

Conformation of Crystalline and Noncrystalline
Domains in [3- ^{13}C]Ala, [3- ^{13}C]Ser, and [3- ^{13}C]Tyr-
Bombyx mori Silk Fibroin in a Hydrated State
studied with ^{13}C DD/MAS NMR

Tetsuo Asakura, Kotaro Isobe, Akihiro Aoki, and Shunsuke Kametani*

Department of Biotechnology, Tokyo University of Agriculture and Technology,

Koganei, Tokyo 184-8588 Japan

* To whom correspondence should be addressed (Tel & Fax, 81-42-383-7733) email: (TA)
asakura@cc.tuat.ac.jp

Supporting Information

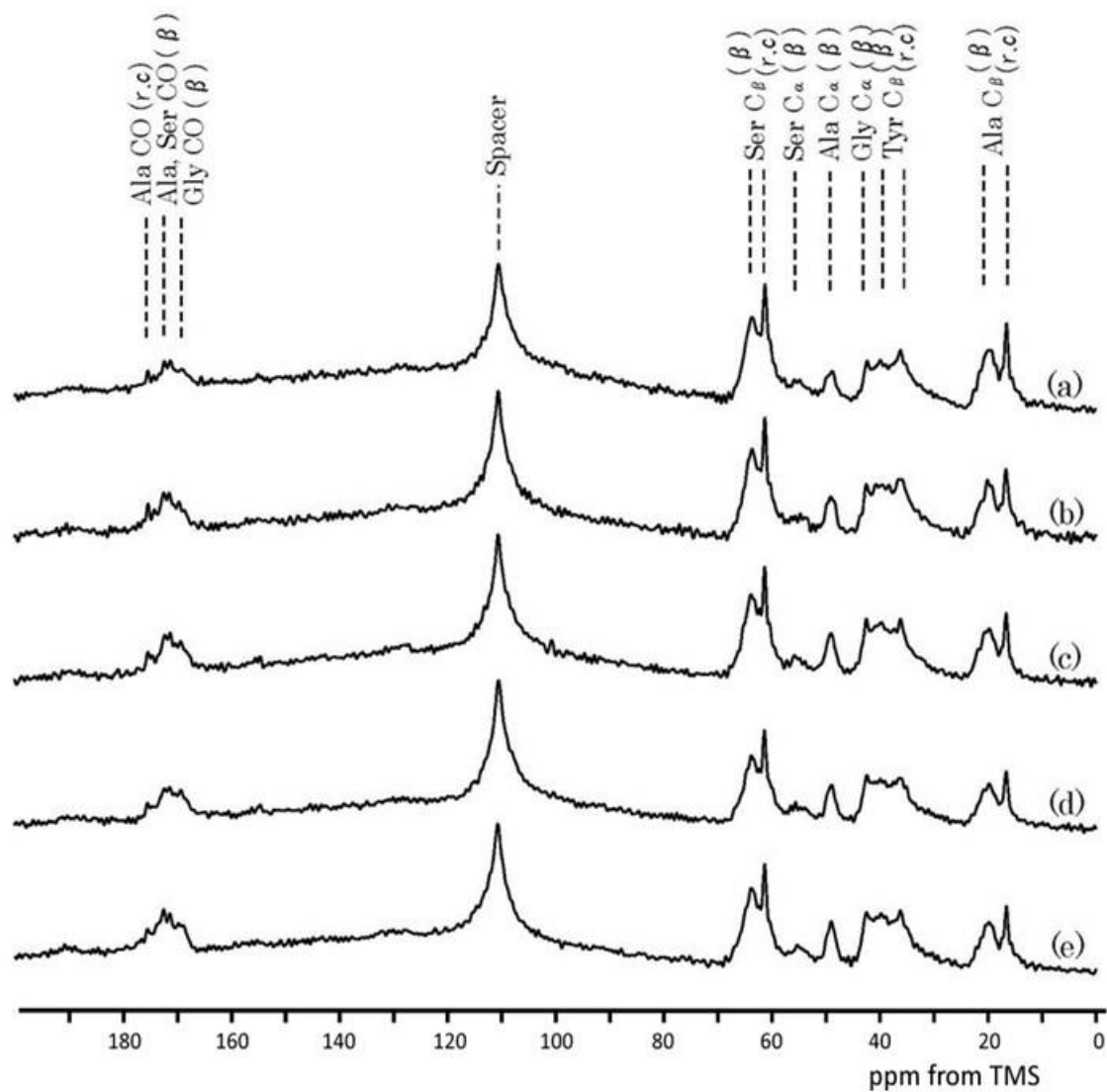


Figure S-1 ^{13}C DD/MAS spectra of ^{13}C labeled *B. mori* silk fibroin fiber in a wet state observed with different recycle delay, (a)4s (b)10s (c)15s (d)20s and (e)25s.

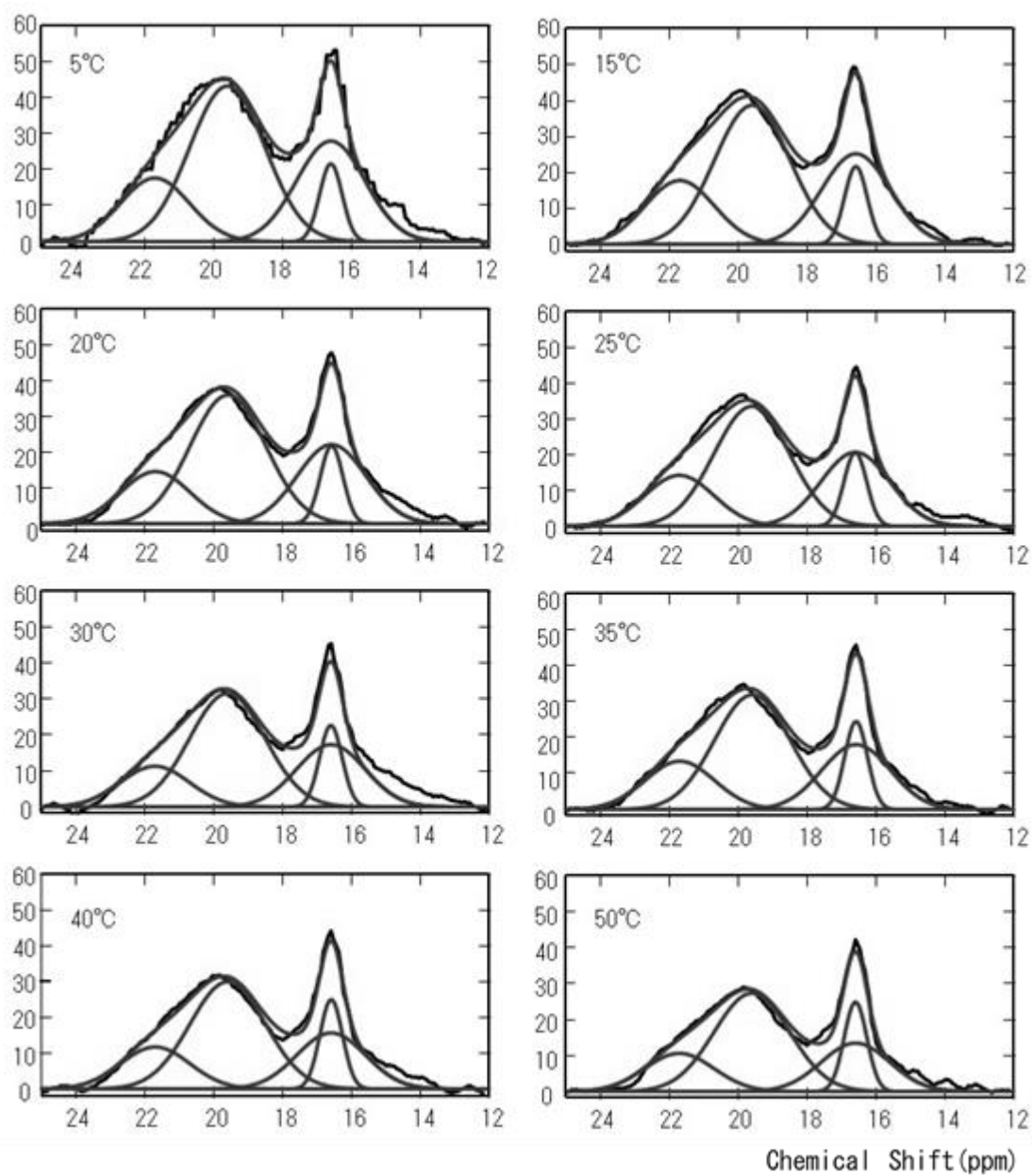


Figure S-2 Simulations of Ala C β peaks observed as a function of temperature (5°C to 50°C).

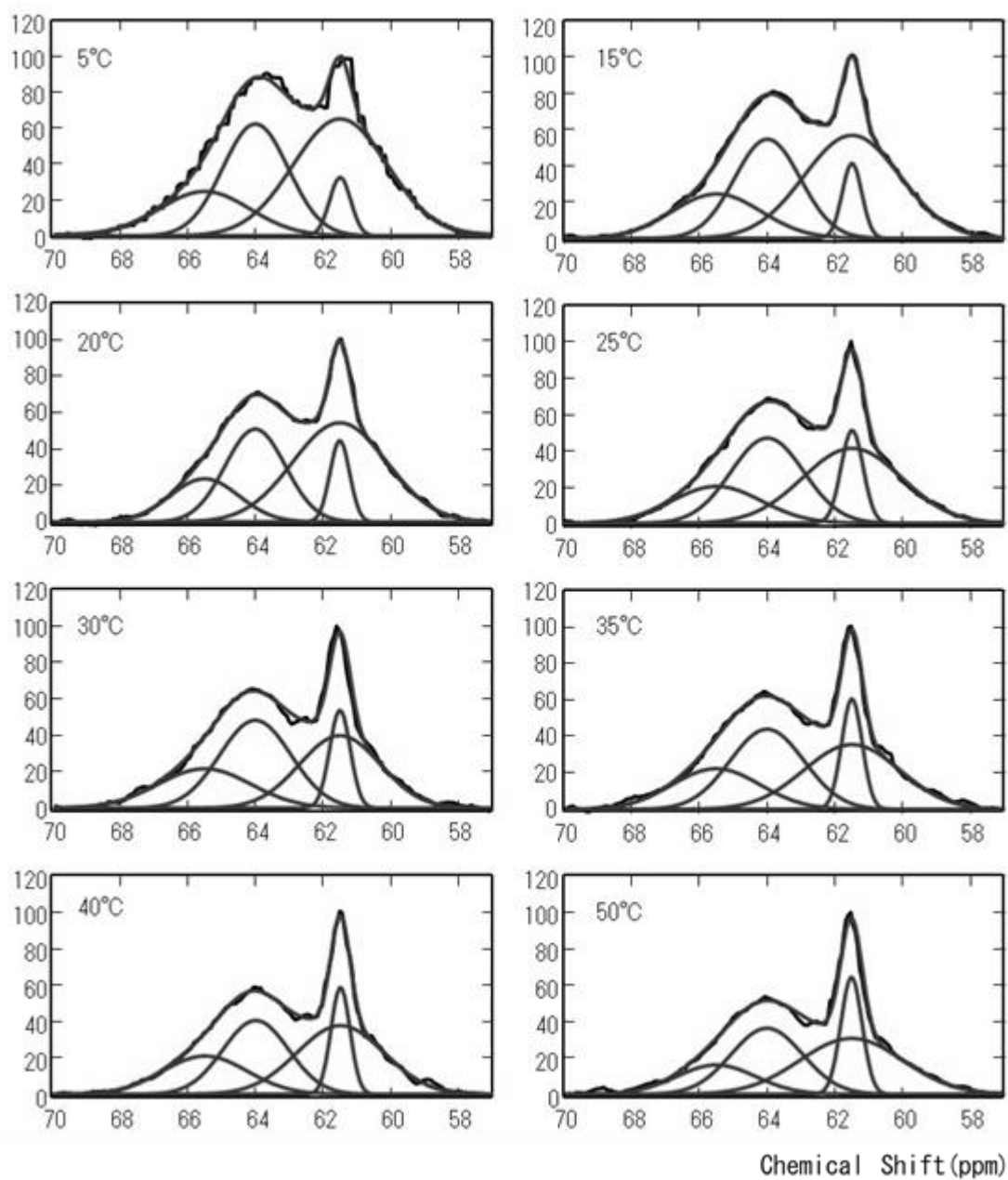


Figure S-3 Simulations of Ser C β peaks observed as a function of temperature (5°C to 50°C).

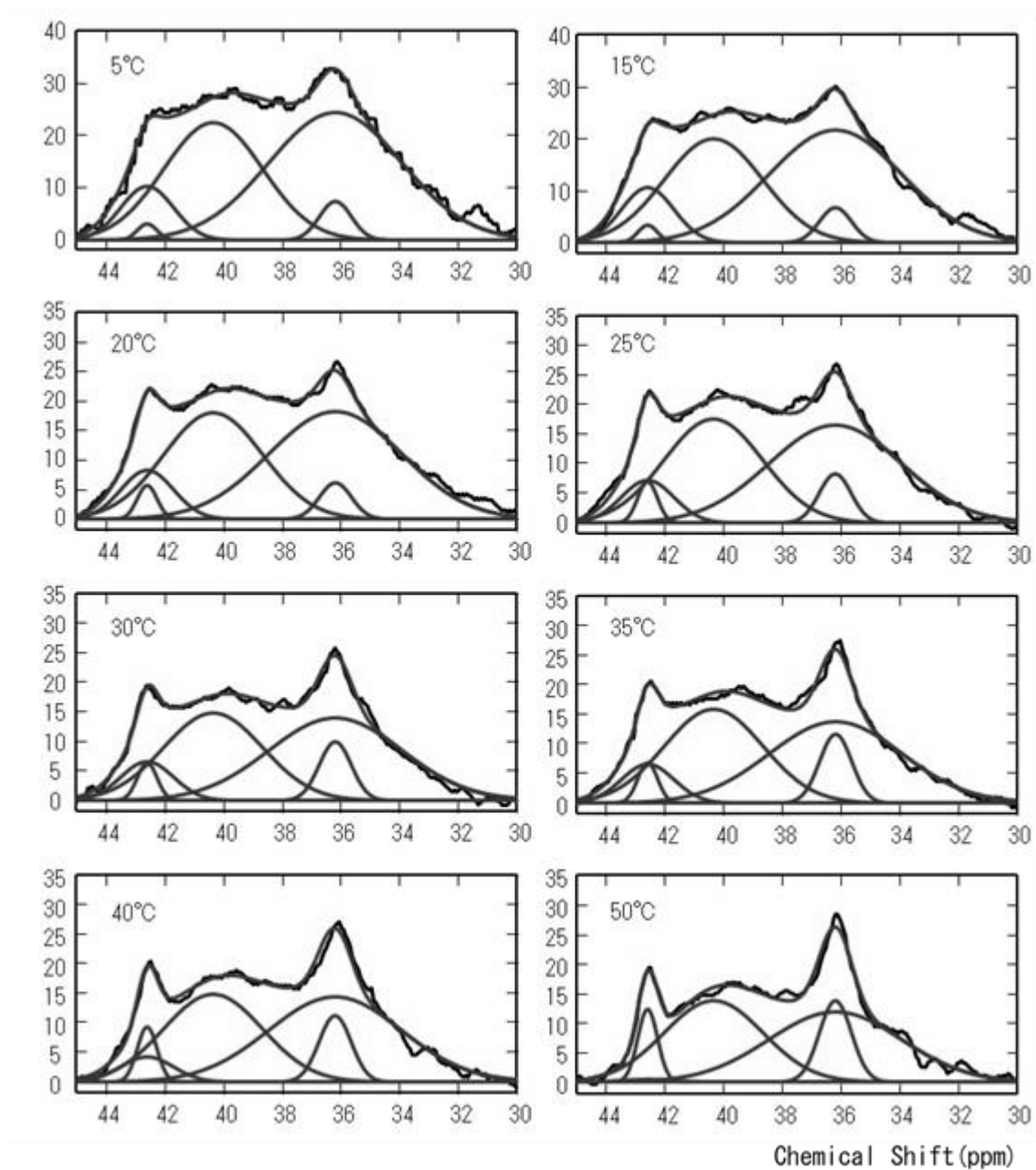


Figure S-4 Simulations of Tyr C β peaks observed as a function of temperature (5°C to 50°C).

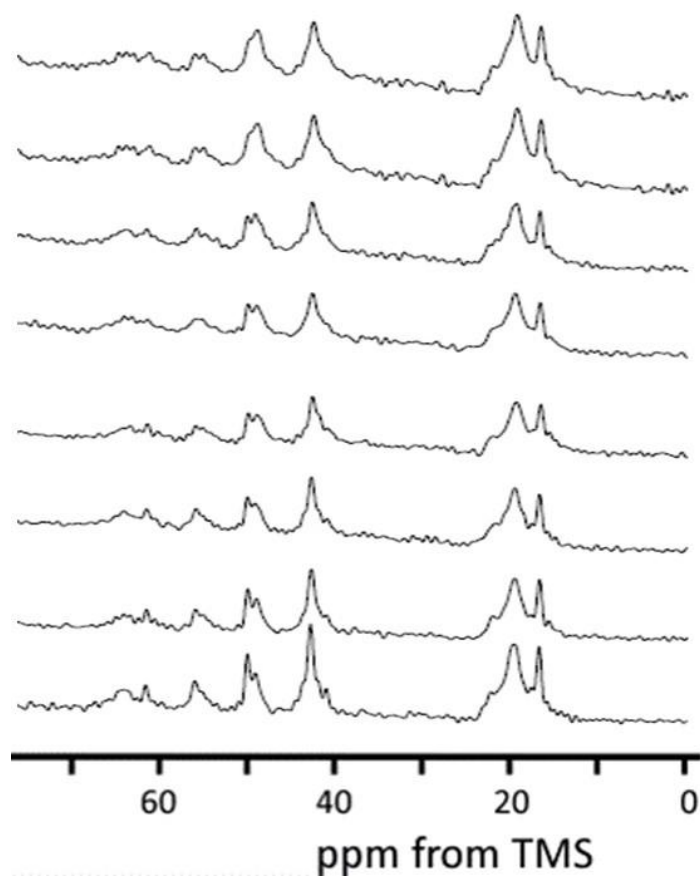


Figure S-5 Temperature dependence of ^{13}C DD/MAS NMR spectra of $[\text{U}-^{13}\text{C}]$ crystalline fraction powder of *B. mori* silk fibroin in a wet state observed at (a)5°C, (b)15°C, (c)20°C, (d)25°C, (e)30°C, (f)35°C, (g)40°C and (h)50°C.

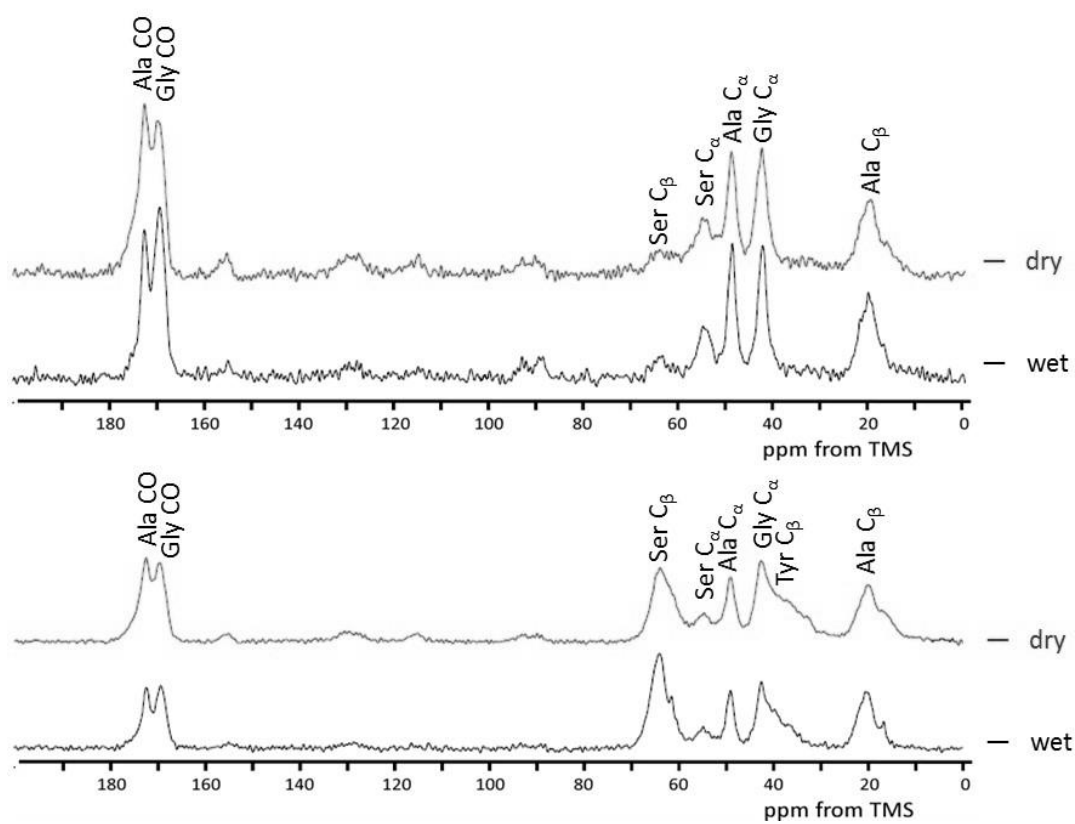


Figure S-6 ^{13}C CP/MAS NMR spectra of non-labeled (upper two spectra) and $[3-^{13}\text{C}]\text{Ala}$, $[3-^{13}\text{C}]\text{Ser}$ and $[3-^{13}\text{C}]\text{Tyr-}B. \text{mori}$ silk fibroin fiber (lower two spectra) in dry and in a wet state.