Supplementary table 1

Figure 1e

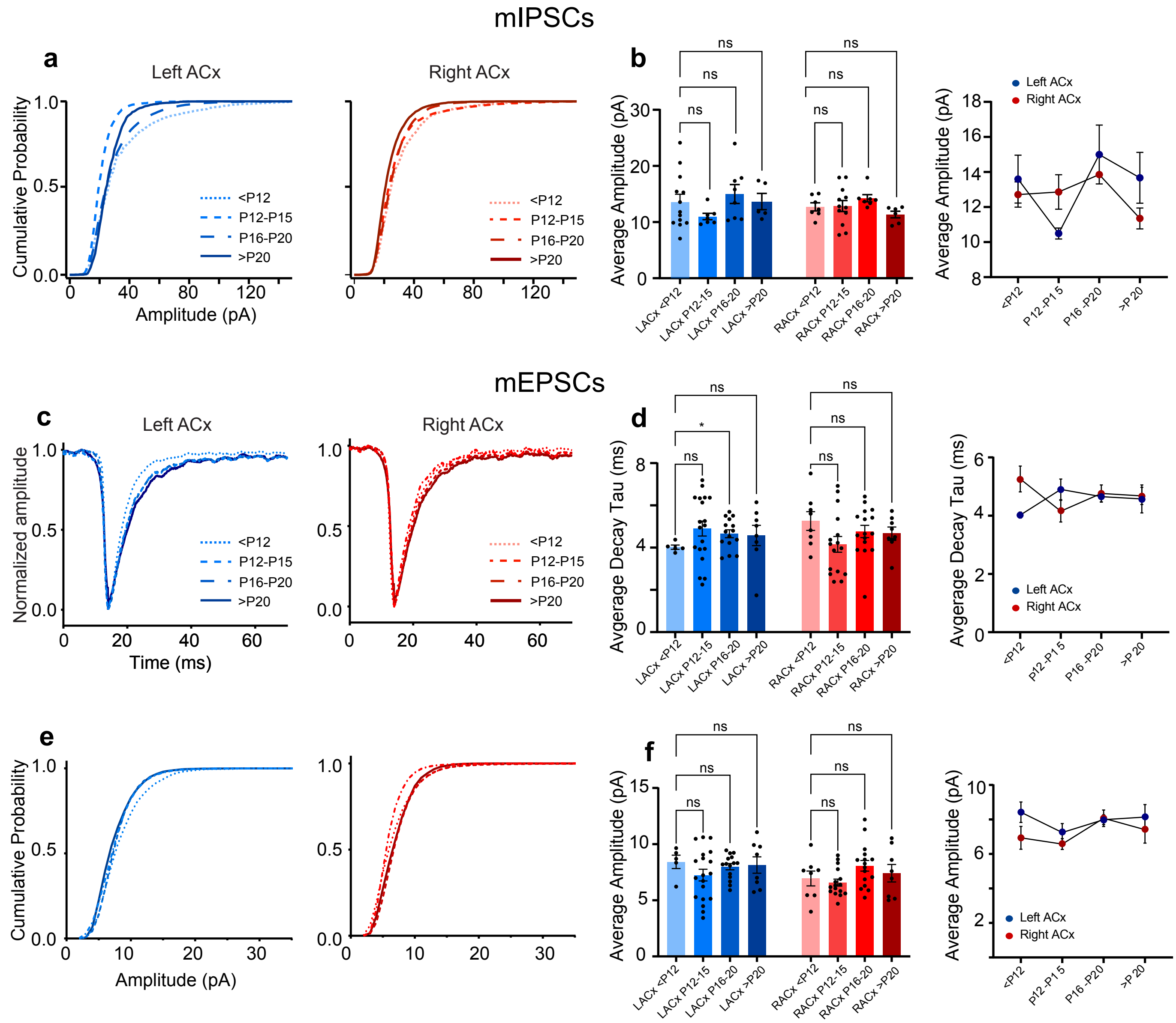
Cortical depth 25^{th} percentile	**p-values**, Welch's ANOVA test, post hoc Dunnett's t test
LH <P14 vs. LH P14-P16	ns
LH <P14 vs. LH >P16	<0.0001
RH <P14 vs. RH P14-P16	0.0214
RH <P14 vs. RH >P16	0.0023
Cortical depth 50^{th} percentile	
LH <P14 vs. LH P14-P16	ns
LH <P14 vs. LH >P16	<0.0001
RH <P14 vs. RH P14-P16	0.0022
RH <P14 vs. RH >P16	0.0001
Cortical depth 75^{th} percentile	
LH <P14 vs. LH P14-P16	ns
LH <P14 vs. LH >P16	<0.0001
RH <P14 vs. RH P14-P16	0.0025
RH <P14 vs. RH >P16	0.0011

Figure 1f

VSD center of mass	**p-values**, Welch's ANOVA test, post hoc Dunnett's t test
LH <P14 vs. LH P14-P16	ns
LH <P14 vs. LH >P16	<0.0001
RH <P14 vs. RH P14-P16	0.0028
RH <P14 vs. RH >P16	0.0001

Within hemisphere statistical data for Figure 1: Hemispheric differences in the maturation of thalamocortical input to the ACx.

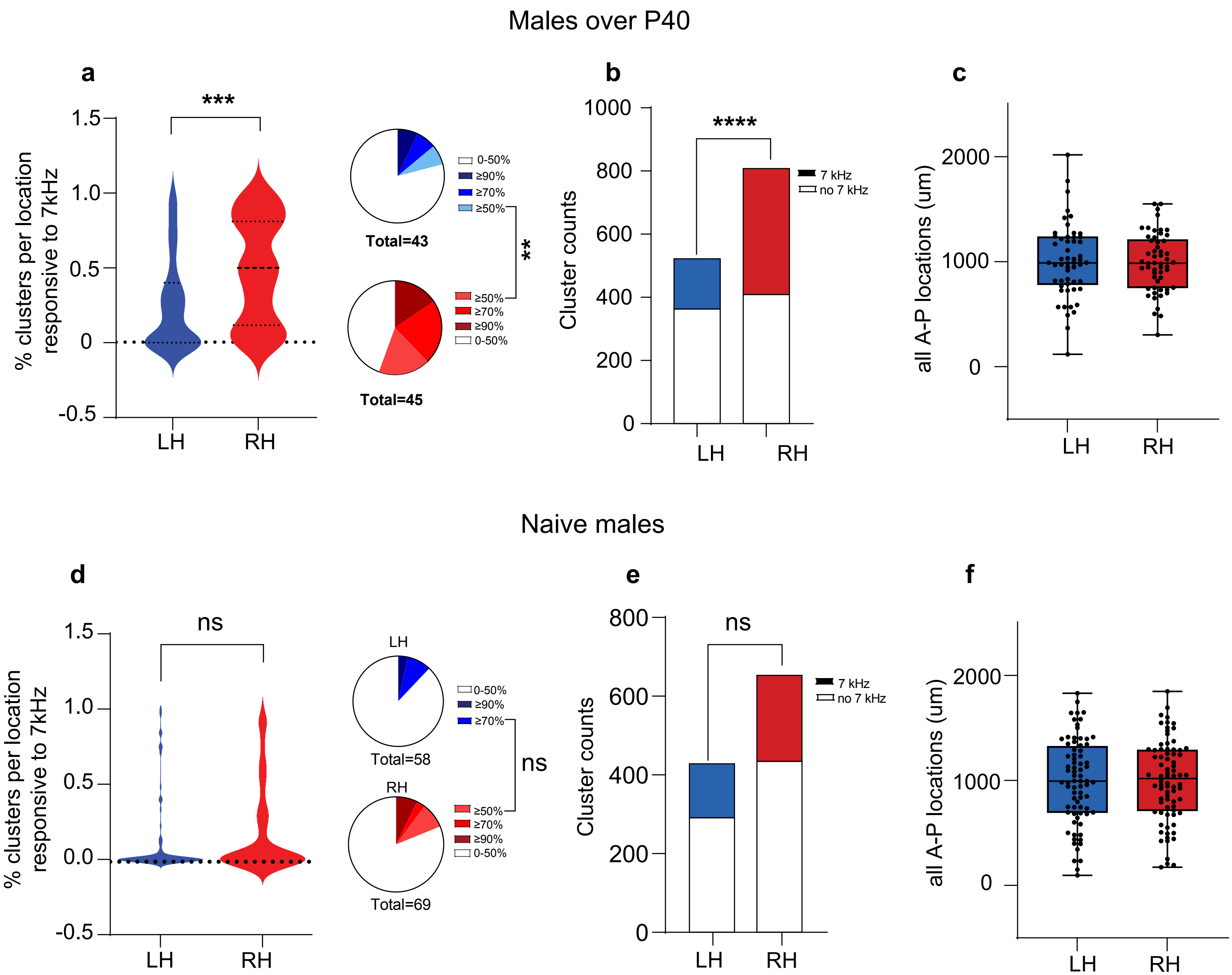
Supplementary Figure 1



Supplementary Figure 1

Maturation of inhibitory synaptic input in the ACx. a, Quantification, and comparison of mIPSC amplitude during development within hemispheres shows no statistically significant difference. **b (left panels)**, Comparison to youngest group within each hemisphere. Left ACx: <P12 (n=13 cells) vs. P12-P15 (n=7), p=ns; <P12 vs. P16-P20 (n=8), p=ns; <P12 vs. >P20 (n=5), p=ns. Right ACx: <P12 (n=17) vs. P12-P15 (n=8), p=ns; <P12 vs. P16-P20 (n=9), p=ns; <P12 vs. >P20 (p=6), p=ns, Welch's ANOVA test, post hoc Dunnett's t test. **b (right panel)**, Comparison of mIPSC amplitude during development between hemispheres shows no statistically significant difference (<P12, p=ns, n=13 and 17 cells, Left and Right ACx, respectively; P12-P15, p=ns, n=7 and 8; P16-P20, p=ns, n=8 and 9; >P20, p=ns, n=5 and 6; Unpaired Welch's t-test, Holm-Šídák correction). N=14 mice. **Maturation of excitatory synaptic input in the ACx. c**, Normalized mEPSCs illustrate developmental changes in the decay time constant. **d (left panel)**, Quantification of mEPSC decay time constant maturation within each hemisphere. (Comparison to youngest group within each hemisphere. Left ACx: <P12 (n=5 cells) vs. P12-P15 (n=19), p=ns; <P12 vs. P16-P20 (n=15), p=<0.045; <P12 vs. >P20 (n=8), p=ns. Right ACx: <P12 (n=8 cells) vs. P12-P15 (n=16), p=ns; <P12 vs. P16-P20 (n=16), p=ns; <P12 vs. >P20 (p=8), p=ns, Kruskal-Wallis, post hoc Dunn's multiple comparisons test). **d (right panel)**, Comparison of developmental changes in mEPSC decay time constant between the hemispheres (<P12, p=ns, n=5 and 8 cells, Left and Right ACx, respectively; P12-P15, p=ns, n=19 and 16 cells; P16-P20, p=ns, n=15 and 16; >P20, p=ns, n=8 and 8, Multiple Mann Whitney test, Holm-Šídák correction). **e,** Cumulative histograms of mEPSC amplitude from the Left and Right ACx at 4 age groups. **f (left panel)**, Quantification, and comparison of mEPSC amplitude during development within hemispheres shows no statistically significant difference (Comparison to youngest group within each hemisphere. Left ACx: <P12 (n=5 cells) vs. P12-P15 (n=19), p=ns; <P12 vs. P16-P20 (n=15), p=ns; <P12 vs. >P20 (n=8), p=ns. Right ACx: <P12 (n=8 cells) vs. P12-P15 (n=16), p=ns; <P12 vs. P16-P20 (n=16), p=ns; <P12 vs. >P20 (p=8), p=ns, Kruskal-Wallis, post hoc Dunn's multiple comparisons test). **f (right panel)**, Comparison of mEPSC amplitude during development between hemispheres shows no statistically significant difference (<P12, p=ns, n=5 and 8 cells, Left and Right ACx, respectively; P12-P15, p=ns, n=19 and 16 cells; P16-P20, p=ns, n=15 and 16; >P20, p=ns, n=8 and 8, Multiple Mann Whitney test, Holm-Šídák correction). N=17 mice. All statistical tests performed were two-sided. Data are presented as mean values +/- SEM; center of the error bars represent the mean.

Supplementary Figure 2



Supplementary Figure 2

a, Males older than P40 show significant 7kHz overrepresentation. Percentage of putative individual clusters responding to 7kHz at a given location (Mann-Whitney, p< <0.0001 violin plots), and pie charts showing the fraction of locations with more than 50% of clusters responsive to 7kHz (Fisher's exact test p<0.001). **b**, The relationship between brain hemisphere and the responsiveness of individual clusters to 7kHz tones is statistically significant (solid=responsive, empty=not responsive). The Fisher's exact test indicates that the Right ACx had more clusters responsive to tones close to 7kHz compared to the Left, p<0.0001. Left ACx n=54 and Right ACx n=54 total recording locations, from 5 and 6 mice, respectively. **c**, Anatomical positions of all recording locations organized along the anterior-posterior axis of the ACx. **d**, There is no significant overrepresentation of 7kHz in naïve mice. Percentage of putative individual clusters responding to 7kHz at a given location (Mann-Whitney, p=ns violin plots), and pie charts showing the fraction of locations with more than 50% of clusters responsive to 7kHz (Fisher's exact test p=ns). **e**, There was no relationship between brain hemisphere and the responsiveness of individual clusters to 7kHz tones (solid=responsive, empty=not responsive). The Fisher's exact test indicates that neither the Right nor the Left ACx have differences in clusters responsive to tones close to 7kHz. Left ACx n=76 and Right ACx n=78 total recording locations, from 6 animals. **f**, Anatomical positions of all recording locations organized along the anterior-posterior axis of the ACx. All statistical tests performed were two-sided. Dashed lines through violin plots depict quartiles. Data are presented as mean values +/- SEM; center of the error bars represent the mean.