

1 Supplementary Information for

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3 **FKBP52 overexpression accelerates hippocampal-dependent memory impairments in a**
4 **tau transgenic mouse model**

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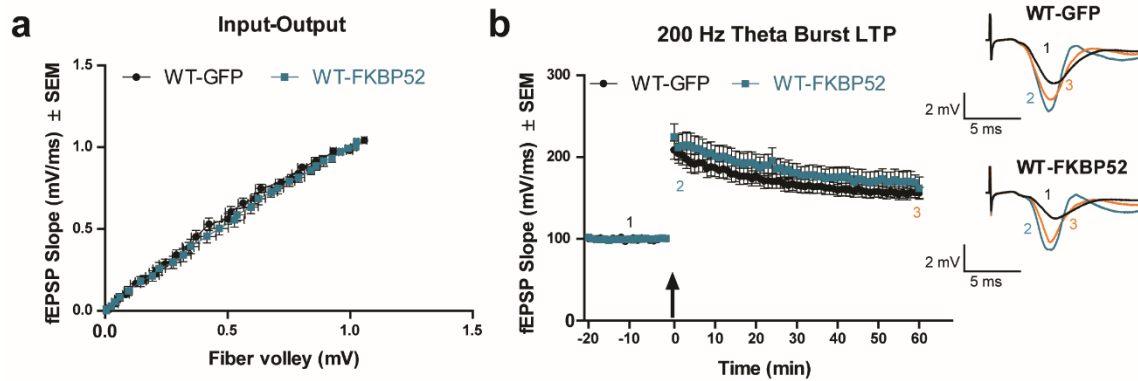
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20 **This PDF file includes:**

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22 Supplementary material: Figures S1 to S4

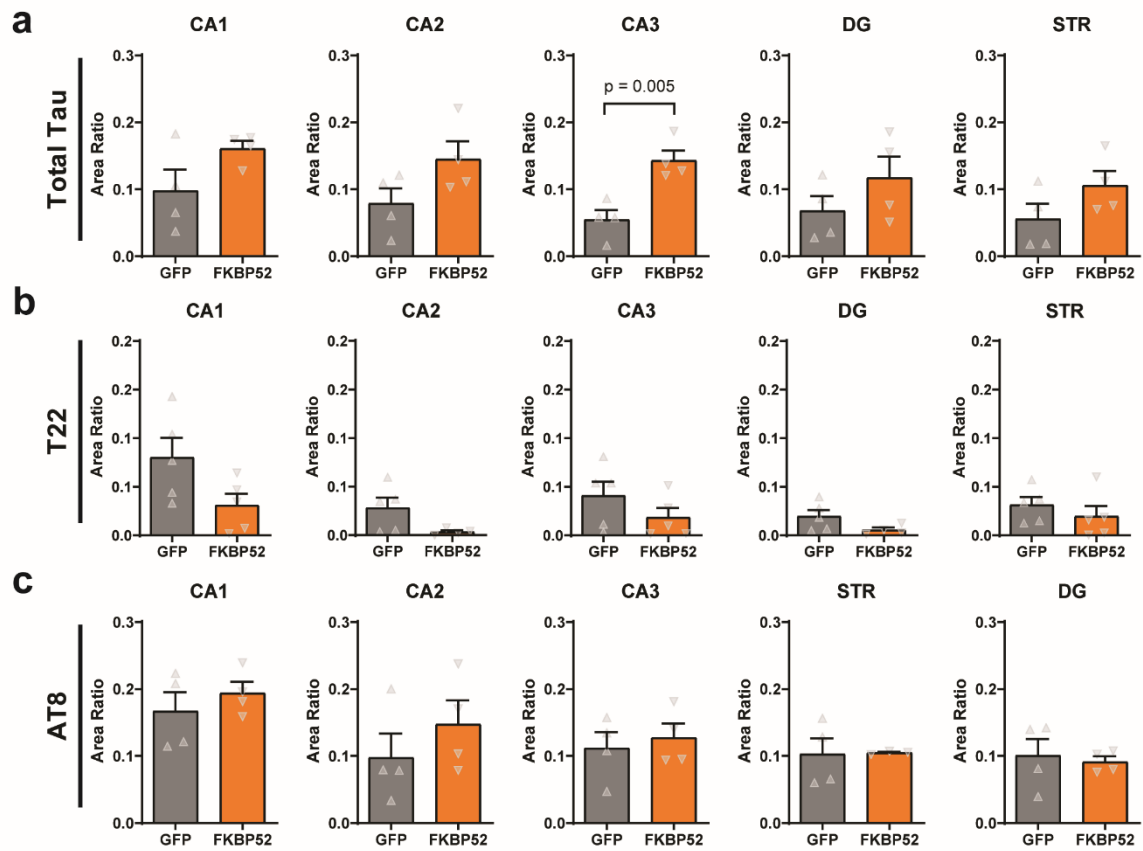
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Supplementary Figure 1. FKBP52 overexpression did not affect hippocampal LTP in WT

28 **mice.** **a** The Input-Output (I-O) curve was calculated to evaluate pre- and post-synaptic excitatory
29 function. The I-O curve compares the fEPSP slope (mV/ms) versus the fiber volley amplitude (mV).
30 **b** LTP was measured in ex vivo hippocampal slices from WT mice infused with AAV9-GFP or AAV9-
31 FKBP52. Stimulating electrode was positioned in the Schaffer collaterals (between CA3 and CA1)
32 and recordings were obtained in the CA1 pyramidal neurons. A 200Hz Theta Burst stimulation was
33 given to induce LTP (indicated by the arrow). Following this, field EPSPs were measured for 60-
34 minutes. Representative traces are shown as: 1 (black) indicates baseline, 2 (teal) indicates initial
35 early LTP in the first minute following HFS, and 3 (orange) indicates late LTP in the last 60 minutes
36 of recording. Data analyzed by repeated measures two-way ANOVA. Data is shown in standard
37 error of the mean (\pm SEM). $n = 27$ for WT-GFP and $n = 23$ WT-FKBP52. AAV9, adeno-associated
38 virus serotype 9; fEPSP = field excitatory postsynaptic potential; LTP, long-term potentiation; min
39 = minutes; mV, millivolts; ms, milliseconds; Hz, hertz.



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41 **Supplementary Figure 2. Total tau levels were increased in CA3 of rTg4510-FKBP52 mice.**

42 Hippocampal slices were obtained from rTg4510 mice injected with AAV9-GFP and AAV9-

43 FKBP52. **a** Quantification of tau levels using tau (DAKO) antibody. **b** Quantification of oligomeric

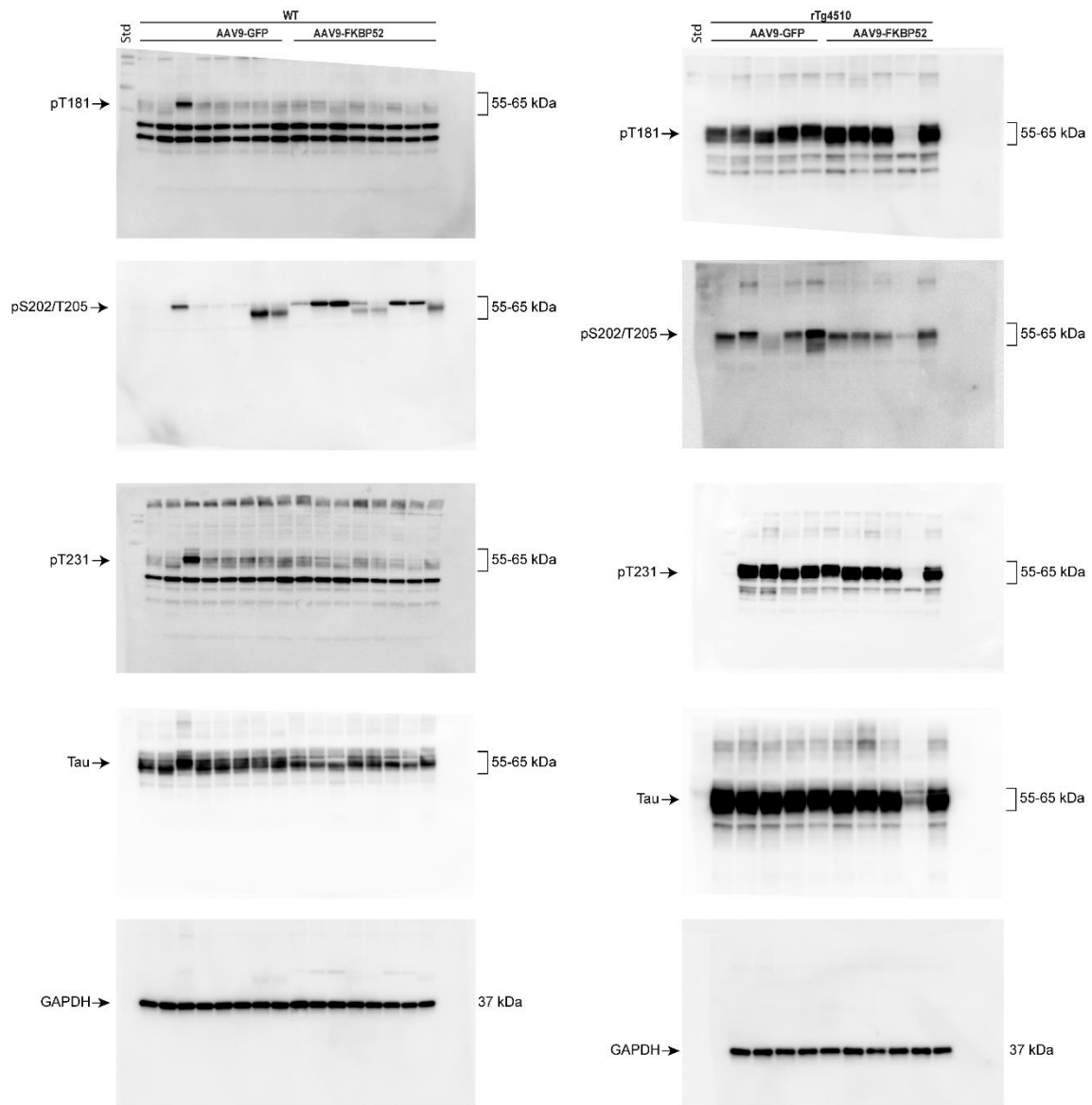
44 tau levels using T22 antibody. **c** Quantification of pS202/T205 levels (AT8 antibody) in the

45 hippocampi. Protein levels were analyzed by unpaired t-test, where statistical significance is

46 considered by * $p < 0.05$ Results represented as standard error of the mean (\pm SEM); GFP, $n = 4$;

47 FKBP52, $n = 4$).

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51 **Supplementary Figure 3. Western blot membranes for total tau and phospho-tau species.**

52 Western blot membranes of soluble fractions for total tau and tau phosphorylated species including

53 pT181, pS202/pT205 (AT8), and pT231 (AT180). Hippocampal tissue from WT and rTg4510 mice

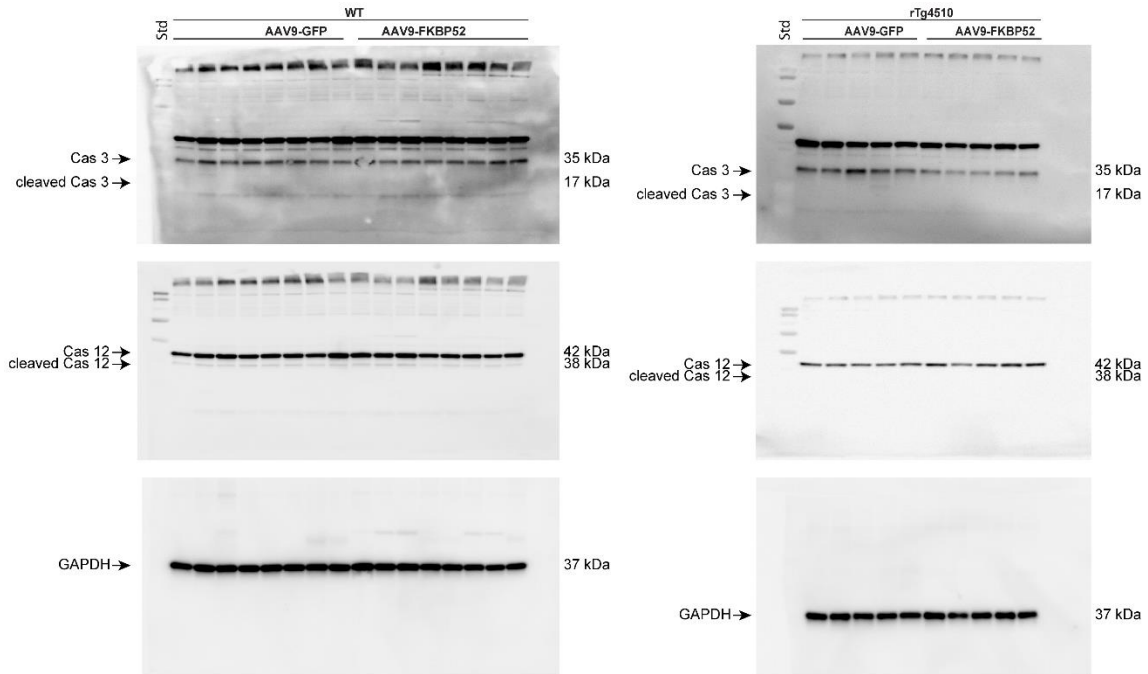
54 expressing either AAV9-GFP or AAV9-FKBP52 was used in these blots. Membranes were run in

55 parallel and derived from the same experiments. Quantification of protein was performed using

56 Image Lab (Bio-Rad) software. Total protein was normalized to GAPDH. WT-GFP (n = 8), WT-

57 FKBP52 (n = 8), rTg4510-GFP (n = 5), rTg4510-FKBP52 (n = 5). AAV9, adeno-associated virus

58 serotype 9; GFP, green fluorescent protein; GAPDH, Glyceraldehyde 3-phosphate dehydrogenase;
59 WT, wild-type; Std, Protein Standards.



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61 **Supplementary Figure 4. Western blot membranes for caspase 3 and caspase 12.**
62 Membranes were run in parallel and derived from the same experiments. Quantification of protein
63 was performed using Image Lab (Bio-Rad) software. Total protein was normalized to GAPDH. WT-
64 GFP (n = 8), WT-FKBP52 (n = 8), rTg4510-GFP (n = 5), rTg4510-FKBP52 (n = 5). AAV9, adeno-
65 associated virus serotype 9; GFP, green fluorescent protein; GAPDH, Glyceraldehyde 3-phosphate
66 dehydrogenase; WT, wild-type; Cas, caspase; kDa, kilodalton; Std, Protein Standards.

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