Rationally Designed Helical Nanofibers *via* Multiple Non-Covalent Interactions: Fabrication and Modulation

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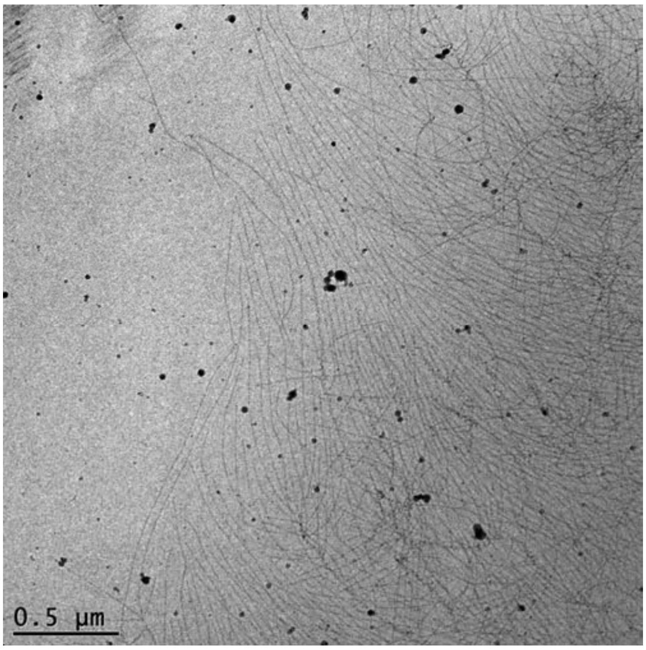

Fig. S1 Low magnified cryo-TEM image of double helix in C_4AG solution.

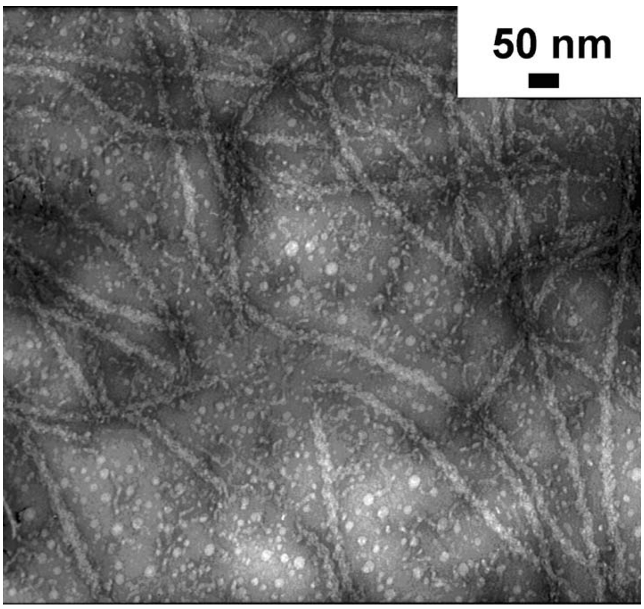

Fig. S2 Negative-staining TEM of helical nanofibers at 50 ^{o}C.

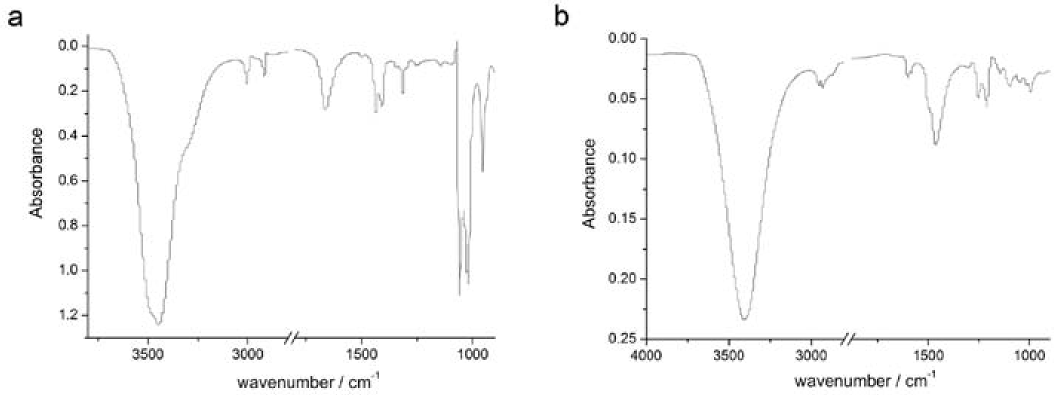

Fig. S3 IR absorbance of C_4AG solution in DMSO (left) and C_4AG hydrogel in D_2O (right).

The existence of hydrogen-bonding interaction was demonstrated by FT-IR (Figure S3).

(1) The IR spectrum of C_4AG solution in DMSO was given in Fig S3a, in which hydrogel or nanofibers are not observed. From Fig S3a, a broad intense O-H stretch at 3440 cm^{-1} can be seen.

(2) The IR spectrum of C_4AG solution in D_2O was given in Fig S3b, in which hydrogel or nanofibers are observed. The effect of the hydrogen-bonding interaction was demonstrated from Fig S3b, in which the O-H stretch band becoming stronger in intensity and slightly shifting to 3400 cm^{-1}. Therefore, a hydrogen bonding interaction on the sugar moieties is believed to exist.

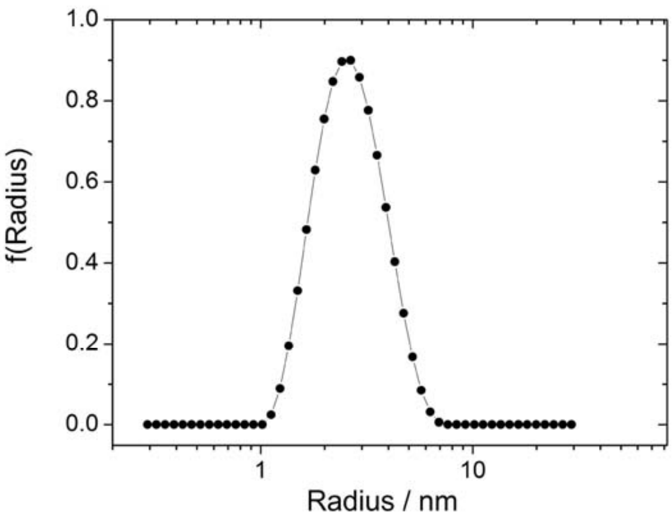

Fig. S4 Dynamic light scattering of C_4AG solution under acid condition indicating the existence of small micelles.

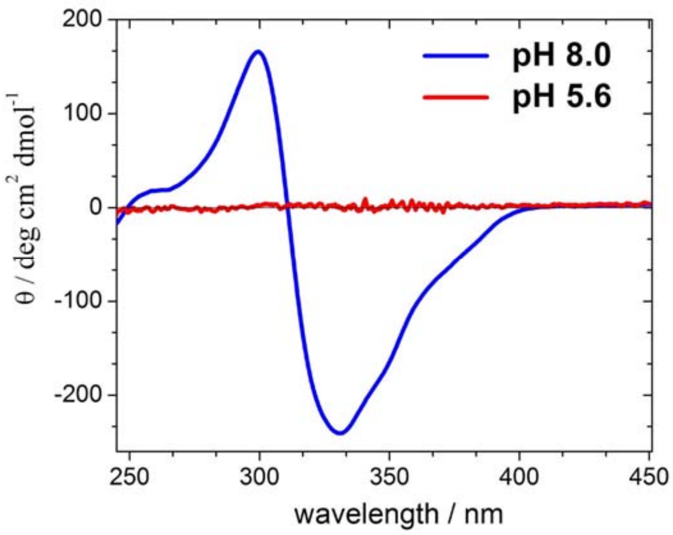

Fig. S5 CD spectrum of C_4AG solution at pH 5.6 and 8.0.