Supporting Information

Effects of Hydrogen Bonds on the Single-Chain Mechanics of Chitin

Lu Qian [b], Xin Guo[a], Kai Zhang[a], Miao Yu [a, *]

a School of Mechanical Engineering, Sichuan University, Chengdu 610065, China;

b School of Materials Science and Engineering, South China University of Technology, Guangzhou 510641, China; qianlu@scut.edu.cn (L.Q.)

* Correspondence: miaoyu@scu.edu.cn; Tel.: +86-28-85405307

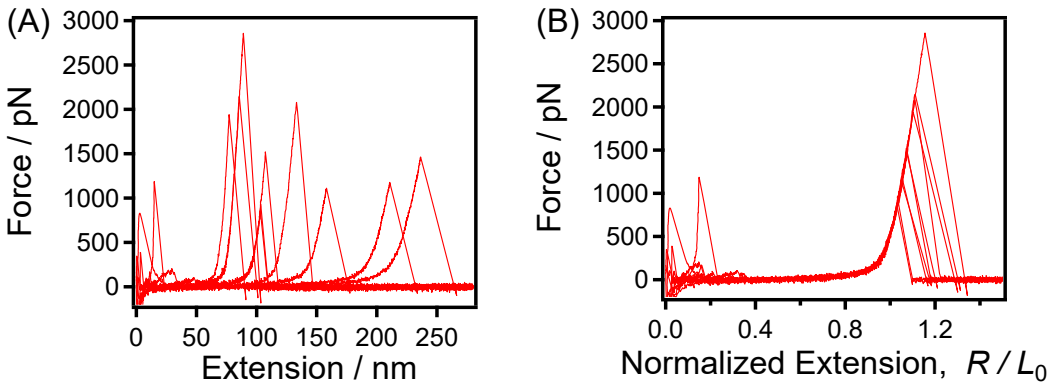

Fig. S1 (A) Ten F-E curves of chitin obtained in nonane. (B) Normalized F-E curves of chitin obtained in nonane (the force for normalization is 1000 pN).

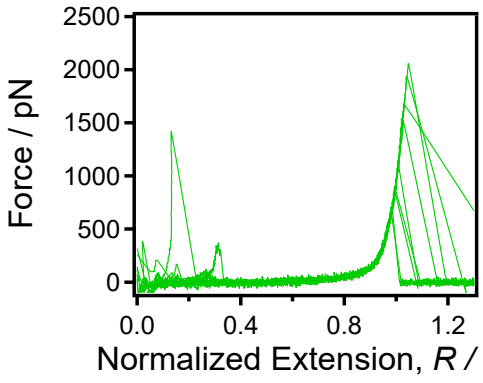

Fig. S2 Normalized F-E curves of chitin obtained in DMSO (the force for normalization is 1000 pN).

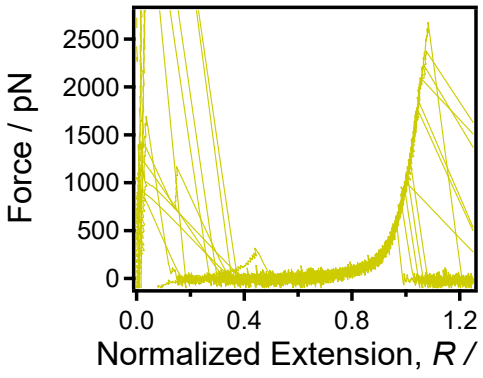

Fig. S3 Normalized F-E curves of cellulose obtained in nonane (the force for normalization is 1000 pN).

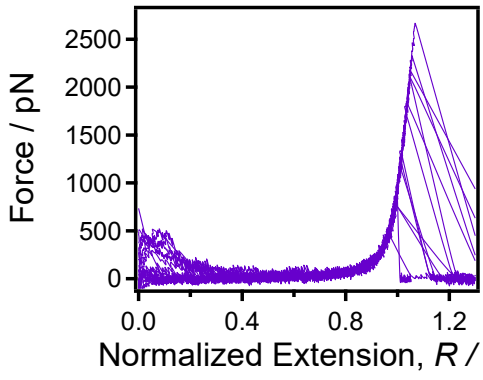

Fig. S4 Normalized F-E curves of cellulose obtained DMSO (the force for normalization is 1000 pN).

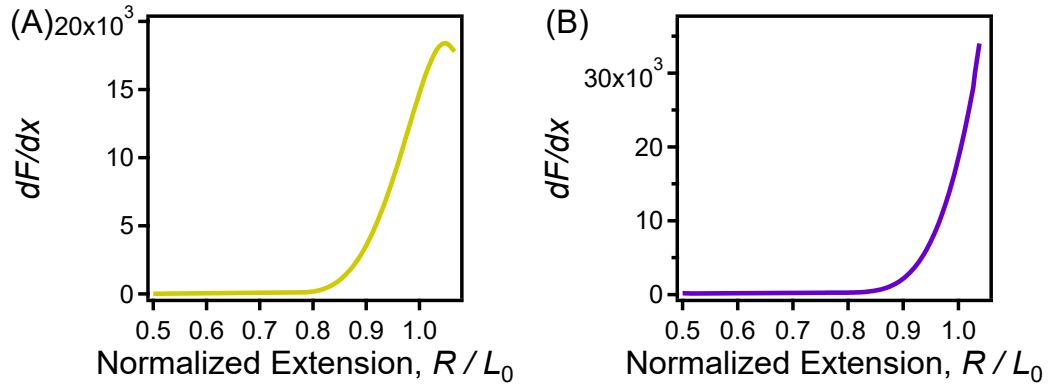

Fig. S5 (A) The *dF/dx* of the polynomial fitting curve that shown in Fig. 4A (the F-E curves of chitin and cellulose obtained in nonane). (B) The *dF/dx* of the polynomial fitting curve that shown in Fig. 4B (the F-E curves of chitin and cellulose obtained in DMSO).

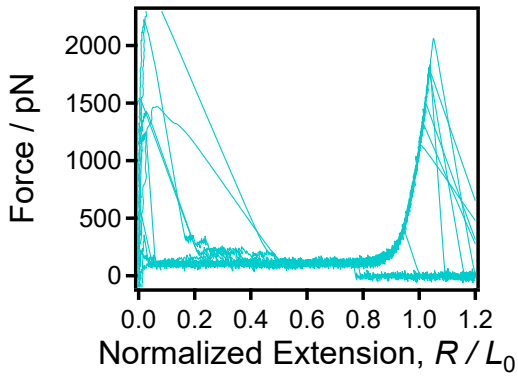

Fig. S6 Normalized F-E curves of cellulose obtained water (the force for normalization is 1000 pN).

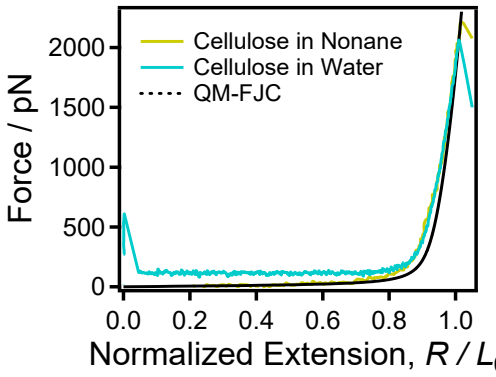

Fig. S7 Comparison of renormalized (at 2000 pN) F-E curves of cellulose obtained in nonane (yellow solid line), water (bright blue solid line) and the QM-FJC model (black dashed line).

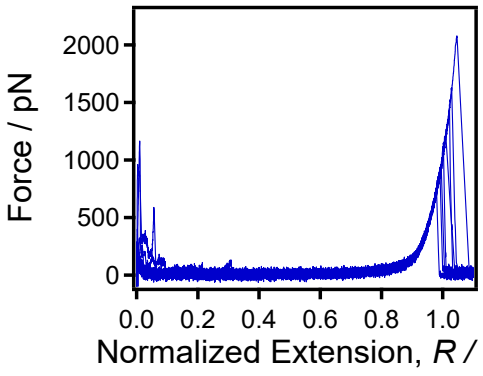

Fig. S8 Normalized F-E curves of chitin obtained water (the force for normalization is 1000 pN).

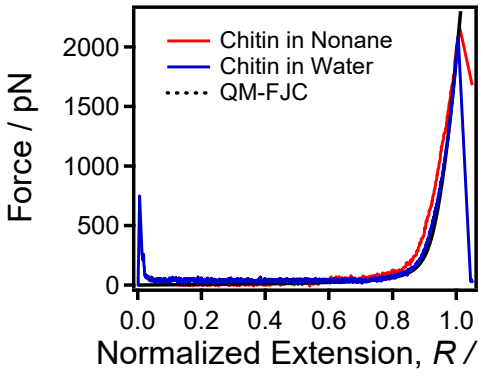

Fig. S9 Comparison of renormalized (at 2000 pN) F-E curves of chitin obtained in nonane (red solid line), water (blue solid line) and the QM-FJC model (black dashed line).

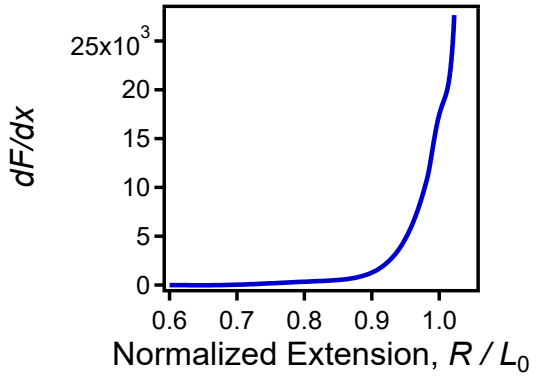

Fig. S10 The *dF/dx* of the polynomial fitting curve that the F-E curve of chitin obtained in water.

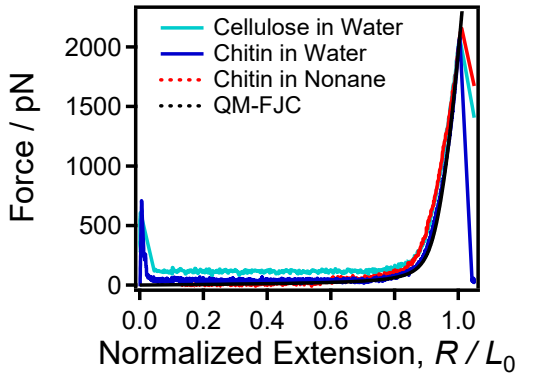

Fig. S11 Comparison of renormalized (at 2000 pN) F-E curves of chitin obtained in nonane (red solid line), water (blue solid line) and the QM-FJC model (black dashed line).