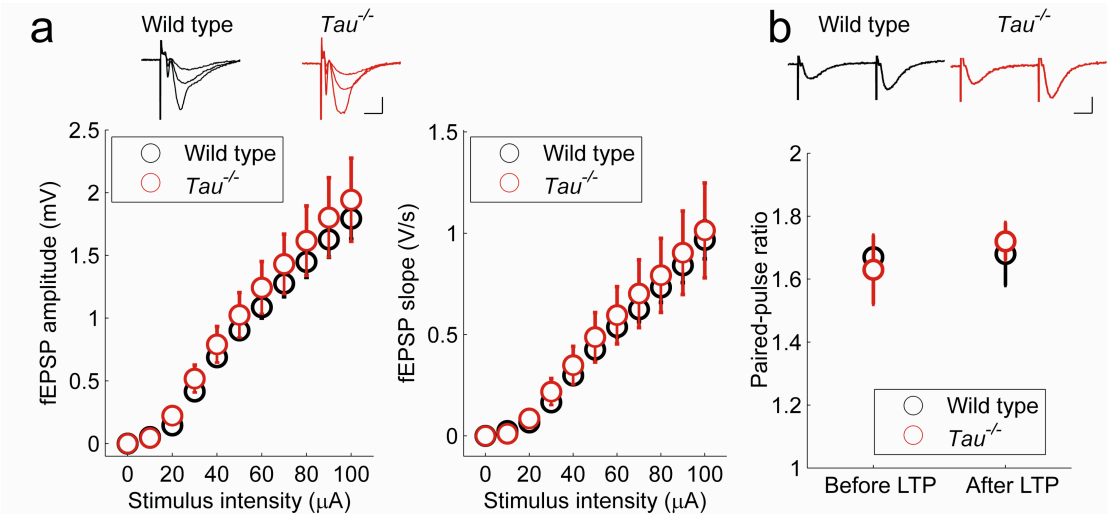
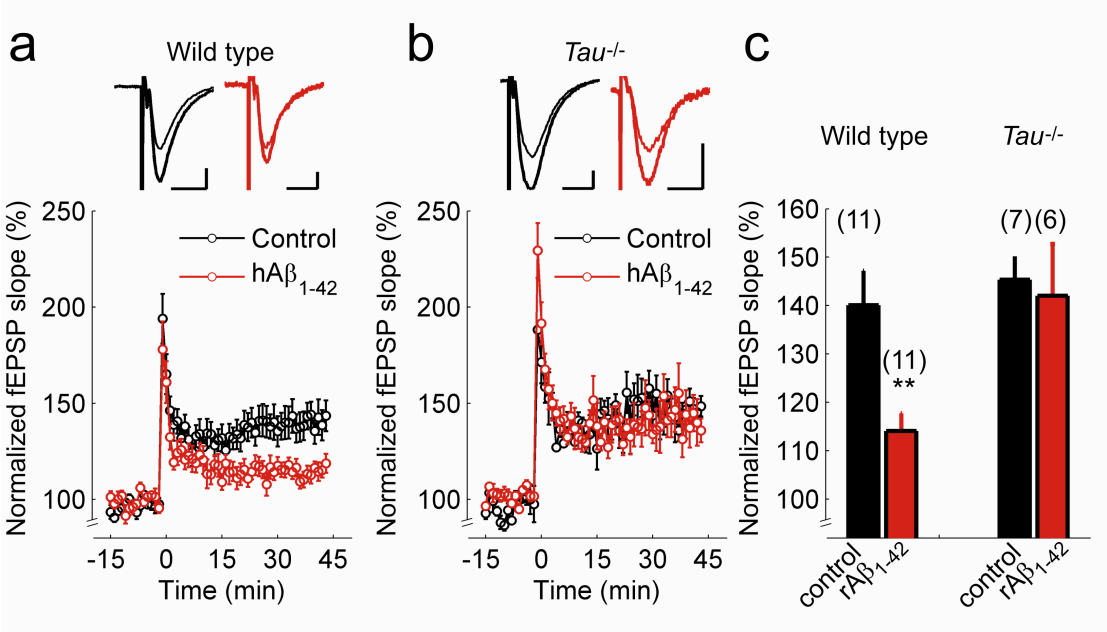
Supplemental Material

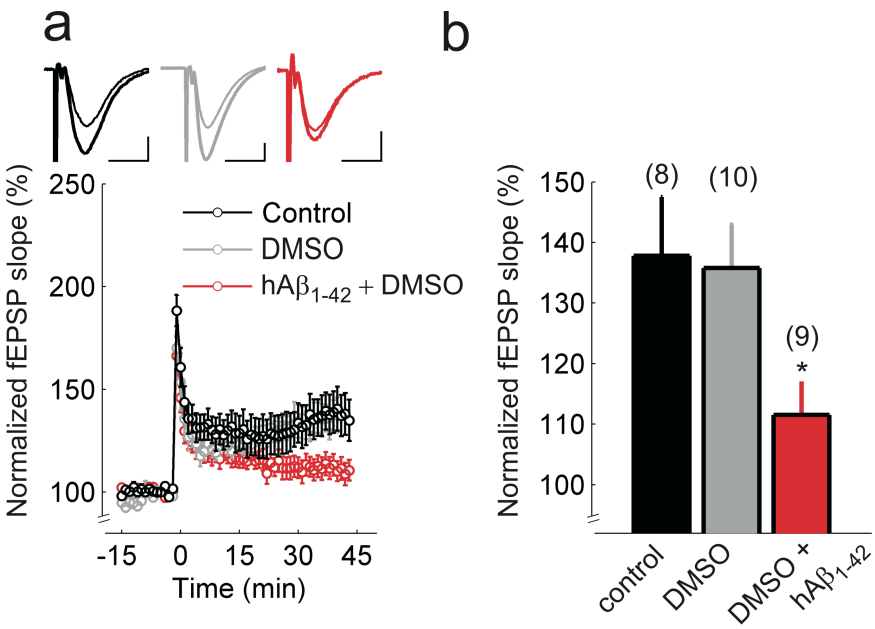
Supplementary Figures



Supplementary Figure 1. Wild-type and *Tau*$^{-/-}$ mice have similar synaptic input-output relationships and paired-pulse ratios. (a) Left panel: fEPSP amplitude for WT (black) and *Tau*$^{-/-}$ mice (red); right panel: fEPSP slope for WT and *Tau*$^{-/-}$ mice. Inset, example traces corresponding to 20, 60 and 100 μA stimulation. RM ANOVA, with genotype as the between-subjects factor and stimulus intensity as the within-subjects factor, revealed no effect of genotype (fEPSP amplitude $F_{1,36}$ = 0.33; P = 0.57; fEPSP slope: $F_{1,36}$ = 0.19; P = 0.66; WT N = 18 *Tau*$^{-/-}$ N = 20). (b) Paired-pulse ratio for WT (N = 12; black) and *Tau*$^{-/-}$ mice (N = 10; red), before and after LTP induction. Inset shows example traces for paired-pulse responses before LTP. Scale bars: 5 ms, 500 μV.



Supplementary Figure 2. Human Aβ$_{1-42}$ fails to reduce LTP in disinhibited slices of *Tau*$^{-/-}$ mice. (a, b) Hippocampal Schaffer collateral-CA1 LTP in slices from wild-type (a) and *Tau*$^{-/-}$ mice (b) in the presence of 100 nM gabazine in control ACSF (black) or after pre-incubation in hAβ$_{1-42}$ (red). The insets show superimposed example traces before and 40 min after high-frequency stimulation for each condition. Scale bars: 5 ms, 200 μV. (c) Summary of results 40-45 min after high-frequency stimulation. Error bars are s.e.m. ANOVA $F_{1,34}$ = 5.04 ** P < 0.01. The numbers of slices are shown in parentheses.



Supplementary Figure 3. DMSO treatment does not affect LTP results in control and human $A\beta_{1\text{-}42}$-treated slices. (a) Hippocampal Schaffer collateral-CA1 LTP in wild-type mice in control ACSF (black), or after incubation with 0.01% DMSO alone (gray) or 0.01% DMSO + $hA\beta_{1\text{-}42}$ (red). The insets show superimposed example traces before and 40 min after high-frequency stimulation for each condition. Scale bars: 5 ms, 200 μV. (b) Summary of results 35-40 min after high-frequency stimulation. Error bars are s.e.m. ANOVA $F_{2,26} = 3.87$ * $P < 0.05$. The numbers of slices are shown in parentheses.