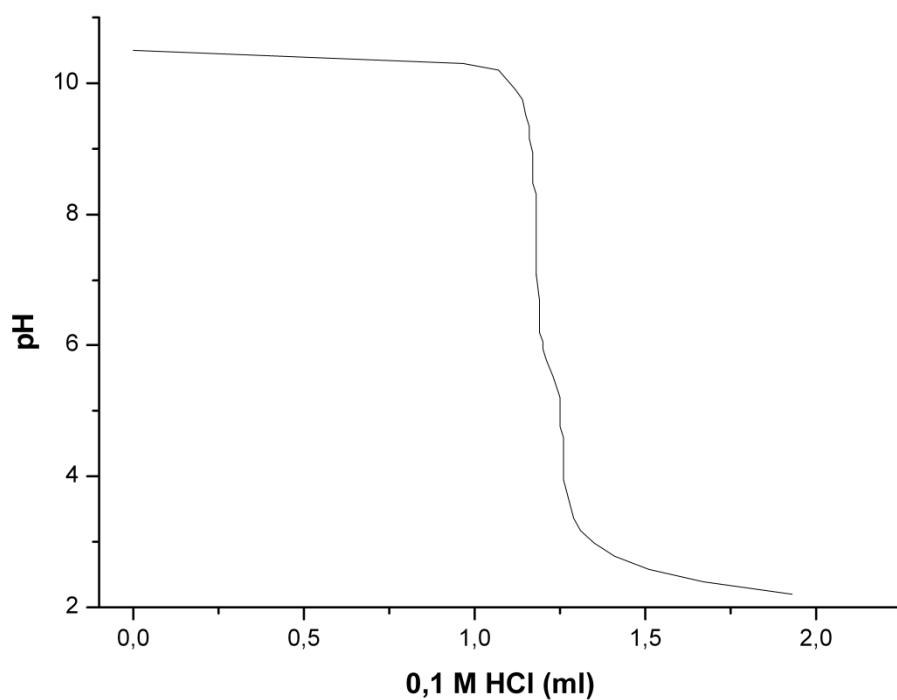


Figure S7. Titration of the PA solution.

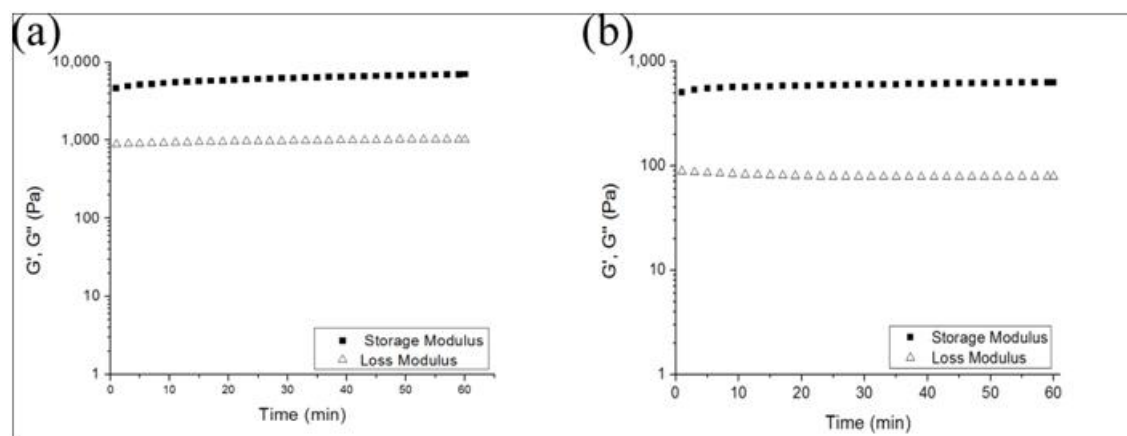


Figure S8. Time sweep oscillatory rheology measurements ($t= 0-60$ min) of PA with CaCl_2 and PA with HCl gels. (16.9 mM PA and 1.6 M HCl or CaCl_2)

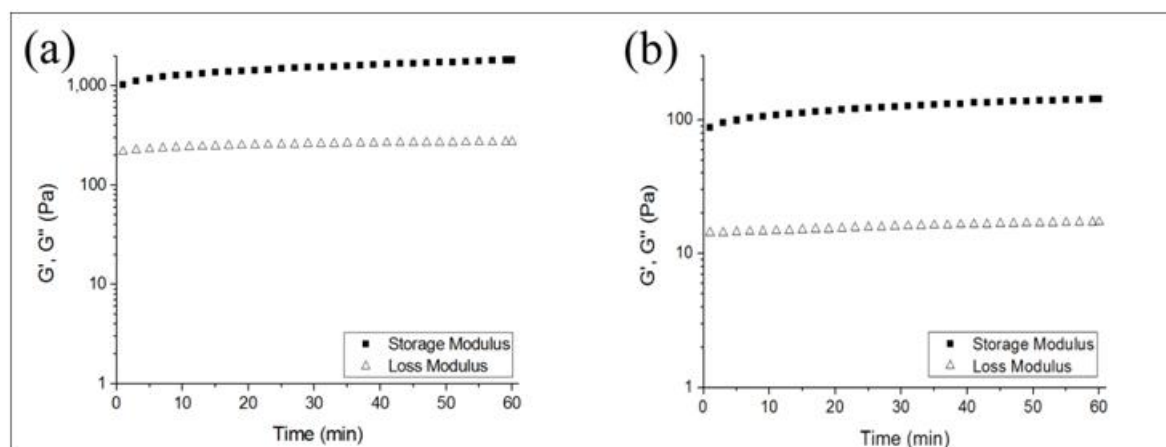


Figure S9. Time sweep oscillatory rheology measurements ($t= 0\text{-}60$ min) of PA with CaCl_2 and PA with HCl gels. (8.5 mM PA and 0.833 M HCl or CaCl_2)

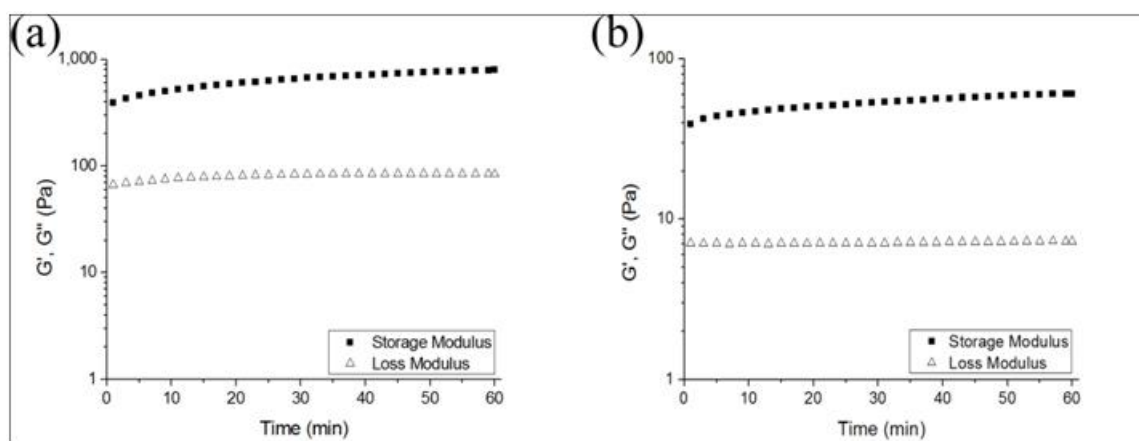


Figure S10. Time sweep oscillatory rheology measurements ($t= 0\text{-}60$ min) of PA with CaCl_2 and PA with HCl gels. (4.2 mM PA and 416.7 mM HCl or CaCl_2)

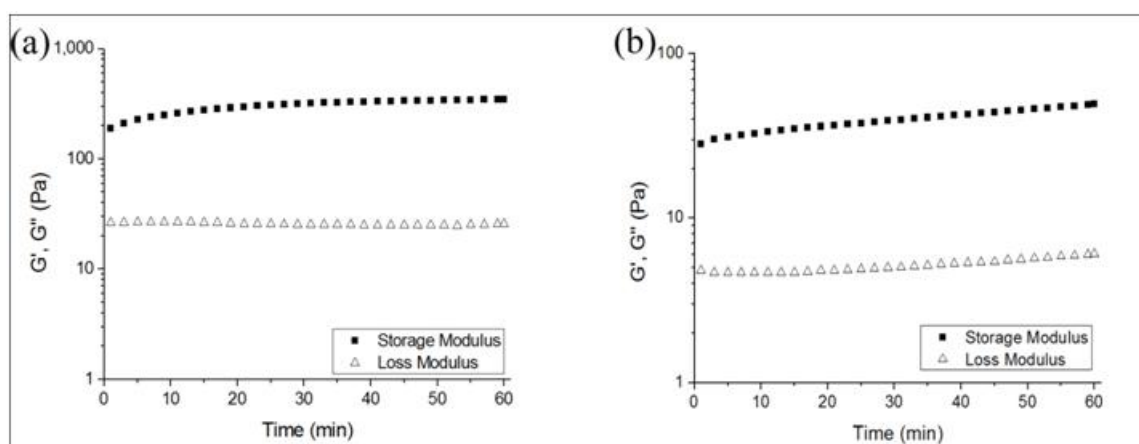


Figure S11. Time sweep oscillatory rheology measurements ($t= 60$ min) of PA with CaCl_2 and PA with HCl gels. (2.1 mM PA and 208.3 mM HCl or CaCl_2)

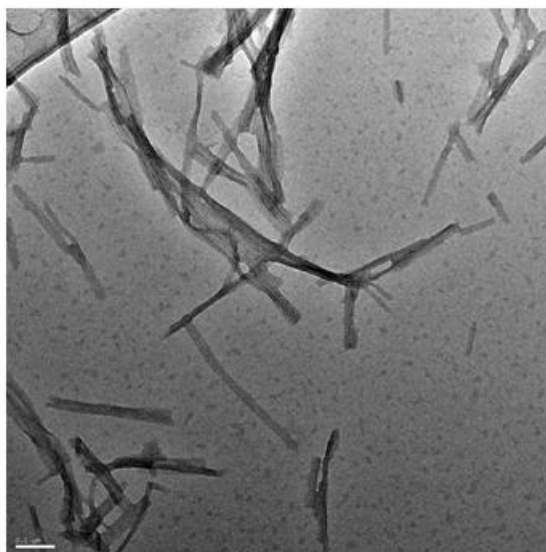


Figure S12. Transmission electron micrographs of PA with CaCl_2 gels.

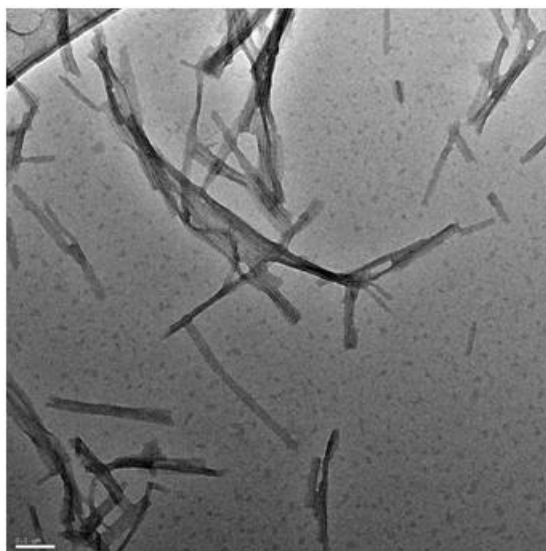


Figure S13. *Transmission electron micrographs of PA with HCl gels*

Table 1. Sample preparation chart for circular dichroism studies at variable temperatures

Sample	Starting concentration of PA	Diluted within	Final concentration of PA	Final concentration of buffer & pH	Final concentration of CaCl ₂
PA/Acetate buffer	1.05 mM	2.055 mM Sodium acetate buffer	0.028 mM	2mM Sodium acetate buffer (pH 3.6)	-
PA/HCl	1.05 mM	10.3 mM HCl	0.028 mM	pH 2	-
PA/Tris + CaCl ₂	1.05 mM	11.5 mM Tris buffer + 0.807 mM CaCl ₂	0.14 mM	10 mM Tris buffer (pH 7.4)	0.7 mM
PA/Tris + CaCl ₂	1.05 mM	11.5 mM Tris buffer + 0.231 mM CaCl ₂	0.14 mM	10 mM Tris buffer (pH 7.4)	0.2 mM

All PA gels were formed by 125 µl of PA solution and 25 µl of gelling solution with a final volume of 150 µl.

Table 2. Concentration of PA and gelator (HCl or CaCl₂) for different time sweep rheology experiments.

Initial PA Concentration (mM)	Final PA Concentration (mM)	Initial Gelator Concentration (mM)	Final Gelator Concentration (mM)
20	16.9	2000	1666.7
10	8.5	1000	833.3
5	4.2	500	416.7
2.5	2.1	250	208.3