Supplementary Figures:

**1. Supplementary Figure**

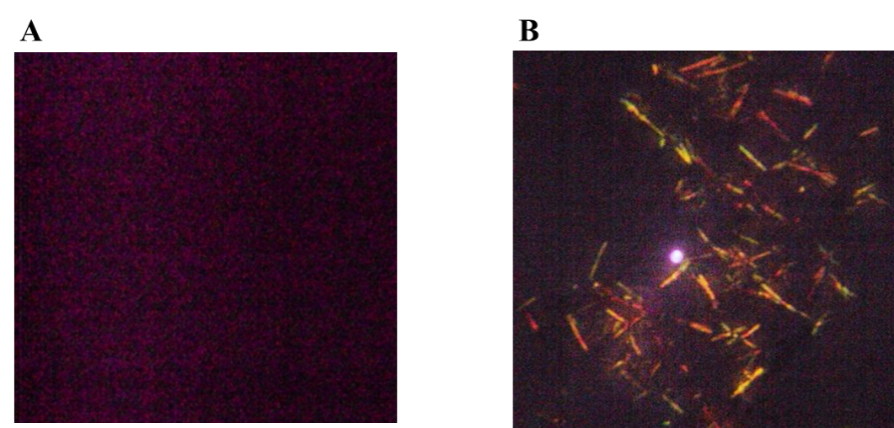
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***Insert Supplementary Figure S1 about here** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*



**Supplementary Figure S1.** Western blot analysis of Aβ1-42 oligomers. Aβ1-42 oligomers were run on SDS polyacrylamide gels, transferred to nitrocellulose and probed with anti- β-Amyloid antibodies. Oligomeric samples contain bands that react with anti- β-Amyloid ranging from monomer up to the size of material that accumulates at the top of the gel.

**2. Supplementary Figure**

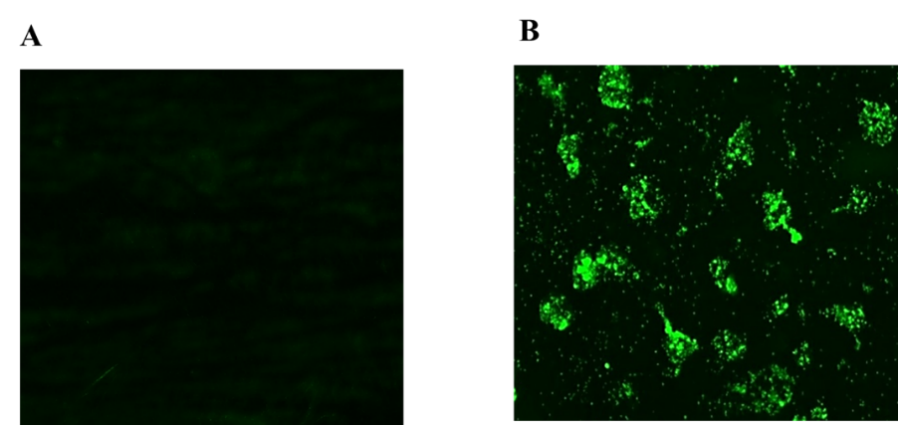
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***Insert Supplementary Figure S2 about here** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*



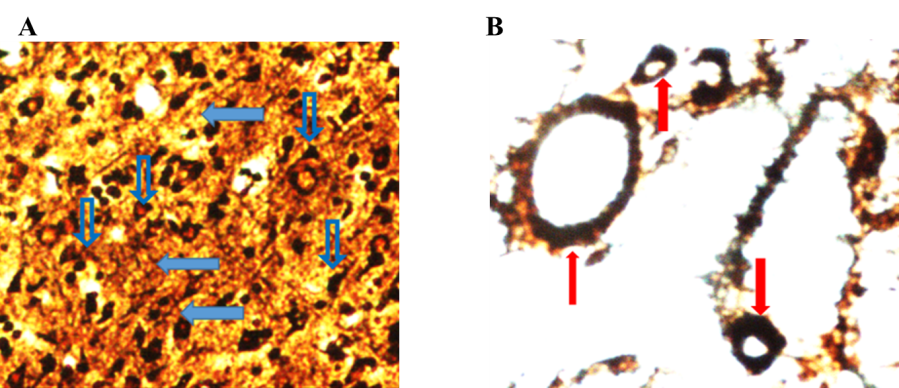
**Supplementary Figure S2.** Green/yellow birefringence under Polarized optical microscopy image of oligomeric Aβ1-42.A, air dried buffer, B, oligomeric Aβ1-42 was incubated with D-PBS, pH-7.4 at 37° C for 72 hours and stained with Congo red dye.

**3. Supplementary Figure**

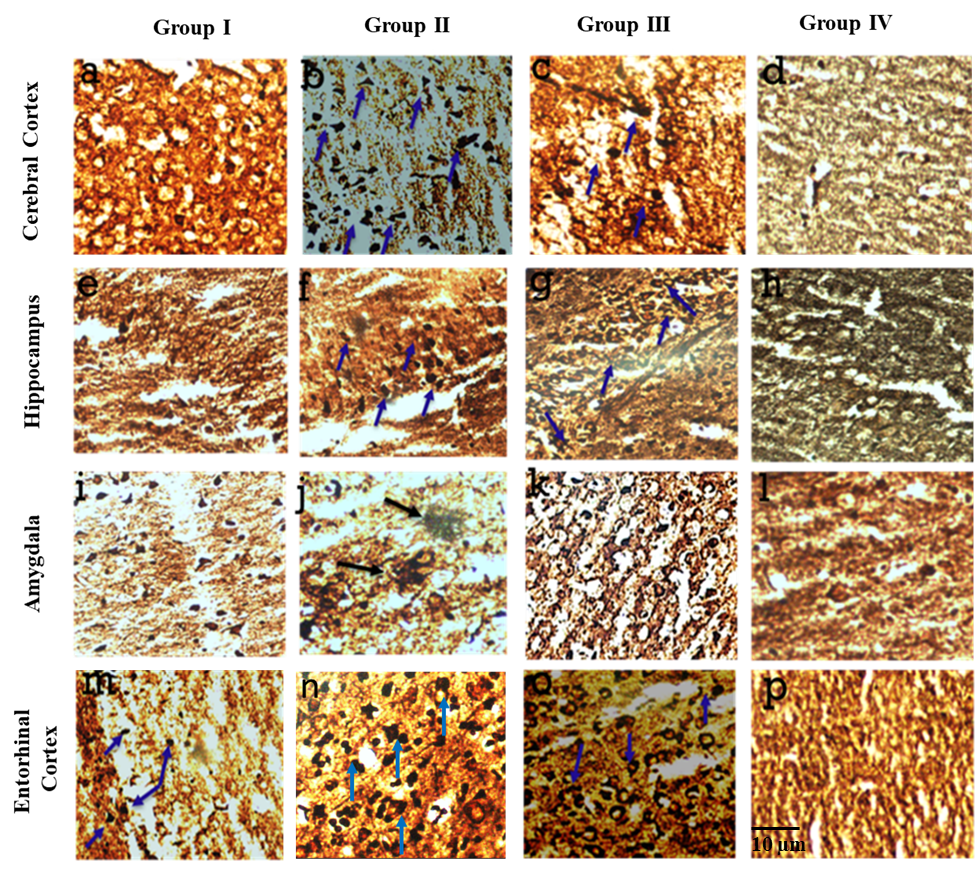
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***Insert Supplementary Figure S3 about here** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*



**Supplementary Figure S3.** Direct observation of Aβ1-42 oligomerization followed by Fluorescence microscopic analysis using Thioflavin T as fluorescent dye A, air dried buffer, B, after 72 hours incubation in D-PBS, pH-7.4 at 37° C and stained with Thioflavin-T dye.



**Supplementary Figure S4**. Hirano’s silver staining of neuritic plaques and nerve fibers of rat brain treated with oAβ1-42 peptide. (A) AD model group shows neuronal loss and dystrophic neurites (open and closed arrows). (B). Parenchymal, extracellular deposits (red arrows) were observed in hippocampal region of rat brain. Scale bar 10 µM.



**Supplementary Figure S5. Modified Hirano’s silver staining of oAβ1-42 injectedrat brain** (a-p) Representative microphotographs of Hirano’s silver stained (a-d) cerebral cortex, (e-h) hippocampus, (i-l) amygdala and (m-p) entorhinal cortex of Aβ1-42 injected rats after 8, 15, and 30 days post-injection compared to sham-control group. Extracellular amyloid deposits (blue arrow) were observed in hippocampus and entorhinal cortex of rat brain after 15 days post injection of oligomeric Aβ1-42 compared to other groups. No morphologic changes were observed in sham control rat brain (magnification 40X). Scale bar 10 µM.