## **Supporting Information**

The N-terminal Domain of  $A\beta_{40}$ -Amyloid Fibril: The MOMD Perspective of its Dynamic Structure from NMR Lineshape Analysis

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Figure S1. Schematic of the  $\tau$ -histidine molecule.



**Figure S2.** Experimental <sup>2</sup>H lineshapes from the  $C^{\alpha}$ – $C^{\beta}D_3$  probe of residue A2 (left) and the (N-ring)–CD<sub>3</sub> probe of residue  $\tau$ -H6 at the temperatures given in the figure. Reproduced with permission from Au, D. F.; Ostrovsky, D.; Fu, R.; Vugmeyster, L. Solid-State NMR Reveals a

Comprehensive View of the Dynamics of the Flexible Disordered N-Terminal Domain of Amyloid- $\beta$  Fibrils. J. Biol. Chem. 2019, 294, 5840-5853, Copyright 2019 of the American Society for Biochemistry and Molecular Biology.



**Figure S3.** Experimental <sup>2</sup>H lineshapes from the C<sup> $\alpha$ </sup>-phenyl- $d_5$  probe of residue F4 (left) and the C<sup> $\alpha$ </sup>-D probe of residue G9 (right) at the temperatures given in the figure. Reproduced with permission from Au, D. F.; Ostrovsky, D.; Fu, R.; Vugmeyster, L. Solid-State NMR Reveals a

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**Figure S4.** Experimental <sup>2</sup>H lineshapes from the  $C^{\alpha}$ – $C^{\beta}D_3$  probe of residue A2 (left) and the C<sup> $\alpha$ </sup>–phenyl- $d_5$  probe of residue F4 (right) at the temperatures given in the figure. Reproduced with permission from Au, D. F.; Ostrovsky, D.; Fu, R.; Vugmeyster, L. Solid-State NMR Reveals

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