Supplemental Figure Legends

Supplemental Figure 1. Controls for ARA induction of 2N4R tau aggregation. Tau aggregation reactions were performed in the presence of ARA and various concentrations of Hsp70 (half-filled circles). Because it is possible that Hsp70 alone could cause a change in ThS fluorescence (upper graph) or right angle laser light scattering (lower graph), control reactions were performed in the presence of ARA and various concentrations of Hsp70 without the addition of tau (open circles). To obtain the background corrected ThS and LLS data sets, the values for reactions without tau were subtracted from the values of reactions with tau. Data is the average of 3 trials ± SD.

Supplemental Figure 2. Controls for CR induction of 2N4R tau aggregation. Top) Raw LLS data for CR induced 2N4R aggregation reactions is plotted against Hsp70 concentrations (circles). Control reactions for CR added to an assembly incompetent mutant of tau (upward pointing triangles), CR added to Hsp70 in the absence of tau (downward pointing triangles), and tau and Hsp70 without CR added (diamonds) are shown for comparison. Bottom) ThS was added to CR induced 2N4R aggregation reactions to detect polymerization. There was no change in ThS readings at any concentration of Hsp70 tested (filled circles). The same reactions were monitored by LLS (open circles, right axis). Because LLS is detecting polymerization without Hsp70 and there is a large decrease in polymerization with increases in Hsp70 concentration, we conclude that CR interferes with ThS fluorescence detection of tau.

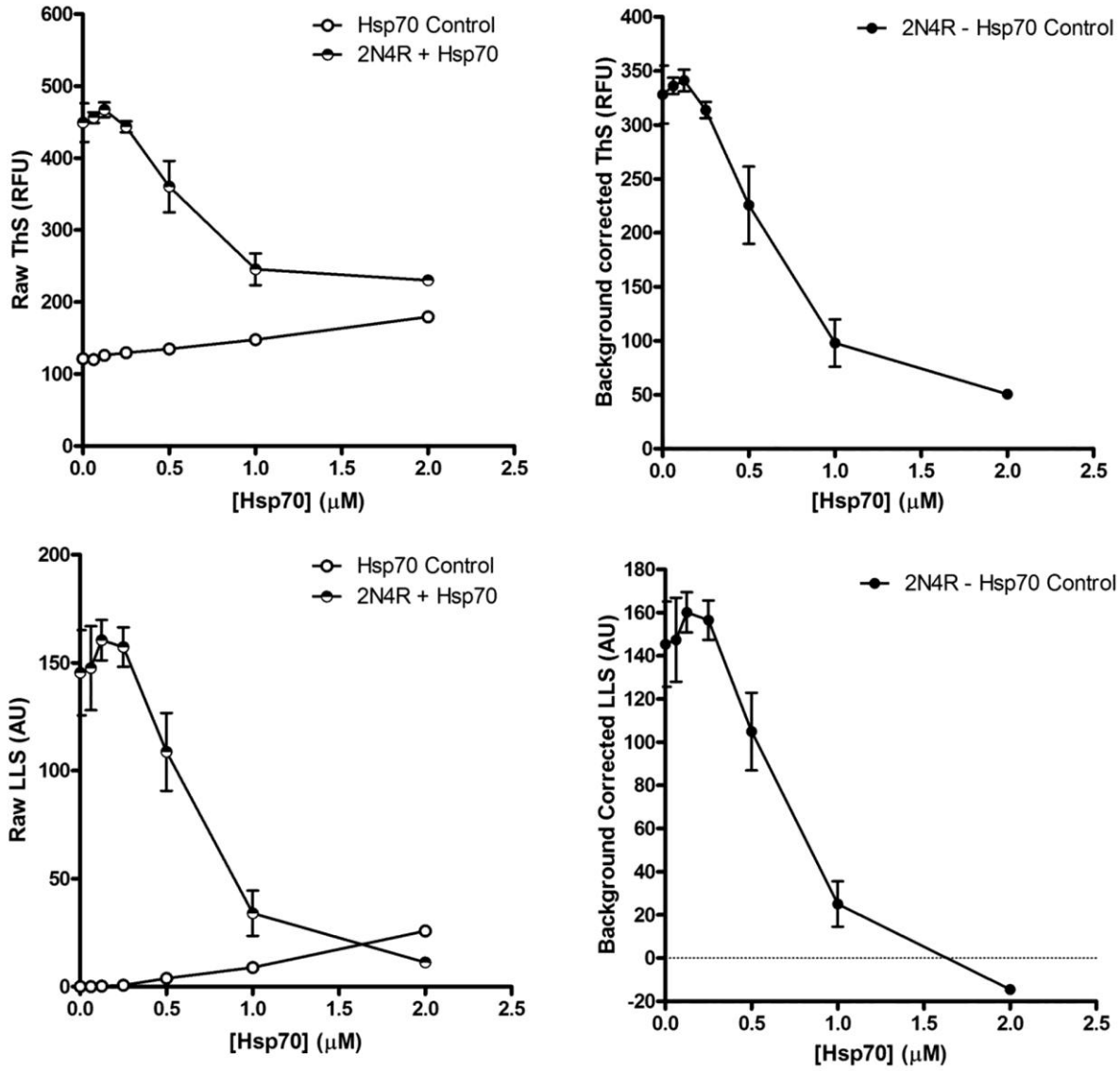
Supplemental Figure 3. Controls for heparin induction of 2N4R tau aggregation. Tau aggregation reactions were performed in the presence of ARA and various concentrations of Hsp70 (half-filled circles). Because it is possible that Hsp70 alone could cause a change in ThS fluorescence (upper graph) or right angle laser light scattering (lower graph), control reactions were performed in the presence of ARA and various concentrations of Hsp70 without the addition of tau (open circles). To obtain the background corrected ThS and LLS data sets, the values for reactions without tau were subtracted from the values of reactions with tau. Data is the average of 3 trials ± SD. We conclude that LLS is not an

appropriate technique for monitoring the aggregation of 2N4R tau under these conditions since no change in light scattering is detected with increasing concentrations of Hsp70.

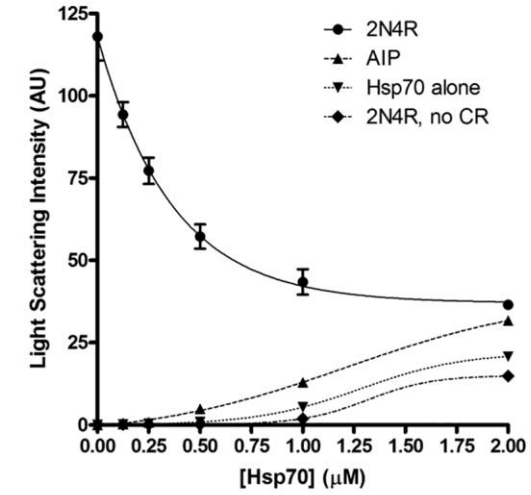
Supplemental Figure 4. Electron micrographs of each Hsp70 concentration for heparin induced tau aggregation. Five electron micrographs are shown for each concentration of Hsp70 (0-2 μM) as well as those reactions with each concentration of Hsp70 but lacking tau (bottom row). The lengths of aggregates are difficult to determine as the ends of aggregates are outside the image field at 0 μM Hsp70, but as more Hsp70 is added the aggregate lengths are decreased. Scale bar represents 500 nm.

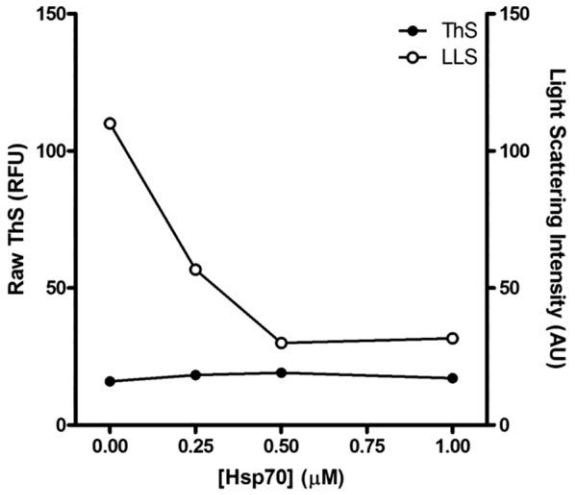
Supplemental Figure 5. 0N4R aggregates artificially skew quantitation of electron microscopy data. After 18 hrs, aggregation reactions of 0N4R tau with varying concentrations of Hsp70 were visualized by TEM. Representative images are shown for (A) 0 μM Hsp70 (B) 0.0625 μM Hsp70 (C) 0.125 μM Hsp70 and (D) 0.5 μM Hsp70. As the concentration of Hsp70 is increased, the size of infrequent large aggregates decreases and aggregates are distributed more evenly across the grid. This skews the quantitation of large aggregates because it is not possible to visualize the ends of aggregates. Scale bar represents 1 μm.

Supplemental Figure 1

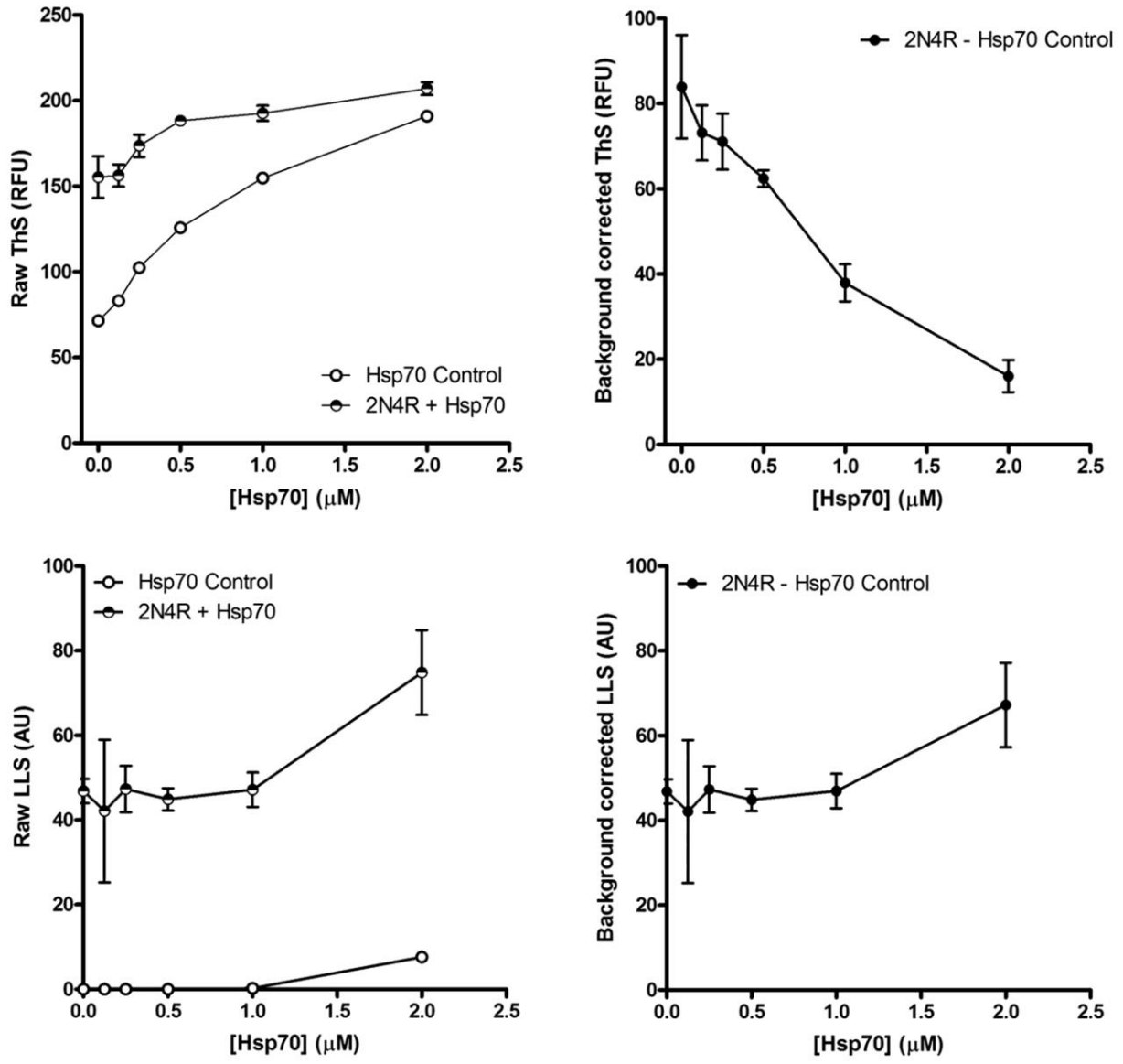


Supplemental Figure 2

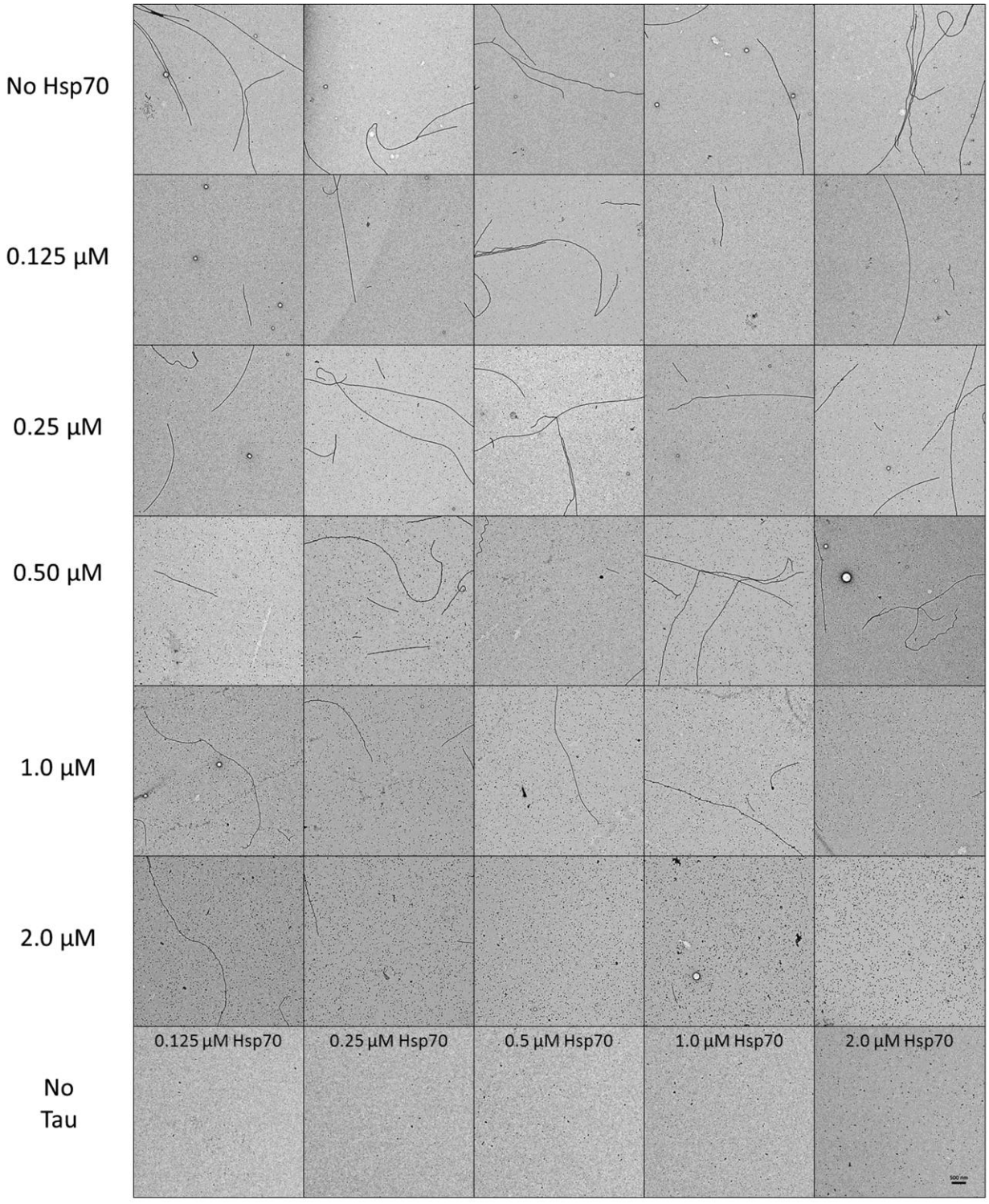




Supplemental Figure 3



Supplemental Figure 4



Supplemental Figure 5