**Supplemental Table 1** Plaque load across hippocampal regions

|        | F Tg-AD mean ± SEM | p-value (DG vs other) | M Tg-AD mean ± SEM | p-value (DG vs other) |
|--------|--------------------|-----------------------|--------------------|-----------------------|
| SB     | 0.58 ± 0.04        | 0.0002***             | 0.47 ± 0.07        | 0.002**               |
| CA1    | 0.48 ± 0.03        | <0.0001****           | 0.46 ± 0.06        | 0.0009***             |
| CA3    | 0.57 ± 0.08        | 0.0002***             | 0.49 ± 0.05        | 0.003**               |
| DG     | 0.98 ± 0.05        | -                     | 0.80 ± 0.06        | -                     |

Values represent the percent of the signal (Aβ+) detected within a specific area (= 100%, μm²) as explained under materials and methods. Abbreviations: Tg-AD, transgenic rat model of Alzheimer’s disease; SEM, standard error of the mean; SB, subiculum; CA, cornu ammonis; DG, dentate gyrus. Statistical analysis: one way ANOVA and Tukey’s multiple comparison.

**Supplemental Table 2** Antibodies used for IHC and WB analyses of hippocampal tissue

| Antibody        | Company          | Catalog Number | Species/Type          | Dilution | Assay |
|-----------------|------------------|----------------|-----------------------|----------|-------|
| **PRIMARIES**   |                  |                |                       |          |       |
| Aβ (4G8)        | Biolegend        | #800708        | Mouse Monoclonal      | 1:1000   | IHC   |
| Aβ (6E10)       | Biolegend        | #SIG-39320     | Mouse Monoclonal      | 1:2000   | WB    |
| FL-APP (22C11)  | Millipore Sigma  | #MAB348        | Mouse Monoclonal      | 1:2000   | WB    |
| Iba1            | Fujifilm WAKO    | #019-19741     | Rabbit Polyclonal     | 1:500    | IHC   |
| NeuN            | Millipore Sigma  | #ABN91         | Chicken Polyclonal    | 1:250    | IHC   |
| β-Actin (AC-74) | Sigma-Aldrich    | #A2228         | Mouse Monoclonal      | 1:2000   | WB    |
| GluR2 (6C4)     | Millipore Sigma  | #MAB397        | Mouse Monoclonal      | 1:800/1:3000 | IHC/WB |
| GluR1           | Millipore Sigma  | #ABN241        | Rabbit Polyclonal     | 1:2000   | WB    |
| PSD95 (D27E11)  | Cell Signaling   | #MAB3450       | Rabbit Monoclonal     | 1:200/1:1000 | IHC/WB |
| **SECONDARIES** |                  |                |                       |          |       |
| Alexa Fluor 488, Goat anti-Rabbit IgG (H+L) | ThermoFisher | #A-27034 | Rabbit Secondary | 1:250 | IHC   |
| Alexa Fluor 488, Goat anti-Mouse IgG (H+L) | ThermoFisher | #A-11029 | Mouse Secondary | 1:250 | IHC   |
| Alexa Fluor 568, Goat anti-Mouse IgG (H+L) | ThermoFisher | #A-11031 | Mouse Secondary | 1:250 | IHC   |
| Alexa Fluor 568, Goat anti-Rabbit IgG (H+L) | ThermoFisher | #A-11036 | Rabbit Secondary | 1:250 | IHC   |
| DyLight 350, Goat anti-Chicken IgY (H+L) | ThermoFisher | # SA5-10069 | Chicken Secondary | 1:100 | IHC   |
| Goat Anti-Rabbit IgG (H + L)-HRP | Cell Signaling | #7074 | Rabbit Secondary | 1:2000 | WB    |
| Goat Anti-Mouse IgG (H + L)-HRP | Cell Signaling | #7076 | Mouse Secondary | 1:2000-10000 | WB    |

Abbreviations: IHC, immunohistochemistry; WB, western blot; Aβ, amyloid β; FL-APP, full length amyloid precursor protein; Iba1, ionized calcium binding adaptor molecule 1; NeuN, neuronal nuclei; neuronal marker; GluR1, glutamate receptor 1; GluR2, glutamate receptor 2; PSD95, post-synaptic density protein 95
Uncropped blot for detection of FL APP and Actin in 9-month Female and Male WT and Tg-AD rats as shown in Fig. 6.
The numbers refer to specific rats.
Uncropped blot for detecting Aβ in Female (F) and Male (M) WT and Tg-AD rats as shown in Fig. 6. Two exposures are shown.
Uncropped blot for detection of GAPDH in Female (F) and Male (M) WT and Tg-AD rats as shown in Fig. 6.