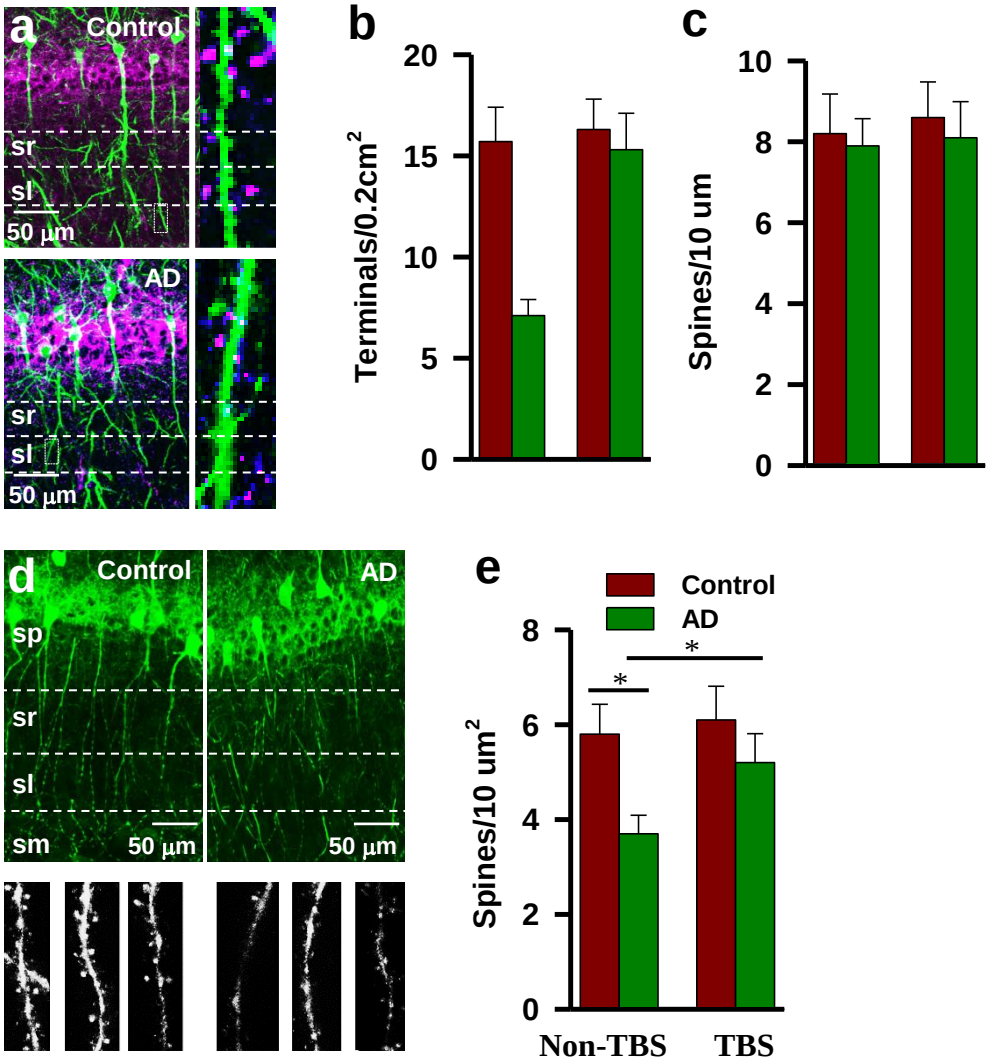
Supplementary Figure S9



Supplementary Figure S9. TBS treatment rescues a synaptic loss in $CA1_{PV}$ from AD mice. (**a**) Synaptophysin (SYT)-labeled presynaptic terminals (pink) in the CA1 hippocampus from control and AD mice, in which eGFP was expressed in the $CA1_{PN}$ (green). (**b**, **c**) Presynaptic terminals (**b**) and postsynaptic spines (**c**) in the $CA1_{PN}$ were analyzed in the CA1 sl region from control and AD mice. The mice were treated with (AD/TBS) or without (AD/non-TBS). Data are mean ± SEM (n = 4 mice per group, $*p < 0.001$, *t*-tests). (**d**) Representative images of a CA1 hippocampus from control and AD mice that expressed eGFP in $CA1_{PV}$ cells. The mice were treated with (AD/TBS) or without (AD/non-TBS). Images show the spines in the PV dendritic branches in the CA1 sl region, a terminal projection zone of $ECII_{PN}$. (**e**) Spine densities in the $CA1_{PV}$ of AD are reduced and rescued by TBS treatment. Data are mean ± SEM (n = 4 mice per group, $*p < 0.001$, *t*-tests). In this study, $AD/ECII_{PN}^{ChR2+}$ (AD mice) mice were crossed with the CaMK-IIα-Cre (**a**) or the PV-Cre (**d**) mice and stereotaxically injected with 2 μl of a high titer of the lenti-$eGFP^{loxP/loxP}$ virus particles (3×10^{11} genomic particles/ml) in the CA1 region, resulting in eGFP expression in the $CA1_{PN}$ or the $CA1_{PV}$ of $AD/ECII_{PN}^{ChR2+}$ mice. Presynaptic terminals and the dendritic branches (20 μm segment) from the $CA1_{PN}$ (50 segments per animal) and the $CA1_{PV}$ (50 segments per animal) in the sl region were studied. The averaged spine densities (spines per 10 μm^2 length of dendrites) was analyzed 25 days after 35-days TBS treatment.

so: stratum oriens; sp: stratum pyramidale; sr: stratum radiatum; sl: stratum lacumosum; sm: stratum moleculare.