# Supplementary material

Marinković et al., "*In vivo* imaging reveals reduced activity of neuronal circuits in a mouse tauopathy model"

Supplementary Figure 1:

(A) Area under the curve (AUC) of calcium transients calculated per second of recording. AUC of calcium transients during quiet (left) and active (right) state of all neurons detectable in three or more time-points. WT vehicle (black), WT Tau PFFs (cyan), P301S vehicle (green), P301S Tau-PFFs: all neurons as magenta circles, with NFT-free as magenta squares and NFT-bearing neurons as magenta triangles. Data points represent individual mice, n = 5-7 mice per group; black lines represent mean value ± SEM. ***, P < 0.001 WT vs. P301S two-way ANOVA.

(B) Cumulative frequency plots of the data shown in (A).

A

| WT vehicle | P301S vehicle | NFT-free |
| WT Tau-PFFs | P301S Tau-PFFs | NFT-bearing |

B
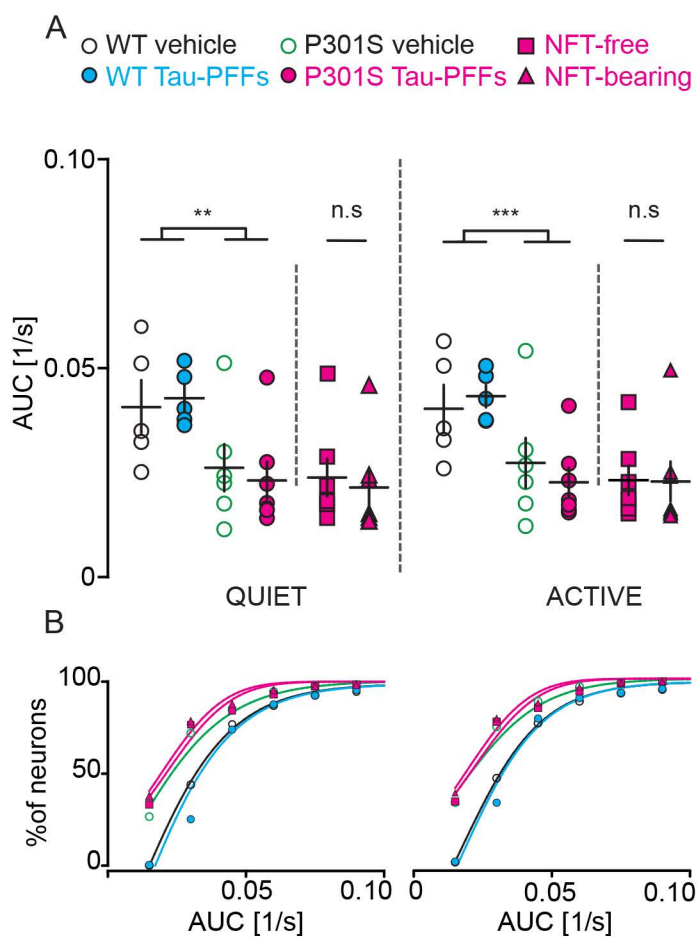
Supplementary Figure 2:

Average fraction (% mean ± SEM) with high activity (> 3 transients/min,) during quiet (left graph) and active (right graph) state averaged within 10 day-time-bins over whole experimental period. **, $P < 0.01$ WT vs. P301S (MANOVA, genotype factor) ***, $P < 0.001$ WT vs. P301S (MANOVA, genotype factor). WT vehicle (black), WT Tau PFFs (cyan), P301S vehicle (green), P301S Tau-PFFs: all neurons as magenta circles, with NFT-free as magenta squares and NFT-bearing neurons as magenta triangles.

WT vehicle   P301S vehicle   ■ NFT-free
WT Tau-PFFs   P301S Tau-PFFs   ▲ NFT-bearing

QUIET

ACTIVE

percentage of neurons

Time[days]

Marinković et al. Supp.Figure 2
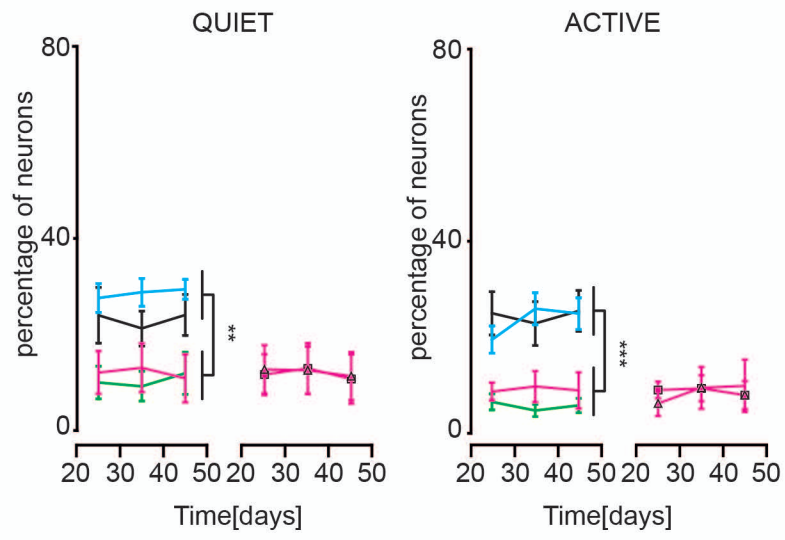
Supplementary Figure 3.

Average absolute frequency change in activity between time points for each individual neuron in early phase (< 35 days post-injection) and in the late phase (> 35 days post-injection) for quiet and active state.

QUIET

absolute frequency change [trans/min]

2

1

0

35   35   35   35   35   35

days post-injection

WT   WT   P301S   P301S   NFT   NFT
vehicle   Tau-PFFs vehicle   Tau-PFFs   free   bearing

ACTIVE

2

1

0

35   35   35   35   35   35

days post-injection

Marinković et al. Supp.Figure 3