Biochemists use enzymes to change how brain cells communicate with each other

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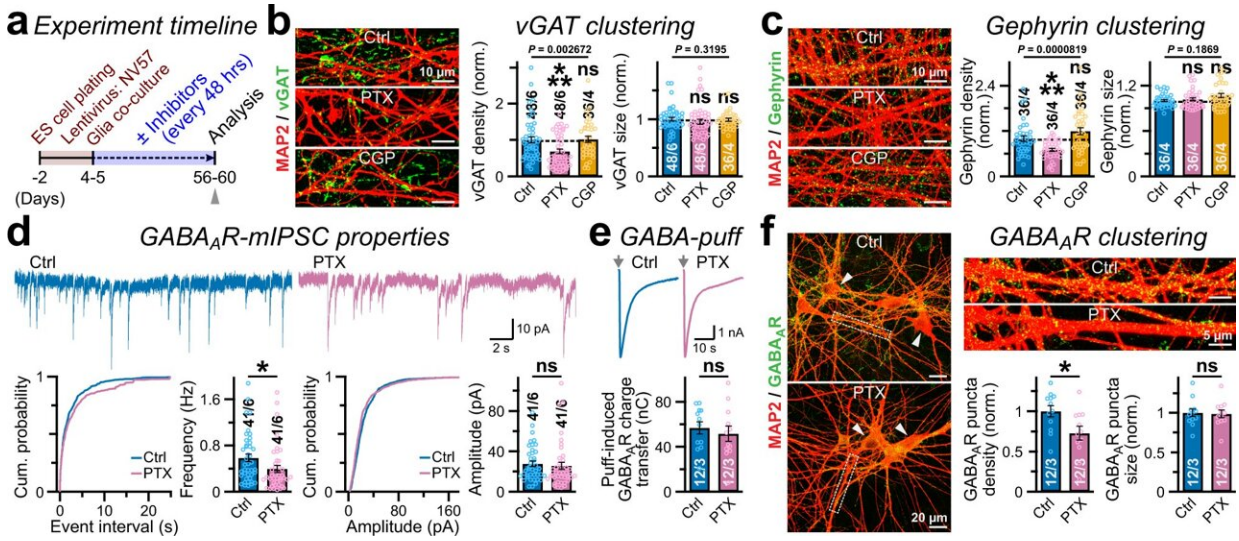

GABAergic synapse properties are modulated by $GABA_AR$ activity. a Experimental strategy for panels b–f; NV57 neurons were incubated with synaptic inhibitors, half-exchanged media every other day from post-induction day 4–5 to day 56–60, and analyzed afterwards as indicated (arrow). b, c Sample images (left) and normalized density or size (right) of vGAT b and Gephyrin c clusters formed on MAP2-positive dendrites, when treated with DMSO-only (control), 100 µM PTX, or 10 µM CGP55845. d Representative mIPSC waveforms (top) and event frequency or amplitude (bottom) plotted as cumulative distribution (left) with summary graphs (right), for control vs. PTX-treated (long-term) neurons. Cultures were washed thoroughly with bath-solution before electrophysiological recordings; CNQX was used to stop EPSCs. e Example traces (top) of $GABA_AR$ currents produced by 1 mM GABA-puff, and total charge-transfer (bottom). f Sample images (left) of control vs. PTX-treated neurons (arrowheads), as immunostained for extracellular epitopes of surface

$GABA_A$Rs and dendritic MAP2. Boxed regions are magnified (cropped insets, top right), normalized density and sizes of $GABA_A$R clusters are plotted (bottom right), for control vs. PTX-treatment. All summary data are means ± SEM, with total number of cells recorded (electrophysiology) or field-of-views analyzed (imaging) / independent batches, and individual data-points were included as open circles. A near-normal distribution was predicted for most datasets, based on Skewness or Kurtosis values (-2 >≈ and ≈ < 2). Hence, statistical significance was primarily assessed by two-tailed, unpaired, Student's t-test, with ***P