

Supplementary Materials

Evaluation of aggregation inhibition and disaggregation activity of A-type procyanidins against amyloid polypeptides

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Figure S1. **Efficacy of compounds 1-9 and EGCG against A β 42 aggregation.** The fibril formation of A β 42 (25 μ M) was monitored by Th-T fluorescence and the presence of A: **1** (Procyanidin A2), B: **2** (Procyanidin A1), C: **3** (Proanthocyanidin A6), D: **4**, E: **5** (Proanthocyanidin A7), F: **6**, G: **7** (Me-Procyanidin A2), H: **8** ((-)-Epicatechin), I: **9** ((+)-Catechin) and J: EGCG. Fluorescence intensity was measured at an excitation wavelength of 420 nm and emission wavelength of 485 nm. Values represent the mean \pm SD (n = 6).

Figure S2. **Efficacy of compounds 1-9 and EGCG against A β 42 fibrillogenesis visualized by use of TEM.** Fibril formation was observed after 24 h of incubation in 50 μ M PBS buffer. Scale bars: 1.0 μ m. A: A β 42 + **1** (Procyanidin A2), B: A β 42 + **2** (Procyanidin A1), C: A β 42 + **3** (Proanthocyanidin A6), D: A β 42 + **4**, E: A β 42 + **5** (Proanthocyanidin A7), F: A β 42 + **6**, G: A β 42 + **7** (Me-Procyanidin A2), H: A β 42 + **8** ((-)-Epicatechin), I: A β 42 + **9** ((+)-Catechin), J: A β 42 + EGCG and K: A β 42.

Figure S3. **Efficacy of compounds 1-9 and EGCG against hIAPP aggregation.** The fibril formation of hIAPP (25 μ M) was monitored by Th-T fluorescence and the presence of A: **1** (Procyanidin A2), B: **2** (Procyanidin A1), C: **3** (Proanthocyanidin A6), D: **4**, E: **5** (Proanthocyanidin A7), F: **6**, G: **7** (Me-Procyanidin A2), H: **8** ((-)-Epicatechin), I: **9** ((+)-Catechin) and J: EGCG. Fluorescence intensity was measured at an excitation wavelength of 420 nm and emission wavelength of 485 nm. Values represent the mean \pm SD (n = 6).

Figure S4. **Efficacy of compounds 1-9 and EGCG against hIAPP fibrillogenesis visualized by use of TEM.** Fibril formation was observed after 24 h of incubation in 50 μ M PBS buffer. Scale bars: 1.0 μ m. A: hIAPP + **1** (Procyanidin A2), B: hIAPP + **2** (Procyanidin A1), C: hIAPP + **3** (Proanthocyanidin A6), D: hIAPP + **4**, E: hIAPP + **5** (Proanthocyanidin A7), F: hIAPP + **6**, G: hIAPP + **7** (Me-Procyanidin A2), H: hIAPP + **8** ((-)-Epicatechin), I: hIAPP + **9** ((+)-Catechin), J: hIAPP + EGCG and K: hIAPP.

Figure S5. **Efficacy of compounds 1, 3, 5, 7, 8, and EGCG against pre-existing A β 42 fibrils.** A β 42 (25 μ M) fibrils was quantified by monitoring Th-T fluorescence in the presence of varying concentrations of A: **1** (Procyanidin A2), B: **3** (Proanthocyanidin A6), C: **5** (Proanthocyanidin A7), D: **7** (Me-Procyanidin A2), E: **8** ((-)-Epicatechin) and F: EGCG. Fluorescence intensity was measured at an excitation wavelength of 420 nm

and emission wavelength of 485 nm. Values represent the mean \pm SD (n = 6).

Figure S6. Efficacy of compounds **1**, **3**, **7**, and **8** against pre-existing A β 42 fibrils visualized by use of TEM.

Scale bars: 1.0 μ m. A: A β 42 + **1** (Procyanidin A2), B: A β 42 + **3** (Proanthocyanidin A6), C: A β 42 + **5** (Proanthocyanidin A7), D: A β 42 + **7** (Me-Procyanidin A2), E: A β 42 + **8** ((-)-Epicatechin), F: A β 42 + EGCG and G: A β 42.

Figure S7. Efficacy of compounds **1**, **3**, **5**, **7**, **8** and EGCG against pre-existing hIAPP fibrils. hIAPP (25 μ M)

fibrils was quantified by monitoring Th-T fluorescence in the presence of varying concentrations of A: **1** (Procyanidin A2), B: **3** (Proanthocyanidin A6), C: **5** (Proanthocyanidin A7), D: **7** (Me-Procyanidin A2), E: **8** ((-)-Epicatechin) and F: EGCG. Fluorescence intensity was measured at an excitation wavelength of 420 nm and emission wavelength of 485 nm. Values represent the mean \pm SD (n = 6).

Figure S8. Efficacy of compounds **1**, **3**, **7**, and **8** against pre-existing hIAPP fibrils visualized by use of TEM.

Scale bars: 1.0 μ m. A: hIAPP + **1** (Procyanidin A2), B: hIAPP + **3** (Proanthocyanidin A6), C: hIAPP + **5** (Proanthocyanidin A7), D: hIAPP + **7** (Me-Procyanidin A2), E: hIAPP + **8** ((-)-Epicatechin), F: hIAPP + EGCG and G: hIAPP.

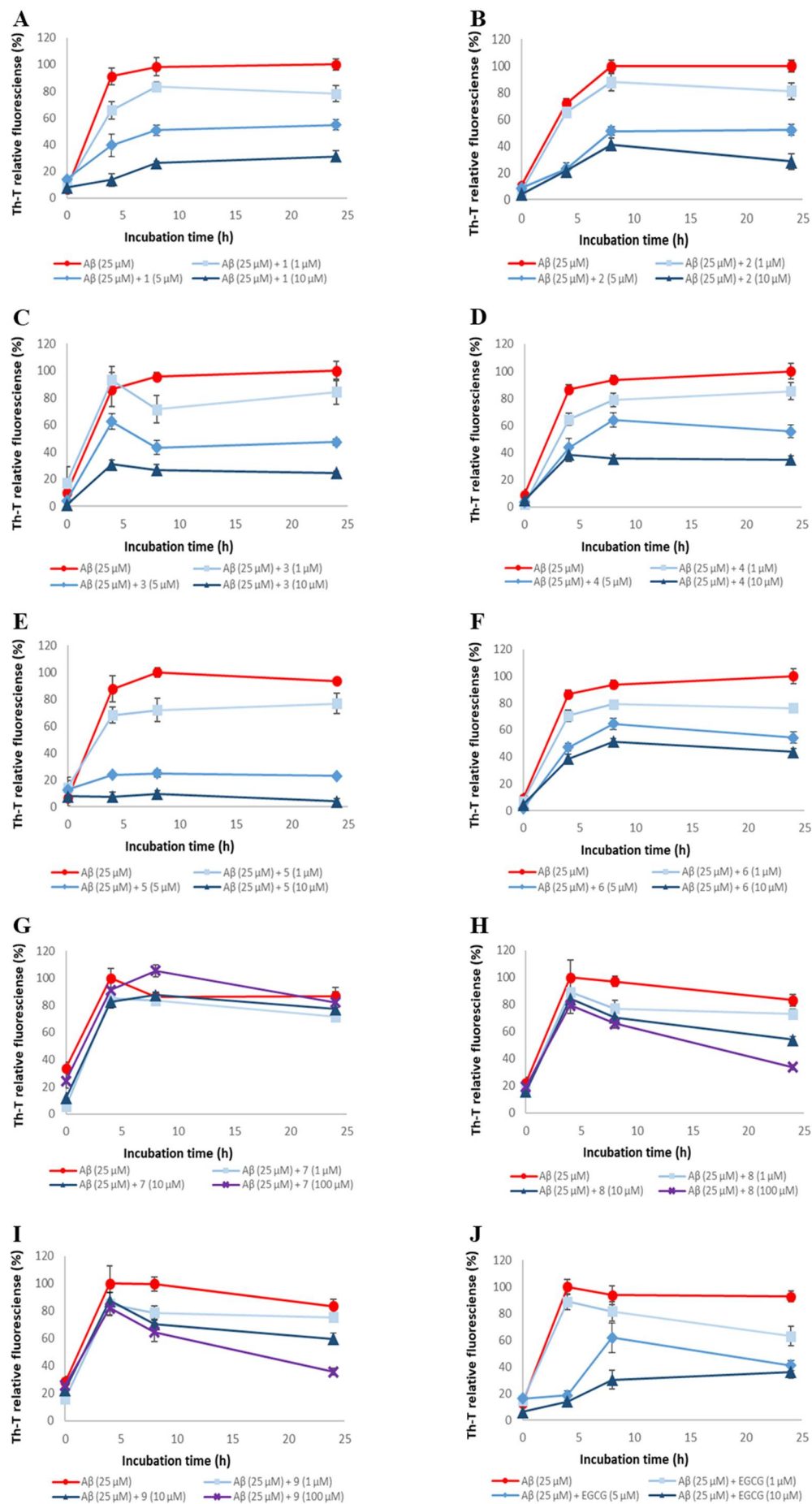


Figure S1

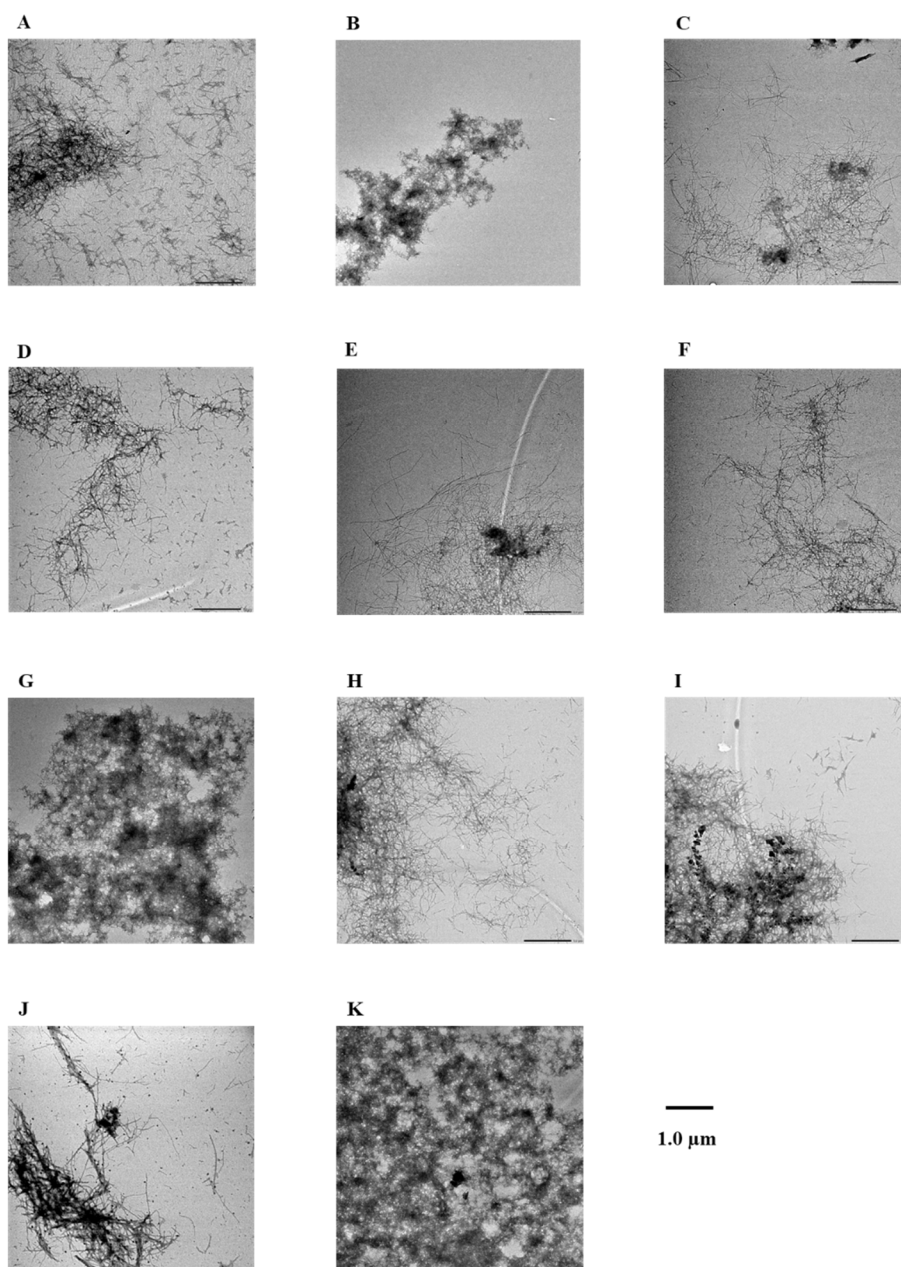


Figure S2

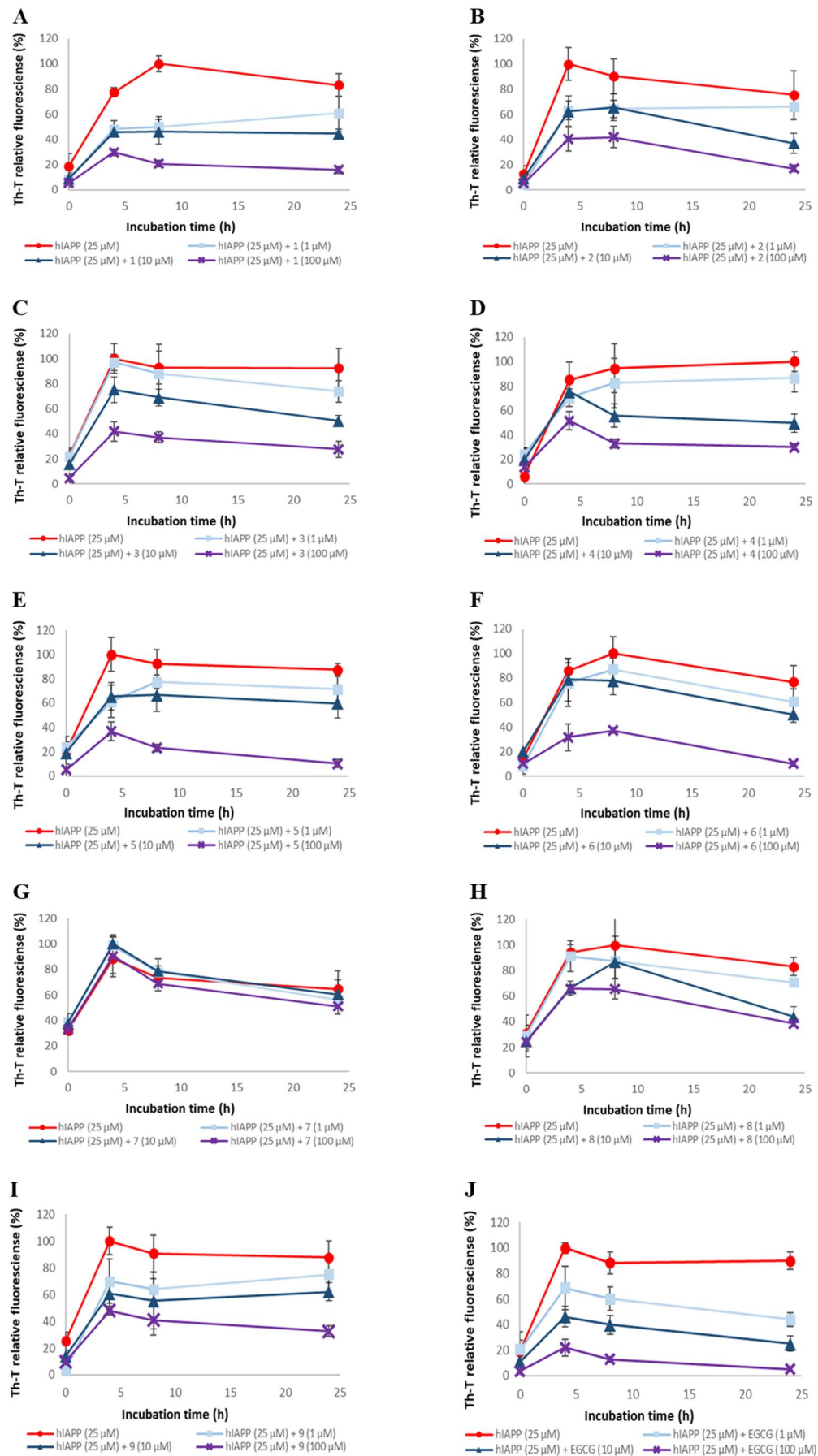


Figure S3

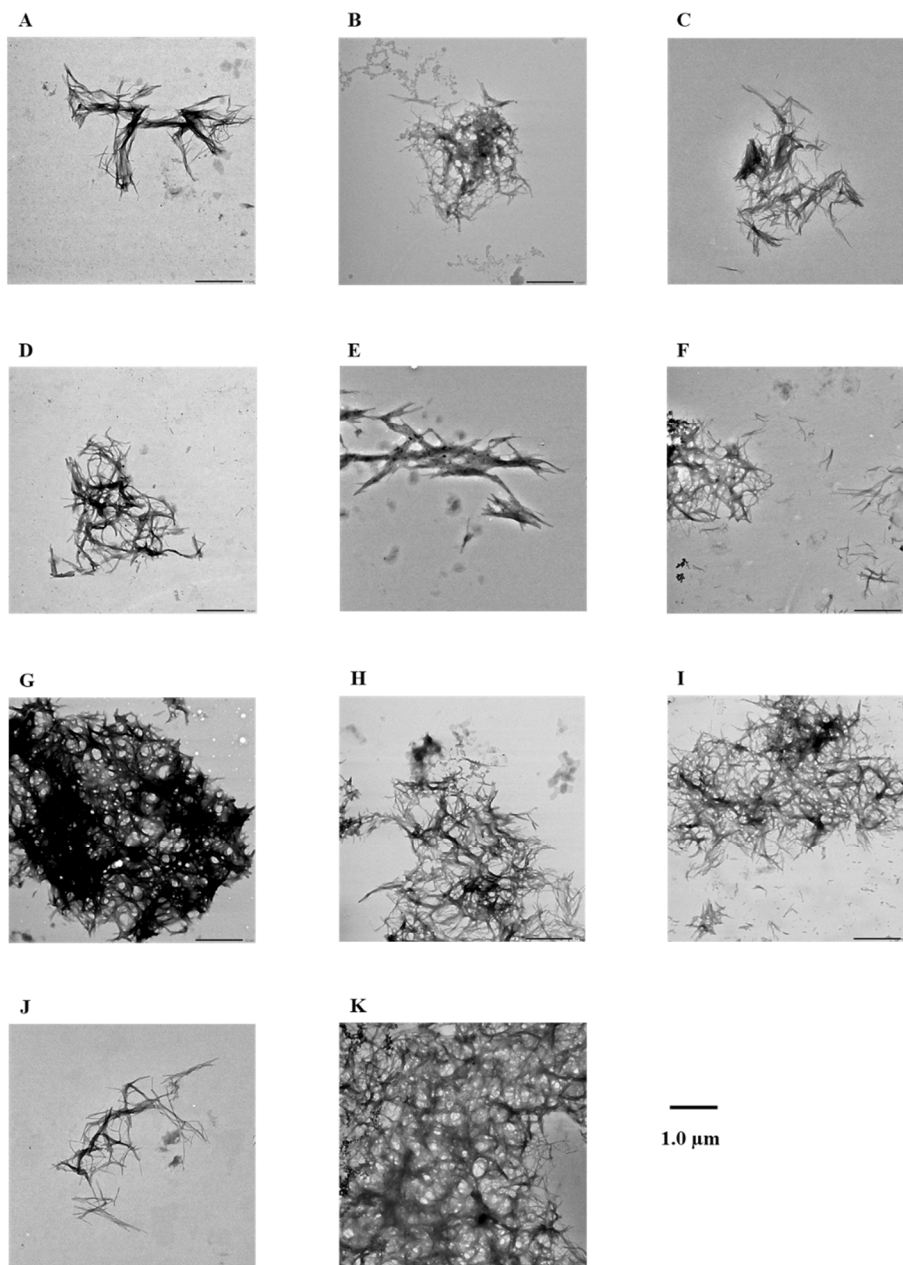


Figure S4

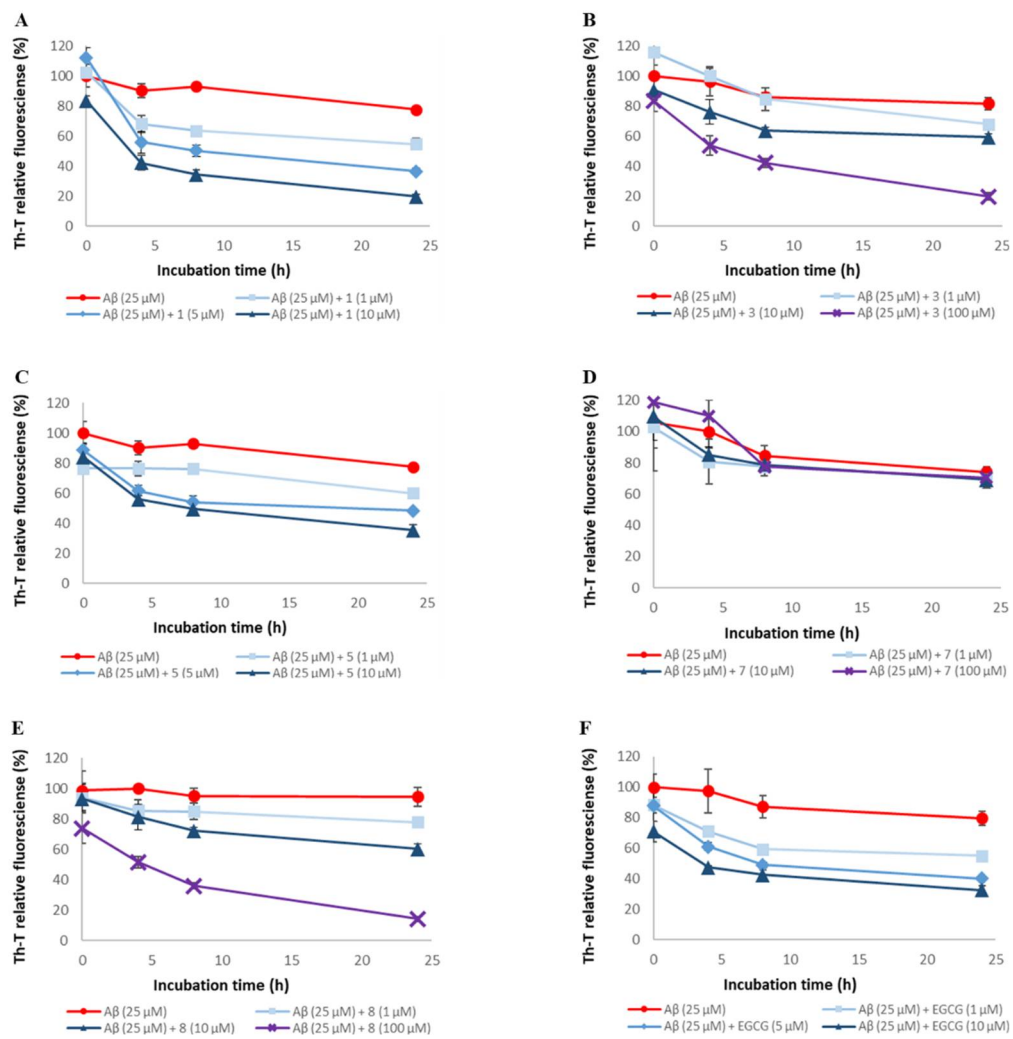


Figure S5

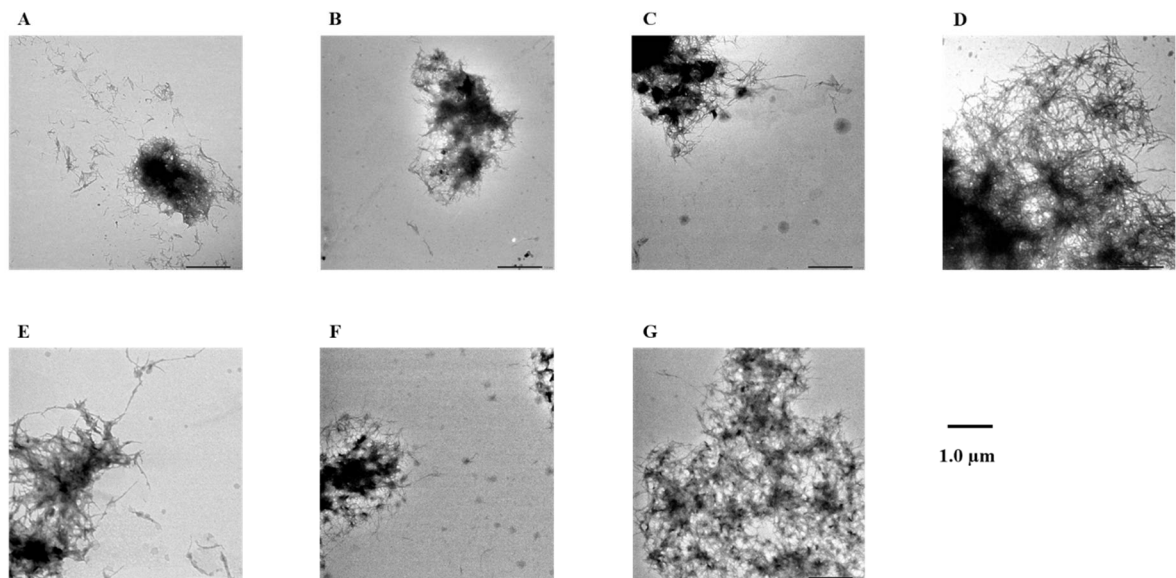


Figure S6

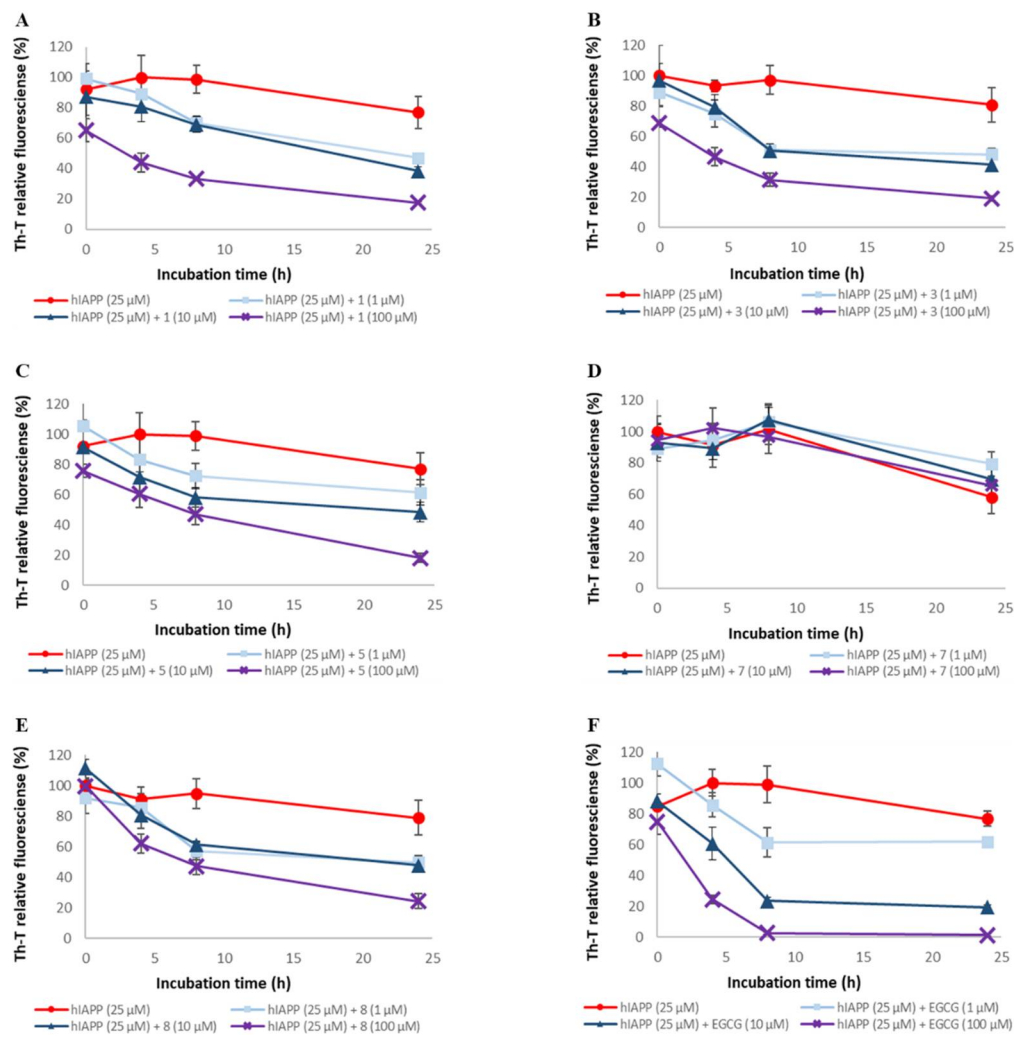


Figure S7

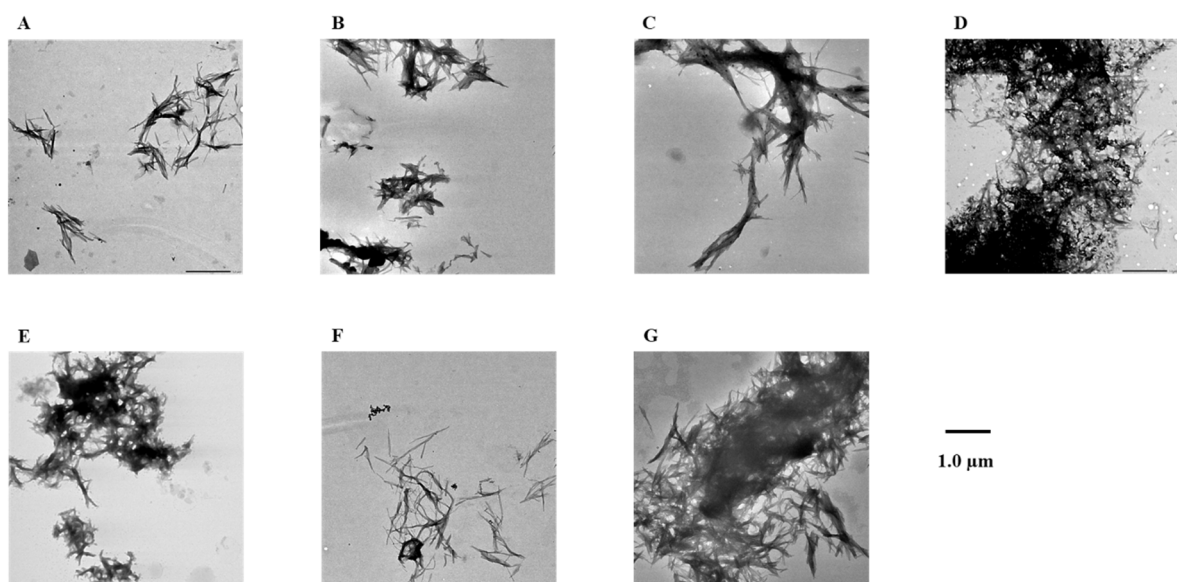


Figure S8