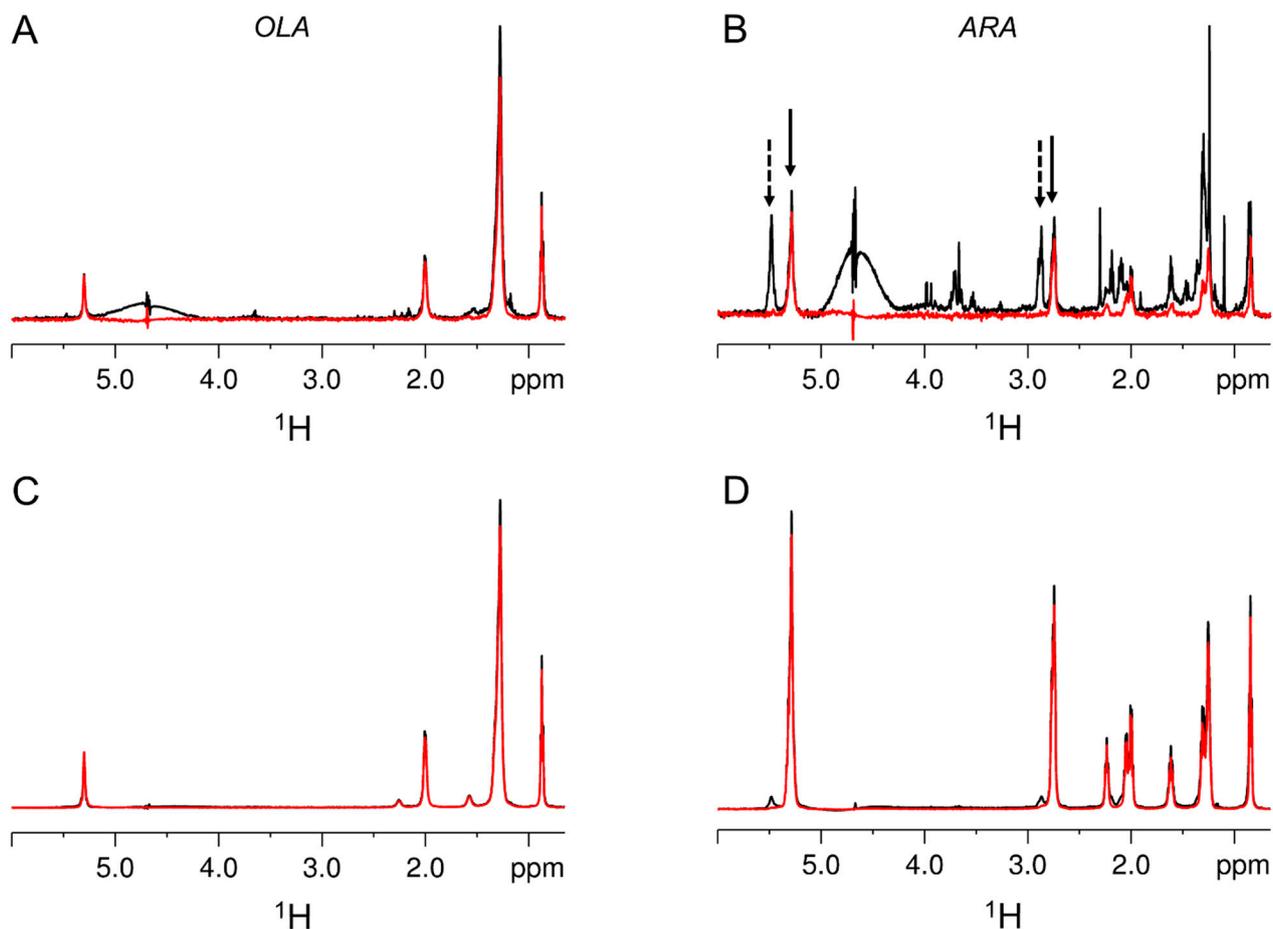
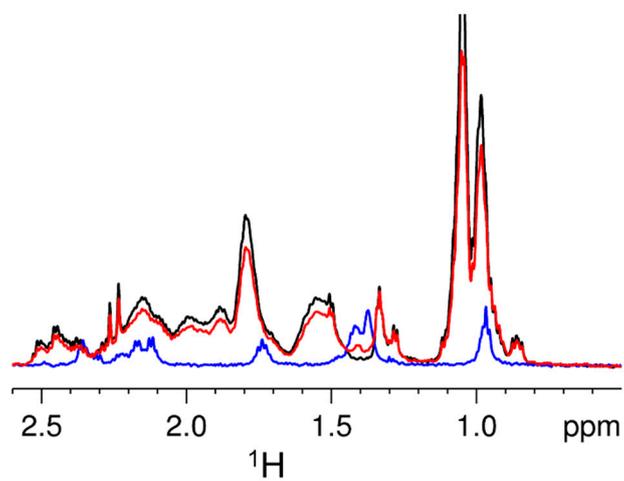


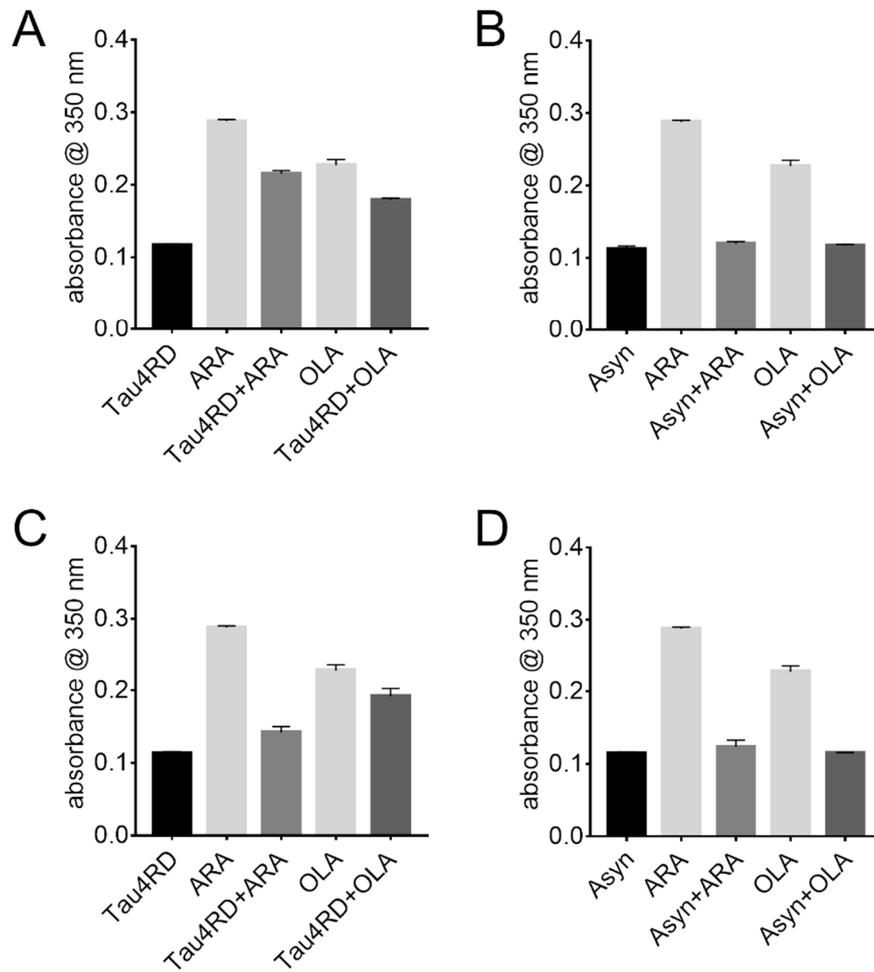
SUPPORTING DATA



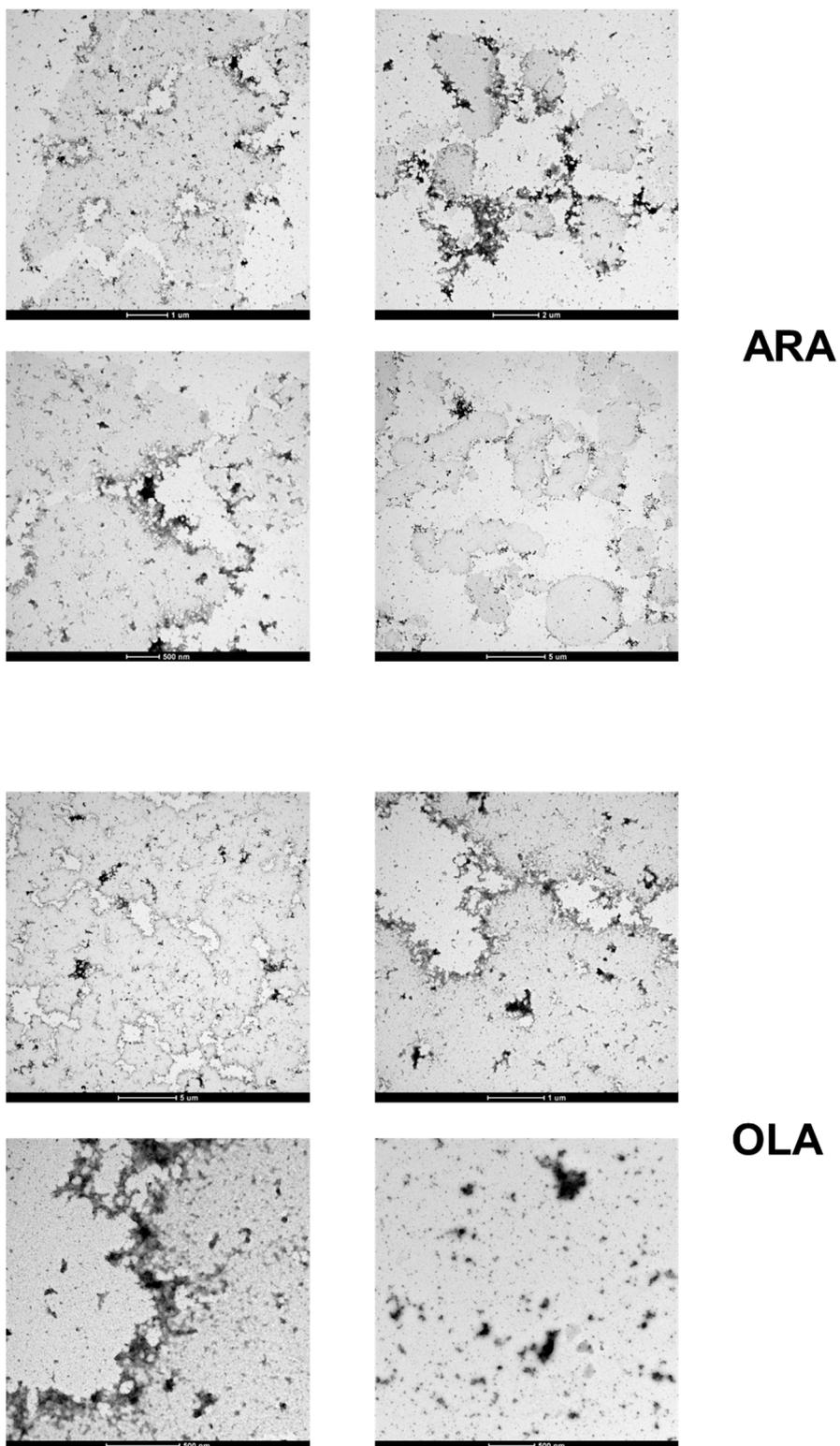
**Figure S1.** *Translational diffusion of fatty acids.* The displayed NMR diffusion spectra were recorded with 5% (black) and 95% (red) of the maximum gradient strength (53.5 G/cm) and a diffusion delay of 200 ms. The samples contained 75  $\mu$ M OLA (A), 75  $\mu$ M ARA (B), 500  $\mu$ M OLA (C), or 500  $\mu$ M ARA (D). Peaks indicated by dashed (solid) arrows are assigned to ARA monomers (micelles). The measurement temperature was 37  $^{\circ}$ C.



**Figure S2.** <sup>1</sup>H-NMR profiles of Tau<sup>4RD</sup> and ARA at 20 mM NaCl concentration. High-field portion of <sup>1</sup>H-NMR spectra of 25 μM Tau<sup>4RD</sup> (black), 75 μM ARA (blue), and 25 μM Tau<sup>4RD</sup> mixed with 75 μM ARA (red). Measurements were performed at 37 °C.

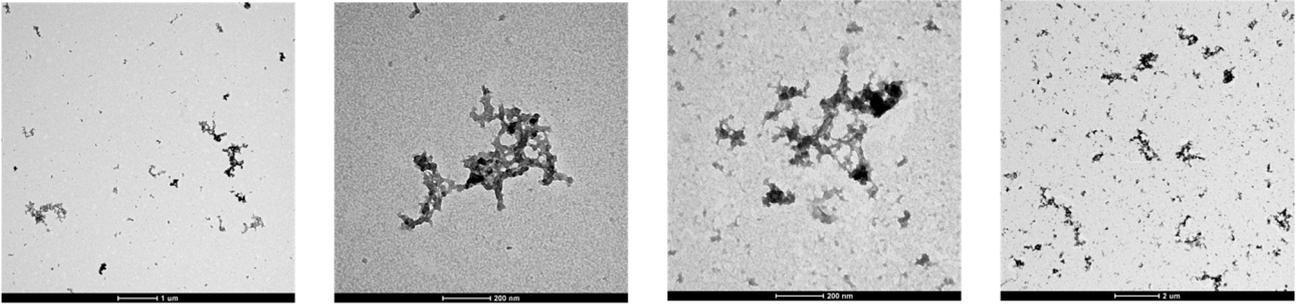


**Figure S3. Turbidity assay.** A,B) Samples contained 10  $\mu$ M protein and 300  $\mu$ M FA. C,D) Samples contained 100  $\mu$ M protein and 300  $\mu$ M FA. The turbidity was measured at 350 nm and the measurement temperature was 30  $^{\circ}$ C.

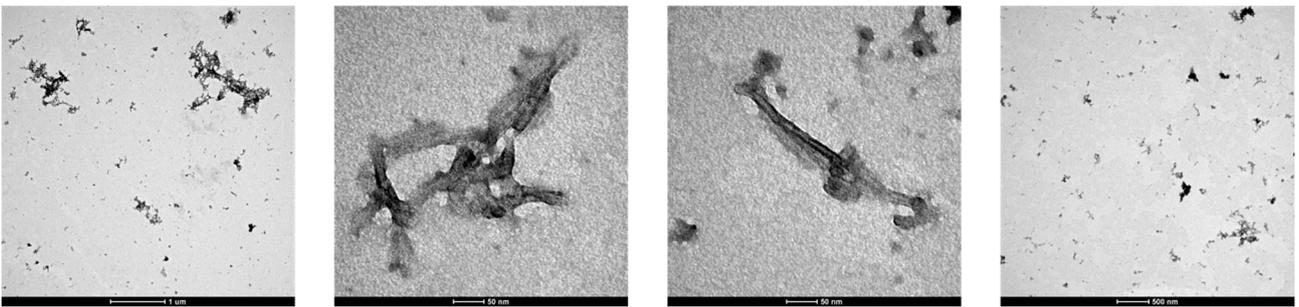


**Figure S4.** TEM images of FA samples. TEM micrographs were taken on FA samples incubated for 24 h at 30 °C under intermittent shaking.

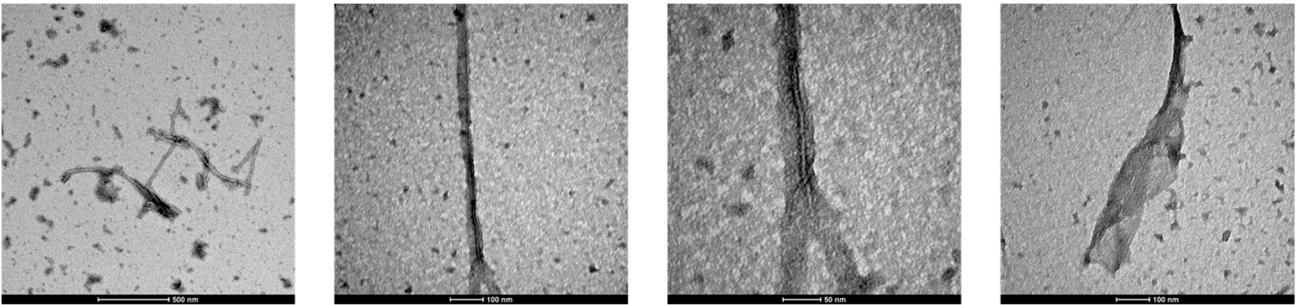
**10  $\mu\text{M}$  Tau<sup>4RD</sup> + 30  $\mu\text{M}$  ARA**



**10  $\mu\text{M}$  Tau<sup>4RD</sup> + 300  $\mu\text{M}$  ARA**

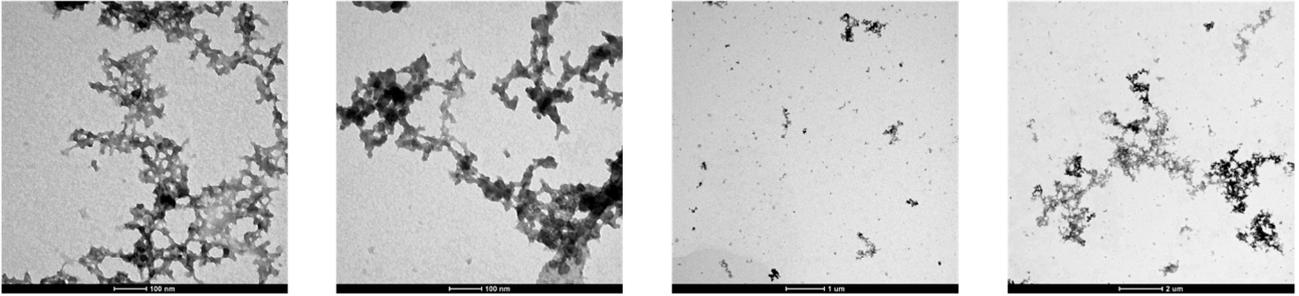


**100  $\mu\text{M}$  Tau<sup>4RD</sup> + 300  $\mu\text{M}$  ARA**

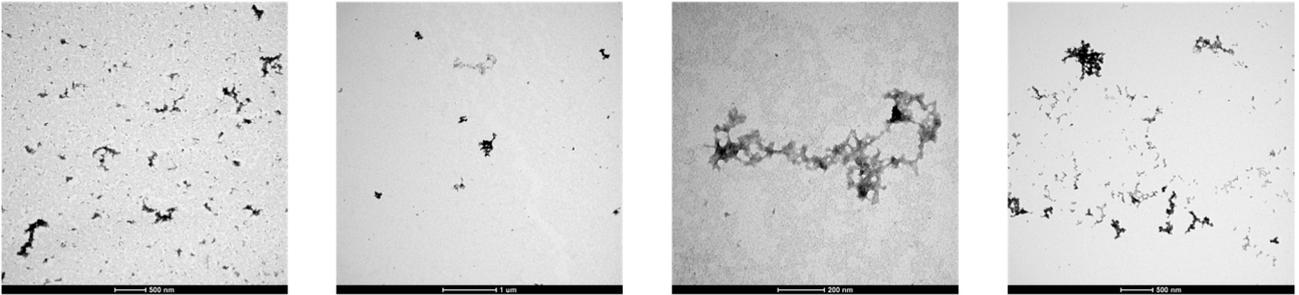


**Figure S5.** TEM images of Tau<sup>4RD</sup>/FA samples. TEM micrographs were taken on Tau<sup>4RD</sup>/ARA samples incubated for 24 h at 30 °C under intermittent shaking.

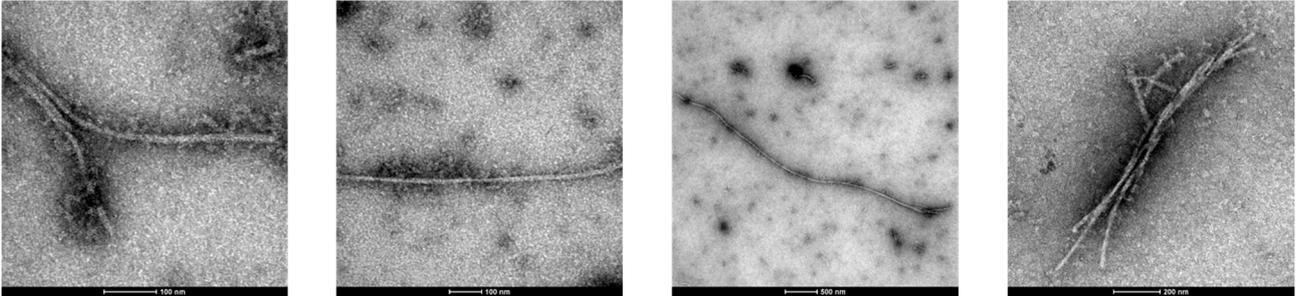
**10  $\mu\text{M}$  Tau<sup>4RD</sup> + 30  $\mu\text{M}$  OLA**



**10  $\mu\text{M}$  Tau<sup>4RD</sup> + 300  $\mu\text{M}$  OLA**



**100  $\mu\text{M}$  Tau<sup>4RD</sup> + 300  $\mu\text{M}$  OLA**



**Figure S6.** TEM images of Tau<sup>4RD</sup>/FA samples. TEM micrographs were taken on Tau<sup>4RD</sup>/OLA samples incubated for 24 h at 30 °C under intermittent shaking.