Supplementary Figure S3

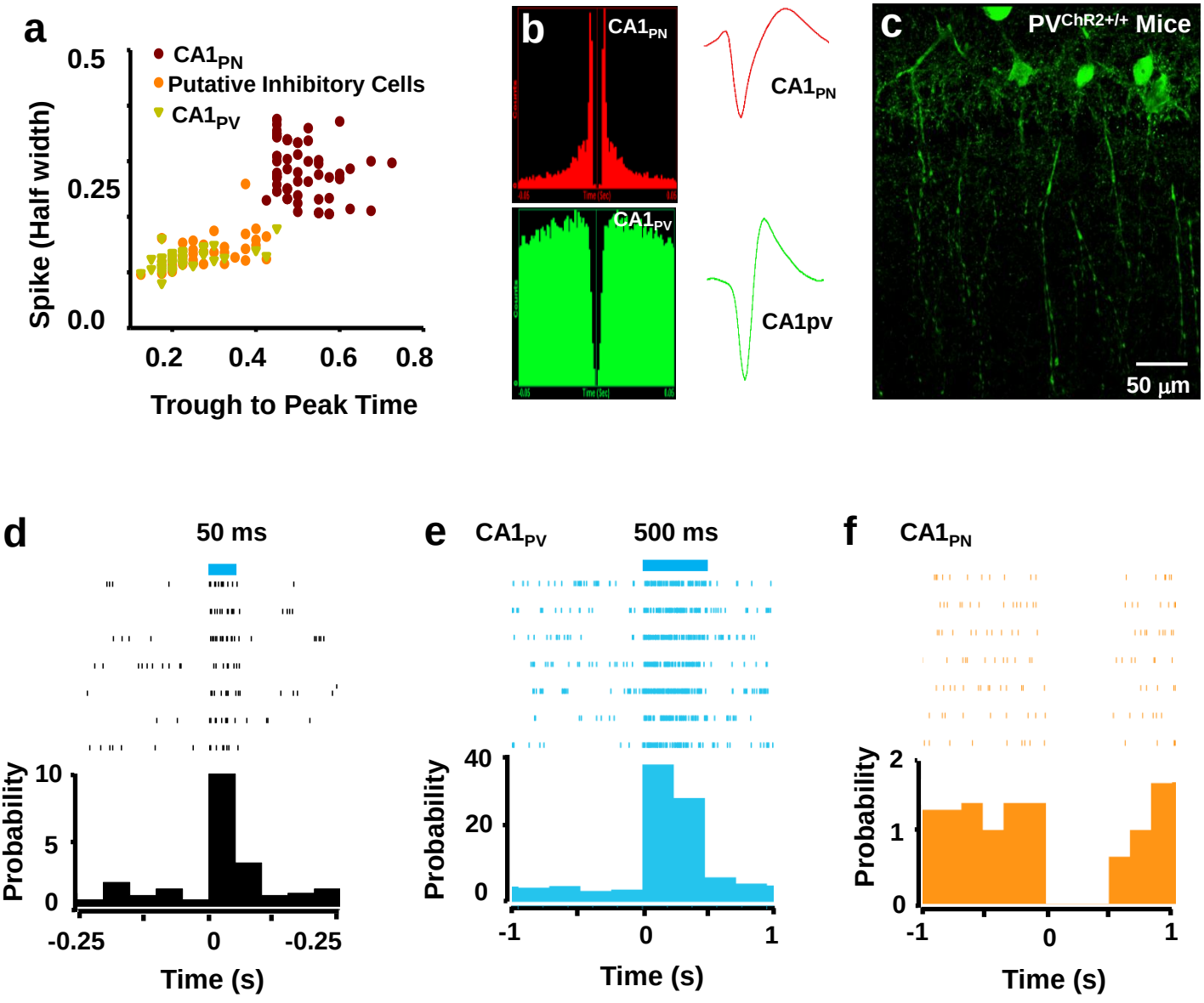

Figure S3. Recordings of action potential firings in $CA1_{PV}$ versus $CA1_{PN}$ in freely moving mice. (**a**) Action potential firings in the CA1 hippocampus of freely moving male $PV^{ChR2+/+}$ mice at 120±2 days old of age are classified into three groups; $CA1_{PN}$, CA1 putative inhibitory cells based on waveform properties, $CA1_{PV}$ units were isolated by blue laser lights. (**b**) Representative wave forms and traces are classified as the recordings from $CA1_{PN}$ (red) and $CA1_{PV}$ (green) of freely moving male $PV^{ChR2+/+}$ mice at 120±2 days old of age. (**c**) A representative image shows the expression of ChR2-eGFP in PV cells of a C57Bl/6 mouse ($PV^{ChR2+/+}$ mouse). (**d**) $CA1_{PV}$ in freely moving $PV^{ChR2+/+}$ mice at 120 days old of age were reliably activated by a 50 ms blue laser light (blue bar). (**e** and **f**) Sustained activation of $CA1_{PV}$ (**e**) by delivery of 500 ms blue laser lights (blue bar) inhibits the nearby $CA1_{PN}$ (**f** firings in freely moving $PV^{ChR2+/+}$ mice. The similar results were seen in each of six mice. Note: in this study, we generated transgenic mice ($CA1_{PV}^{ChR2+/+}$ mice) expressing ChR2-eGFP in PV neurons by crossing the $ChR2^{loxP/loxP}$ mice with the male PV-Cre mice at 120 ± 2 days of age. The male PV-Cre mice 120 ± 2 days of age were used for breeding because during that period of time they show a high rate of success in mating with the female $ChR2^{loxP/loxP}$ mice.