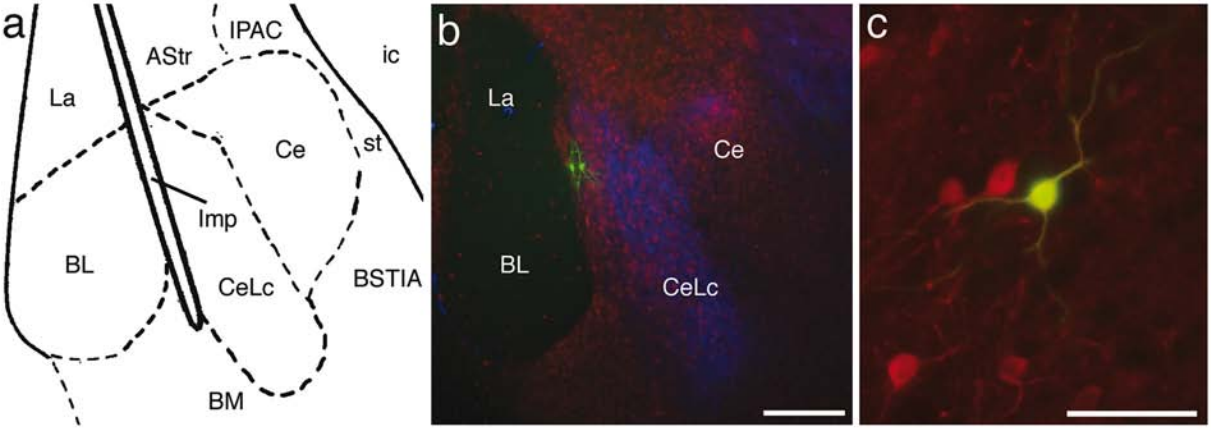
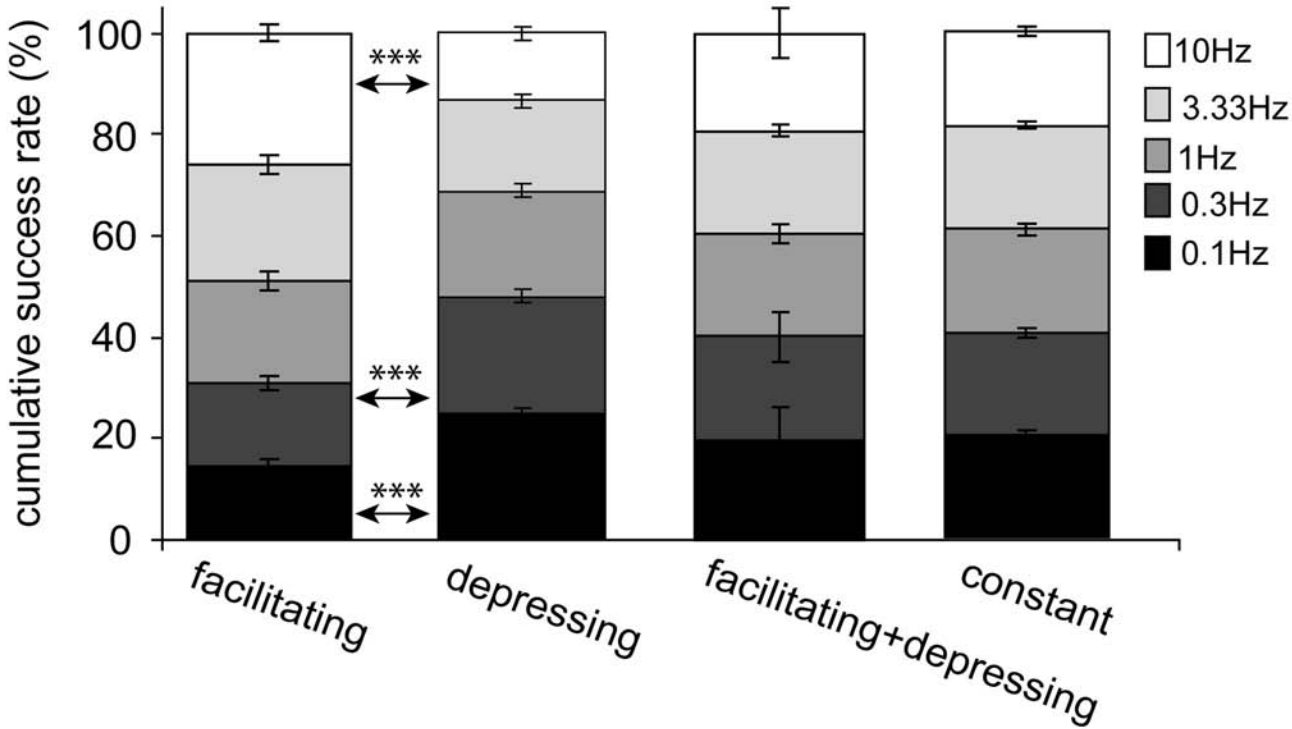
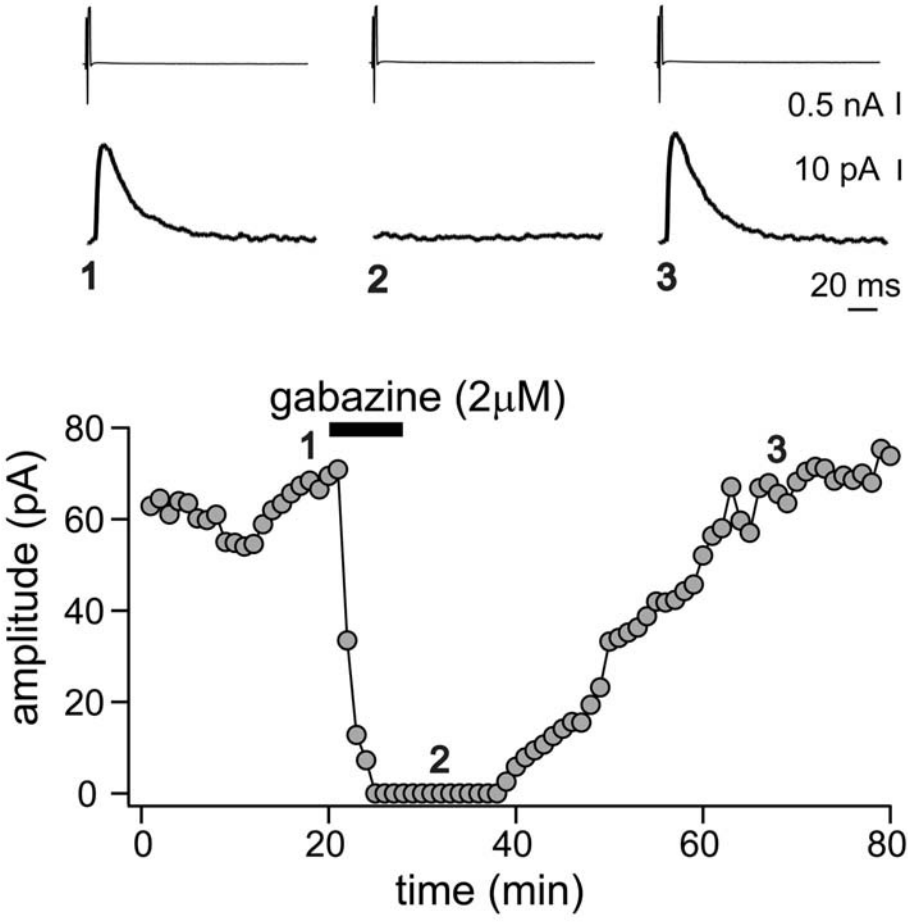


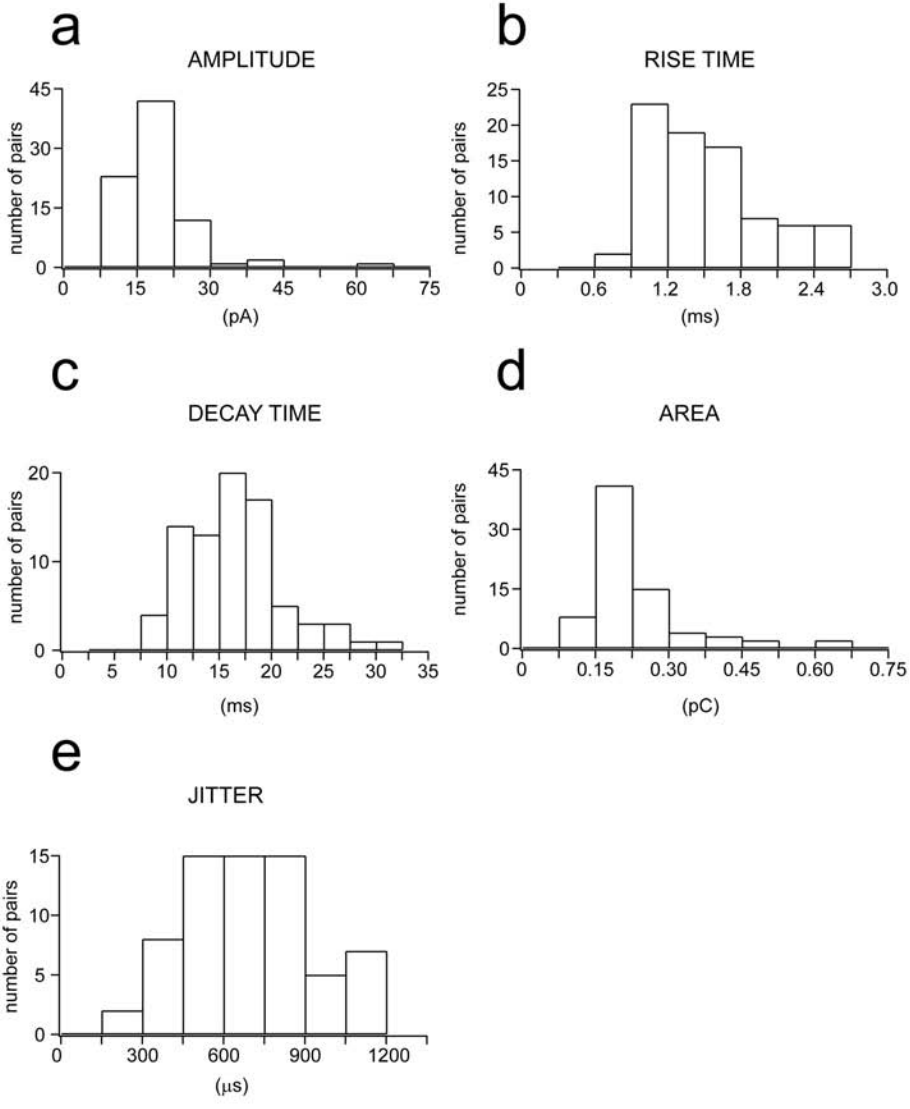
Supplemental Figure 1. Fluorescence micrographs of fixed coronal slices of the amygdala from GAD65-GFP transgenic mice. (a) Schematic drawing of the main anatomical subdivisions of the deep nuclei of the amygdala at the bregma level of the section shown in (b). (b) The density of distribution of GAD65-GFP immunopositive neurons, shown here in red, was highest in the Imp and Ce nuclei, whereas it was low in the basolateral complex. Immunoreactivity for Leu- and Met enkephalin (in blue) helped the identification of the subnuclear structures. Two recorded biocytin-filled neurons (here shown in green), which were synaptically-coupled, can be observed within the intermediate capsule. A merged image (c) shows a double labelled neuron (in yellow) stained for GFP (in red) and strepavidin-AMCA (in green) which visualizes biocytin. In several instances, the recorded Imp neurons did not display GFP-immunoreactivity, as it can be observed for the cells in (b). Abbreviations: AStr, Amygdalo-Striatal transition zone; BL, basolateral nucleus; BM, basomedial nucleus; BSTIA, intramaygdaloid bed nucleus of the stria terminalis; Ce, central nucleus; CeLc, capsular part of the lateral subdivision of the Ce nucleus; ic, internal capsule; Imp, medial paracapsular intercalated cells, IPAC, interstitial nucleus of the posterior limb of the anterior commissure; La, lateral nucleus; st, stria terminalis. Scale bars: b=200 μm, c=50 μm.



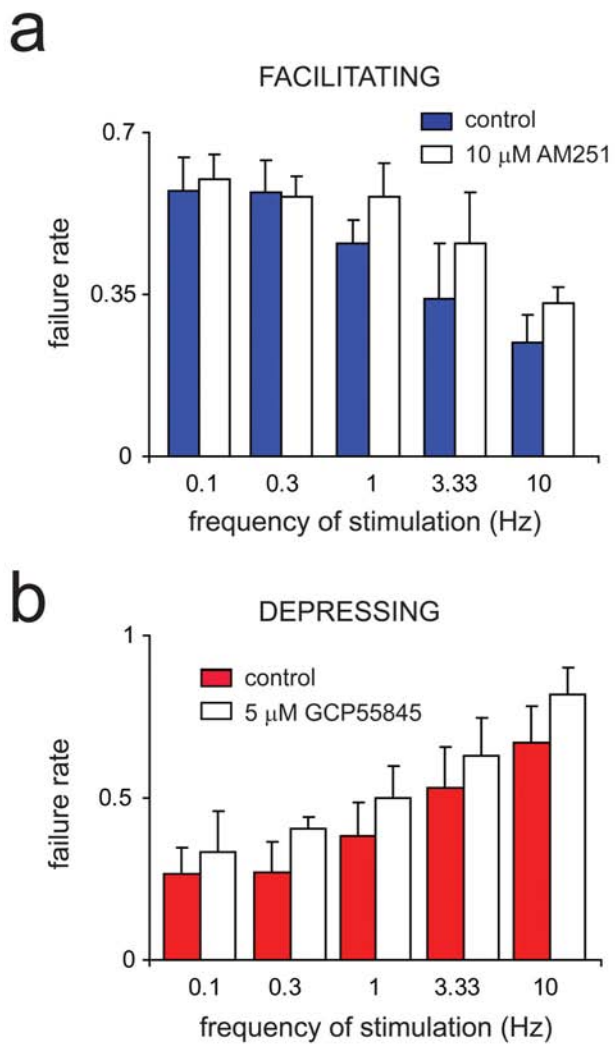
Supplemental Figure 2. Overall synaptic inhibitory events rate is constant within the Imp network. The histograms show mean and SEM of success rates of uIPSCs for each frequency of stimulation (range: 0.1-10Hz) in (from left to right): facilitating (n=25), depressing (n=29), average of facilitating + depressing and constant (n=34) connections. The values in facilitating versus depressing connections were significantly different for stimulations at 0.1, 0.3 and 10Hz (*** denotes $p<0.001$, Mann-Whitney U test), but not at 1 and 3.33Hz since these are the frequencies around where the success rate of facilitating and depressing groups tends to similar values.



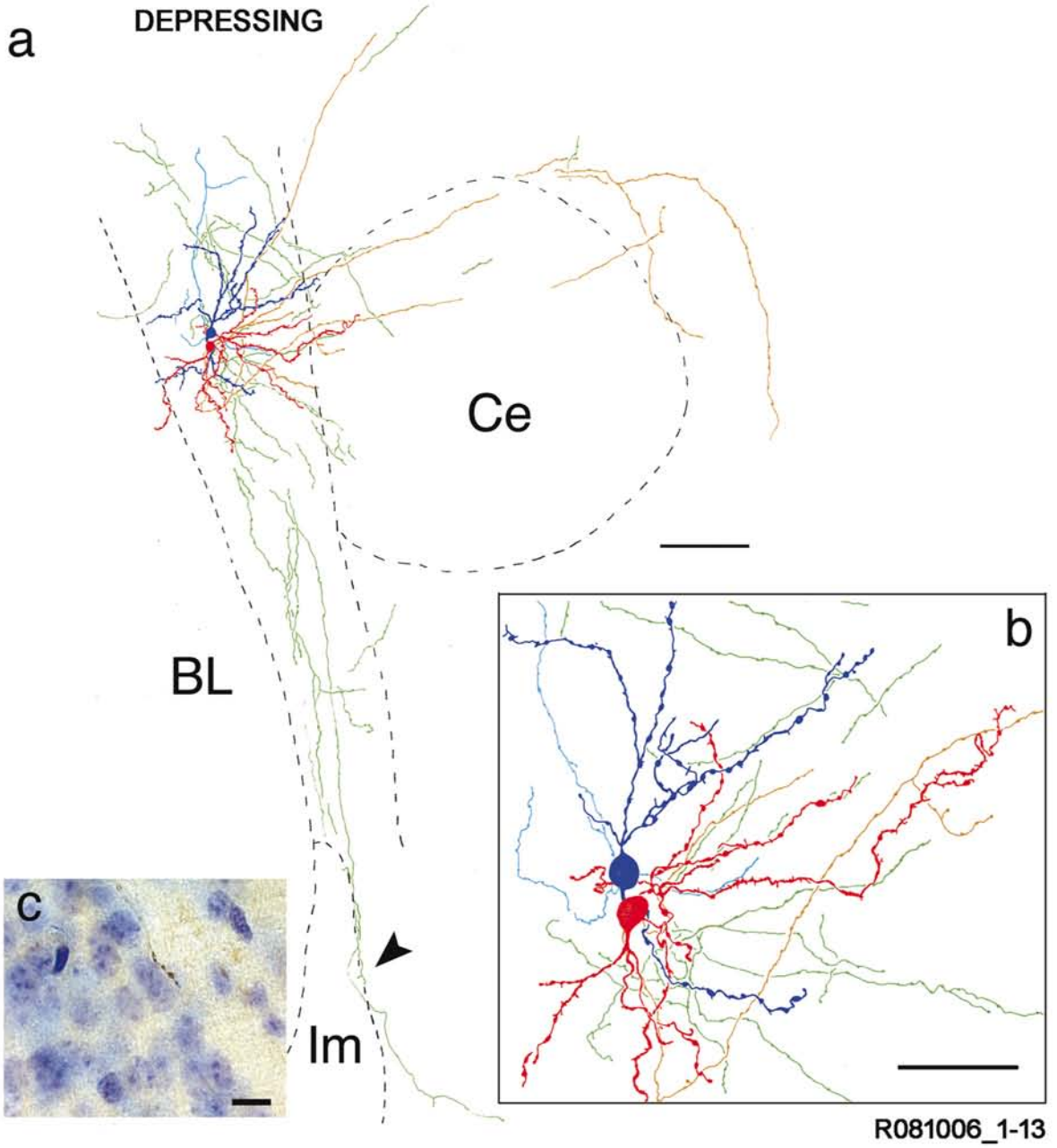
Supplemental Figure 3. Unitary IPSCs are stable over time and entirely mediated by $GABA_A$ receptors. Presynaptic action currents (*top*), single uIPSCs (*center*), and plot of the uIPSCs amplitude versus time (*bottom*). The uIPSC was reversibly abolished by bath application of the selective $GABA_A$ antagonist gabazine.



Supplemental Figure 4. Properties of synaptic transmission between Imp neurons. Histograms of peak amplitude (excluding failures) (a), 20-80% rise time (b), decay time (c), area (d), jitter (e) (n=70-83) of uIPSCs. Data are from uIPSCs evoked at frequencies of stimulation eliciting the highest number of events for each cell pair. Note the presence of a few outliers in the plots of amplitude (>30pA) and area (>0.3pC).



Supplemental Figure 5. Presynaptic CB_1 or $GABA_B$ receptors do not affect the failure rate of synaptic transmission between Imp neurons. Pooled data of failure rates occurring after stimulation of presynaptic neurons at different frequencies of stimulation (0.1-10Hz) in control and during AM251 (a, facilitating) or CGP55845 (b, depressing).



Supplemental Figure 6. Reconstruction of another representative cell pair between Imp neurons with depressing synaptic responses. Soma and dendrites of the presynaptic Imp neuron are drawn in red and its axonal arborizations are drawn in orange. Soma and dendrites of the postsynaptic Imp neuron are drawn in dark blue, and its axonal arborizations are drawn in light blue. Portions of axons that could not be clearly associated with one of the two neurons are drawn in green. The delineation of the boundaries of the different amygdaloid nuclei is drawn from the section containing the somata. Note that axons of the presynaptic cell course through the dorsal edge of the central nucleus and medially towards the stria terminalis/internal capsule to turn then ventrally to the area of the intra-amygdaloid bed nucleus of the stria terminalis. Axonal branches can also be observed running ventrally in the intemediate capsule to reach and innervate neurons in the Im border or to continue further ventro-medially. Details of the neurons obtained from a partial reconstruction (from 2 sections) at high magnification (100x oil) are given in (b). A labelled axon with several varicosities laying onto an Im neurons is shown in (c). The location of the axonal branches displayed in (c) is indicated by an arrowhead in (a). BL, basolateral nucleus; Ce, central nucleus; Im, large intercalated cell mass. Scale bars: a, 100 μm; b; 50 μm; c, 10 μm.

	Facilitating	Depressing	Constant
Rigorously identified Imp's with full morphological characterization (see table below).	n = 13	n = 14	n = 21
Rigorously identified Imp's without full morphological characterization.	n = 12	n = 12	n = 10
Tentatively identified Imp's without full morphological characterization.	n = 0	n = 3	n = 3
Total number of cell pairs used for the electrophysiological experiments.	n = 25	n = 29	n = 34

Connected pairs, grouped	Size of perikaryon, in µm				Dendritic appearance, number of spines				Projections								
		<19	19-25	>25		aspiny / poorly	medium	highly		Ip	Im	Ce	La, BL	BM, Me	IPAC AStr	CPu	Ce - ic
Facilitating																	
R092205 16-58		x, x					x, x		nd								
R101205 1-45	nd					x	x			x		x					
R110905 1-40	nd						x, x		nd								
R022706 21-56		x	x				x, x					x	x				
R030906 3-34		x, x					x, x			x		x	x				
R041006 4-41	nd		x				x	x		x		x					
R042006 2-13			x, x				x	x		x		x		x	x		
R042006 18-38	nd		x				x	x			x	x		x			
R051006 8-32			x	x			x, x			x	x	x		x			
R072006 1-30	nd							x, x		x		x					
R072905 22-60		x, x					x, x			x		x					
R080806 1-17		x	x					x, x		x		x		x			x
R120606 1-14		x	x			x	x			x		x	x		x		
Depressing																	
R100305 2-16		x	x					x, x	nd								
R110905 62-97		x	x				x, x		nd								
R031306 1-49			x, x					x, x		x					x		x
R032306 17-40			x, x					x, x		x						x	x
R040406 34-64	nd	x					x			x				x			x
R040506 2-34			x	x			x	x		x	x			x			x
R050506 1-36		x, x					x, x			x		x				x	
R050506 41-81		x	x			x		x		x	x	x			x		
R071406 1-19		x	x					x, x		x				x			x
R081006 1-13		x, x				x	x			x	x	x	x		x		x
R111606 1-14		x, x				x	x			x		x	x				
R120606 33-41	nd		x				x	x		x				x			x
R122006 32-59	nd	x				x				x		x			x		
R122006 60-75		x, x				x	x			x					x		x
Constant																	
R110805 3-10	nd					x	x			x		x	x				
R122205 14-43		x	x				x, x			x		x					
R1222a05 4-24	nd					x, x			nd								
R012306 1-32		x, x					x, x									x	
R013106 1-36	nd		x		nd		x										x
R020206 3-47		x	x			x	x			x		x	x	x		x	
R020906 1-55		x, x				x, x				x		x		x			
R022706 1-16	nd				nd	x				x	x	x	x			x	
R030806 1-22	nd	x				x, x				x							
R042606 1-32			x	x			x	x	nd								
R071806 1-31			x, x			x		x		x	x	x	x				
R072406 1-31		x	x					x, x		x					x		x
R072806 1-8	nd		x					x, x		x		x					
R072806 13-18	nd	x					x, x					x			x		
R080806 18-37	nd	x					x, x			x	x	x					
R100206 1-23		x, x					x, x			x		x	x				x
R110206 1-26			x, x				x, x			x	x	x		x			
R112006 1-7		x	x			x, x				x		x			x		
R120806 1-20			x, x			x	x			x	x		x	x			
R120806 21-26	nd	x				x, x				x	x			x			
R121806 1-17	nd		x				x	x		x		x					

Supplemental Table 1. Morphological characterization of medial paracapsular intercalated neurons (Imp) used for pair recordings with x indicating the attribution to an arbitrarily chosen morphological class. Size of the perikaryon, appearance of the dendritic shaft and number of spines were analyzed for each cell of a pair. In case of projections, axons of both cells were not distinguished from each other. The number of neurons showing a medium to high density of spines was different in facilitating versus constant or depressing synapses ($p<0.005$ or $p<0.05$, respectively, Chi square test). Abbreviations were used according to Alheid et al., 1994: AStr, amygdalostriatal transition zone; BL, basolateral amygdaloid nucleus; BM, basomedial amygdaloid nucleus; Ce, central amygdaloid nucleus, CPu, caudate putamen; ic, internal capsule; Im, large intercalated cell mass; Ip, paracapsular intercalated cell clusters; IPAC, interstitial nucleus of the posterior limb of the anterior commissure; La, lateral amygdaloid nucleus; Me, medial amygdaloid nucleus. nd, not determined.