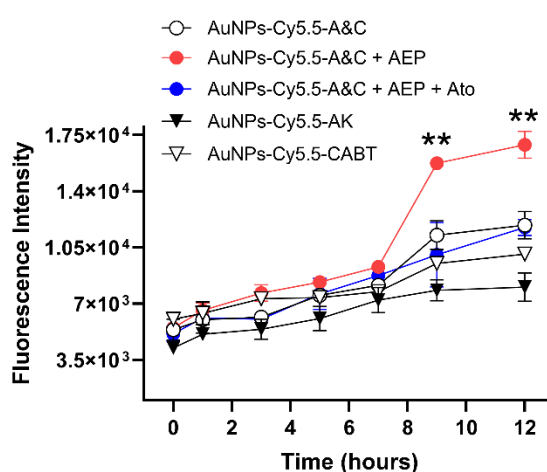


Imaging Asparaginyl Endopeptidase (AEP) in the Live Brain as a Biomarker for Alzheimer's disease

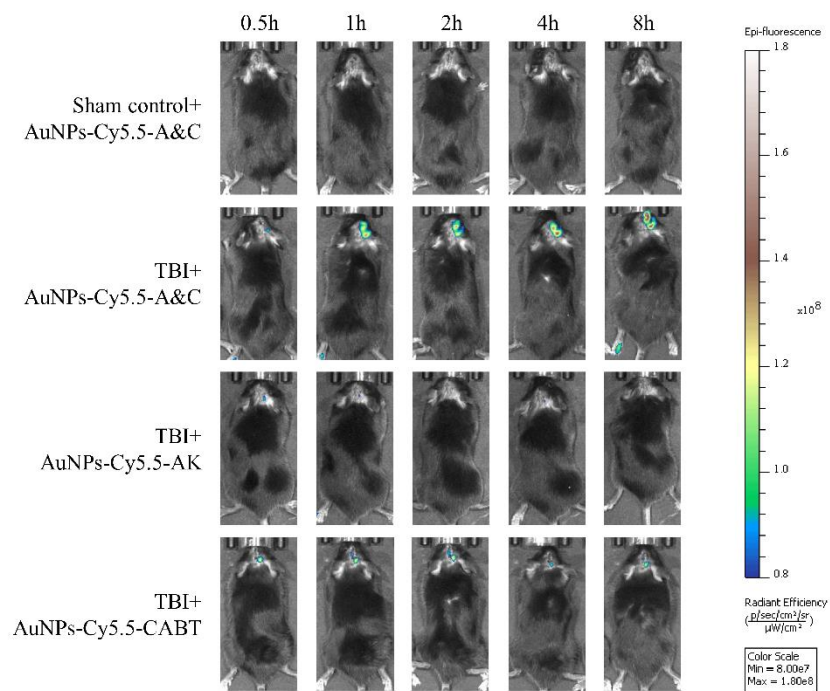
Shan-Shan Wang¹ #, Zi-Kai Liu¹ #, Jing-Jing Liu¹ #, Qing Cheng¹, Yan-Xia Wang¹, Yan Liu¹, Wen-Wen Ni¹, Hong-Zhuan Chen² * and Mingke Song¹ *

Additional file: **Figure S1**

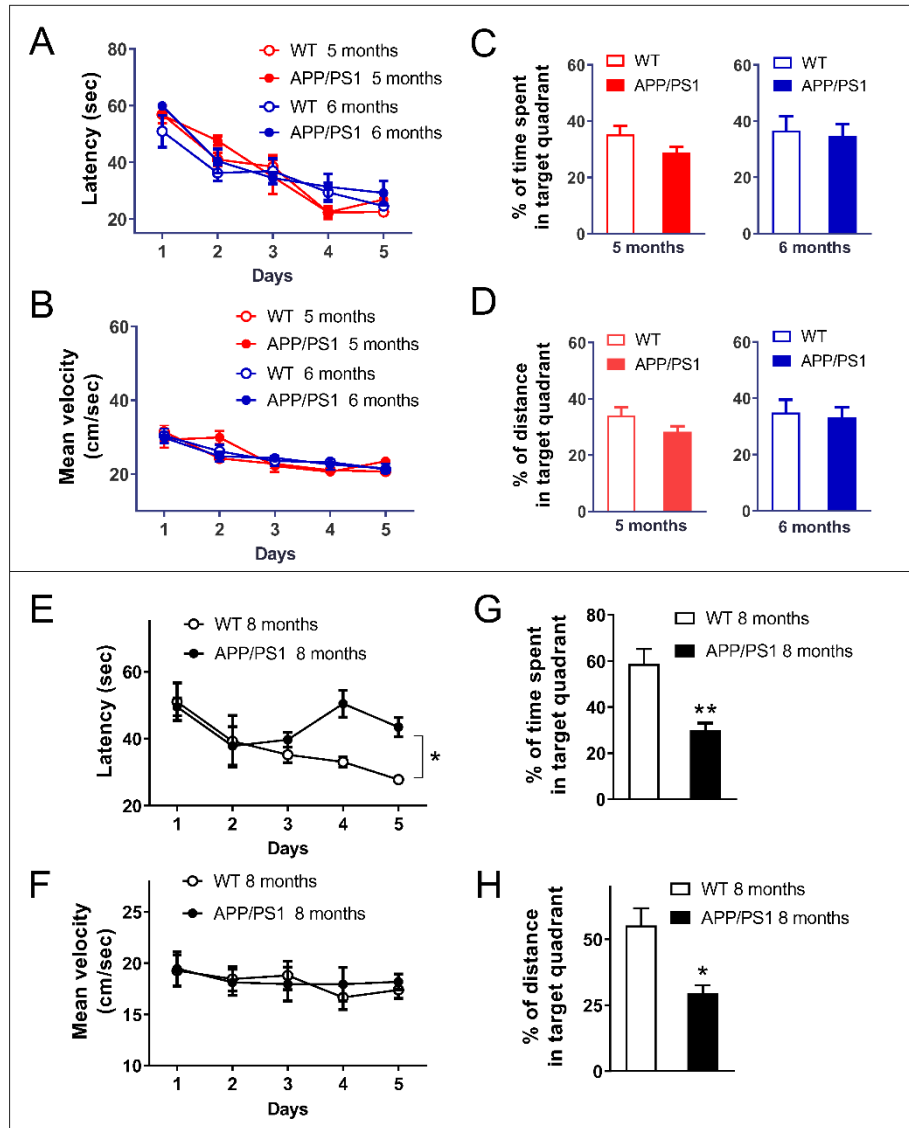


Additional file: **Figure S1**. AEP-triggered fluorescence enhancement of AuNPs-Cy5.5-A&C. In pH 5.0 HEPES buffer, AuNPs-Cy5.5-A&C was incubated without or with AEP (1 mg ml⁻¹) for 12 hours. 20 μM Atorvastatin (Ato) was used to inhibit AEP. AuNPs-Cy5.5-AK or AuNPs-Cy5.5-CABT alone was also incubated in the same buffer. Fluorescent intensity measured by a microplate reader. ***P* < 0.01, AEP treated group compared with other groups; one-way ANOVA, n = 3 independent experiments.

Additional file 1: **Figure S2**



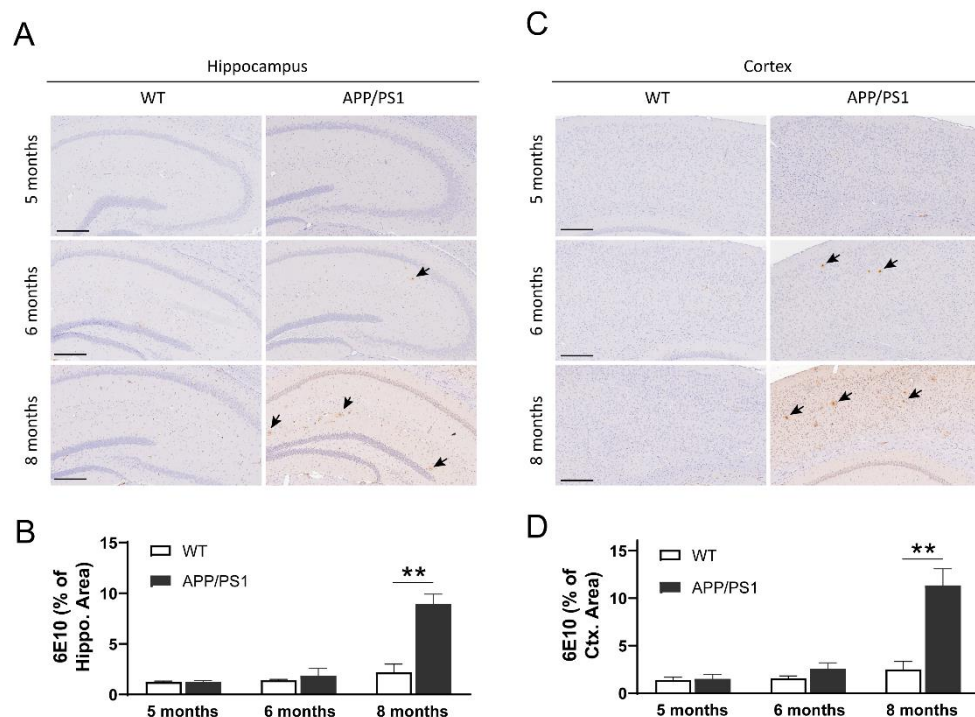
Additional file 1: **Figure S2.** Whole body fluorescence imaging of TBI mice. We have shaved hair on the head but kept the body hair intact when imaging mice.



Additional file 1: **Figure S3.** Spatial learning and memory of age-mated APP/PS1 and WT mice at 5, 6, and 8 months of age. **(A-B)** The latency to the escape platform and swimming speed of 5-6-month old mice over the 5-day acquisition training. **(C-D)** The percentage of time spent and distance travelled in the target quadrant in the hidden platform test (probe test), which was performed on day 6 after the acquisition period. No significant difference between APP/PS1 and WT mice at 5 and 6 months of age. $P > 0.05$, Student's t -test, $n = 8$ mice per group. **(E-F)** The latency to the escape platform and swimming speed of 8-month old mice over the 5-day acquisition training. $*P < 0.05$, group $\times$ training day effect. $n = 8$ mice per group, two-way

ANOVA. **(G-H)** The percentage of time spent and distance travelled in the target quadrant. * $P < 0.05$ and ** $P < 0.01$, between groups, Student's t -test, $n = 8$ per group.

Additional file 1: **Figure S4.**



Additional file 1: **Figure S4.** A β plaque deposition in the brain of age-mated APP/PS1 and WT mice at 5, 6, and 8 months of age. Staining of 6E10 (indicated by arrow head) in the hippocampus and cortex demonstrate that A β plaque began to appear at 6 months and expanded at 8 months of age. Scale bar = 250 μ m. No significant A β plaque present in the brain of WT mice. ** $P < 0.01$, Student's t -test between groups; $n = 5$ mice in each group.
