**Supporting Information**

# Protein Capped Metal Nanoparticles Inhibits Tau Aggregation in Alzheimer's disease

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*Supporting Figure 1.*

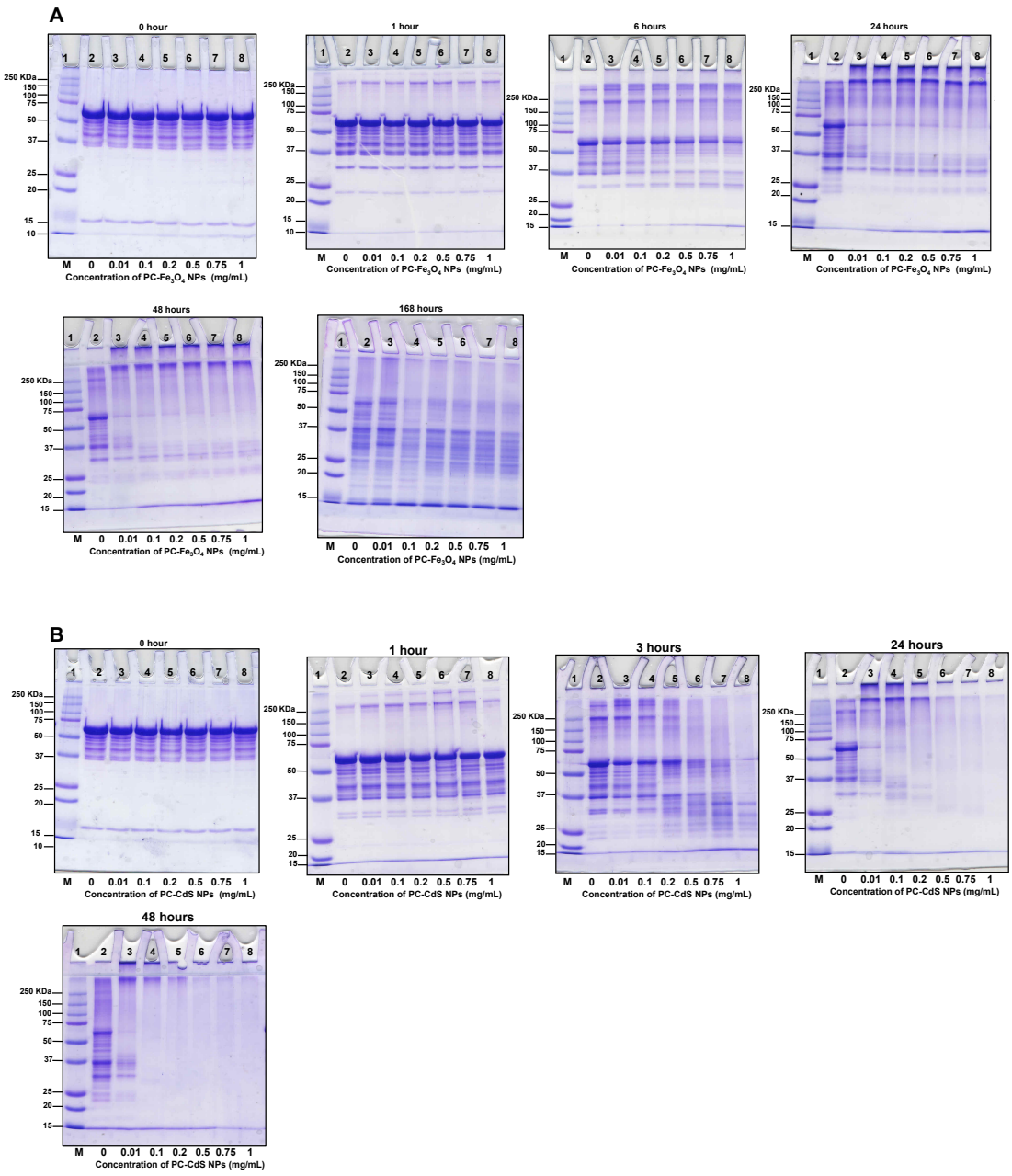


**Figure S1. Aggregation of Tau analyzed by SDS-PAGE.** SDS-PAGE analysis for Nanoparticle mediated Tau aggregation inhibition. A) The treatment of Tau aggregation reaction with PC-Fe3O4 NPs shows the presence of higher order aggregates after 1 hour of incubation. The load of higher order aggregates was seen to increase with time of incubation till 48 hours. The 168 hours of incubation shows the decrease in the intensity of higher order aggregate load in the PC-Fe3O4 NPs treated samples in a concentration dependent manner. B) SDS-PAGE analysis for PC-CdS NPs treated Tau. The PC-CdS NPs treated samples show the early presence of higher order aggregates. But after 3 hours of incubation there is a rapid decrease in the higher order aggregates in the 1 mg/mL treated reaction. Subsequently, the 24 hours and 48 hours samples show the complete absence of higher order aggregates as compared to control.

***Supporting Figure 2.***

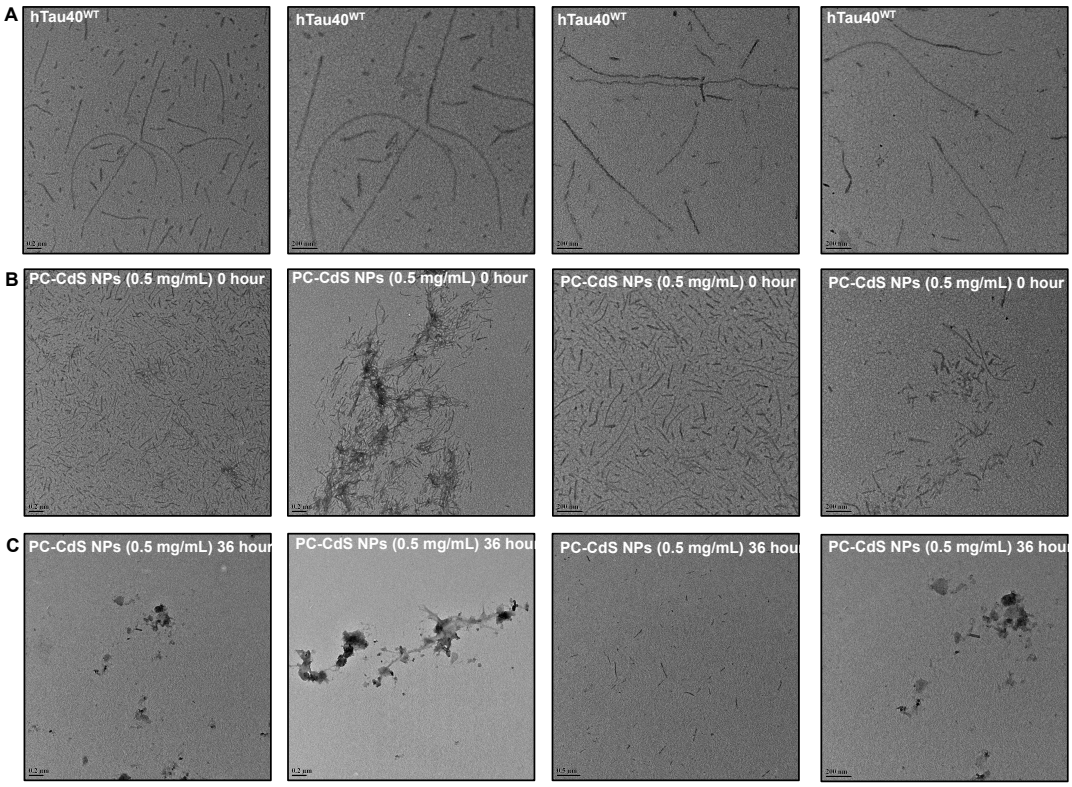


**Figure S2. Disassembly of Tau PHFs by CdS nanoparticles.** A) hTau40WT control showing presence of fibrillar aggregates. B) The fibrillar aggregates treated with PC-CdS nanoparticles at 0 hour shows presence of fragmented fibrils. C) At 36 hours of incubation the PC-CdS NPs treated samples shows broken and fragile Tau fibrils agglomerating at certain points.

*Supporting Figure 3*

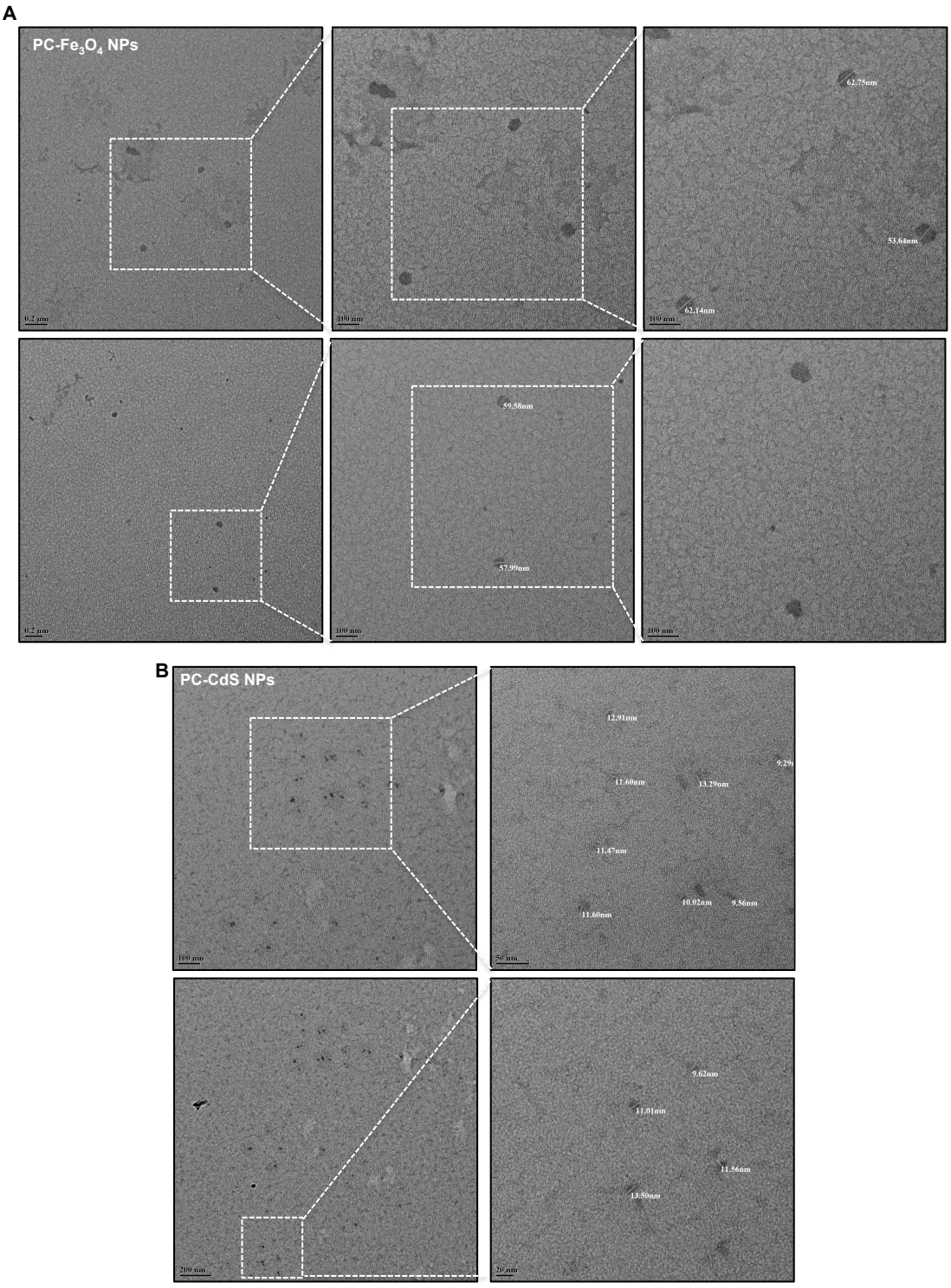


**Figure S3. TEM analysis of PC-metal nanoparticles.** A) The PC-$Fe_3O_4$ NPs show quasi-spherical morphology with average size of 50-60 nm. B) The PC-CdS NPs show the particles in quantum sizes 0f 10-20 nm.

*Supporting Figure 4*

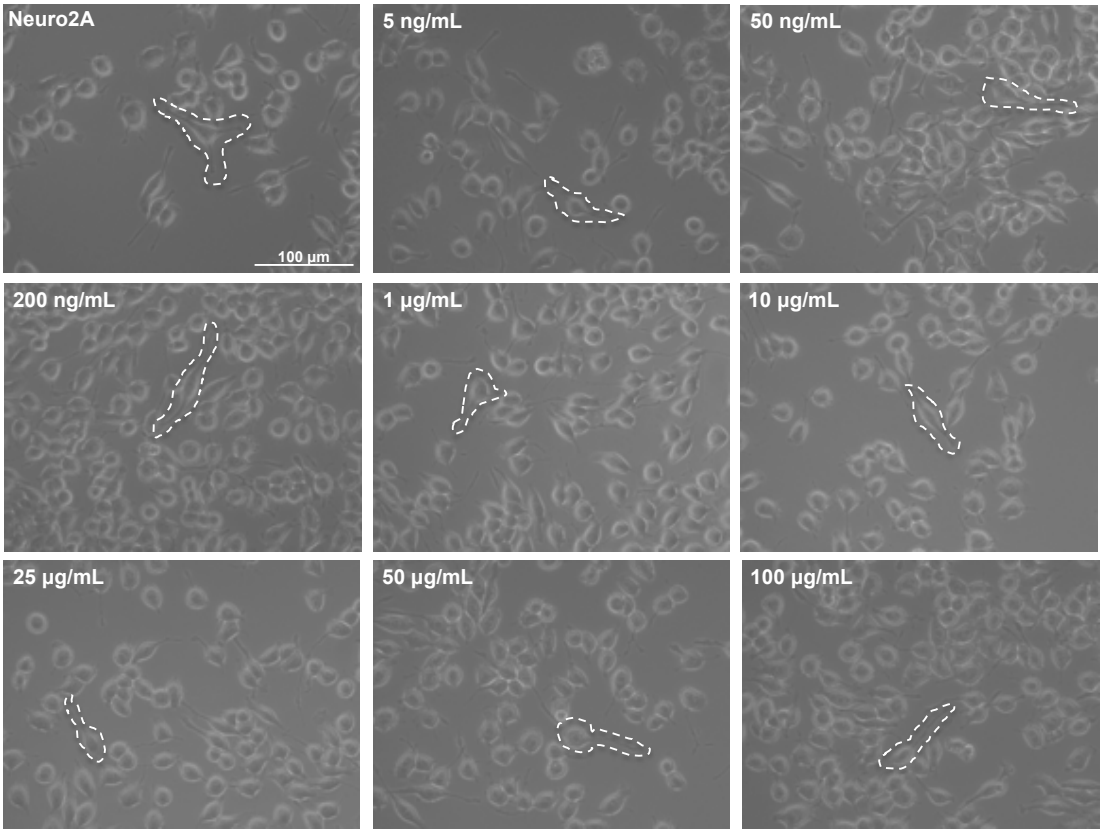


**Figure S4. Cell morphology of PC- $Fe_3O_4$ NPs treated cells.** The untreated neuro2a cells show the presence of cell extensions, which is the characteristic of the cell line. The PC-$Fe_3O_4$ NPs treated cells show presence of these intact extensions suggesting that these NPs do not affect the basic morphology of the cells even at higher dosage of 100 µg/mL.

*Supporting Figure 5*

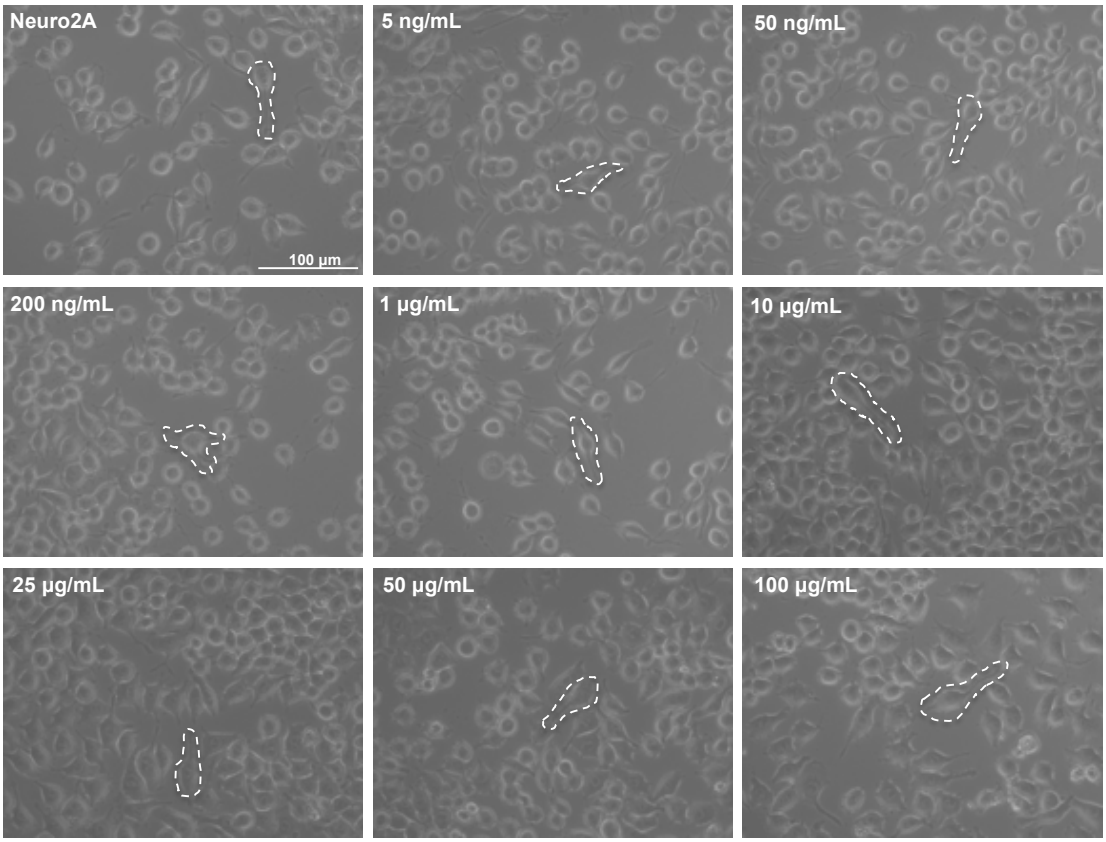


**Figure S5. Cell morphology of PC- CdS NPs treated cells.** The PC-CdS treated NPs maintain the neurite outgrowth and cell morphology though found to be mildly toxic at higher concentrations.