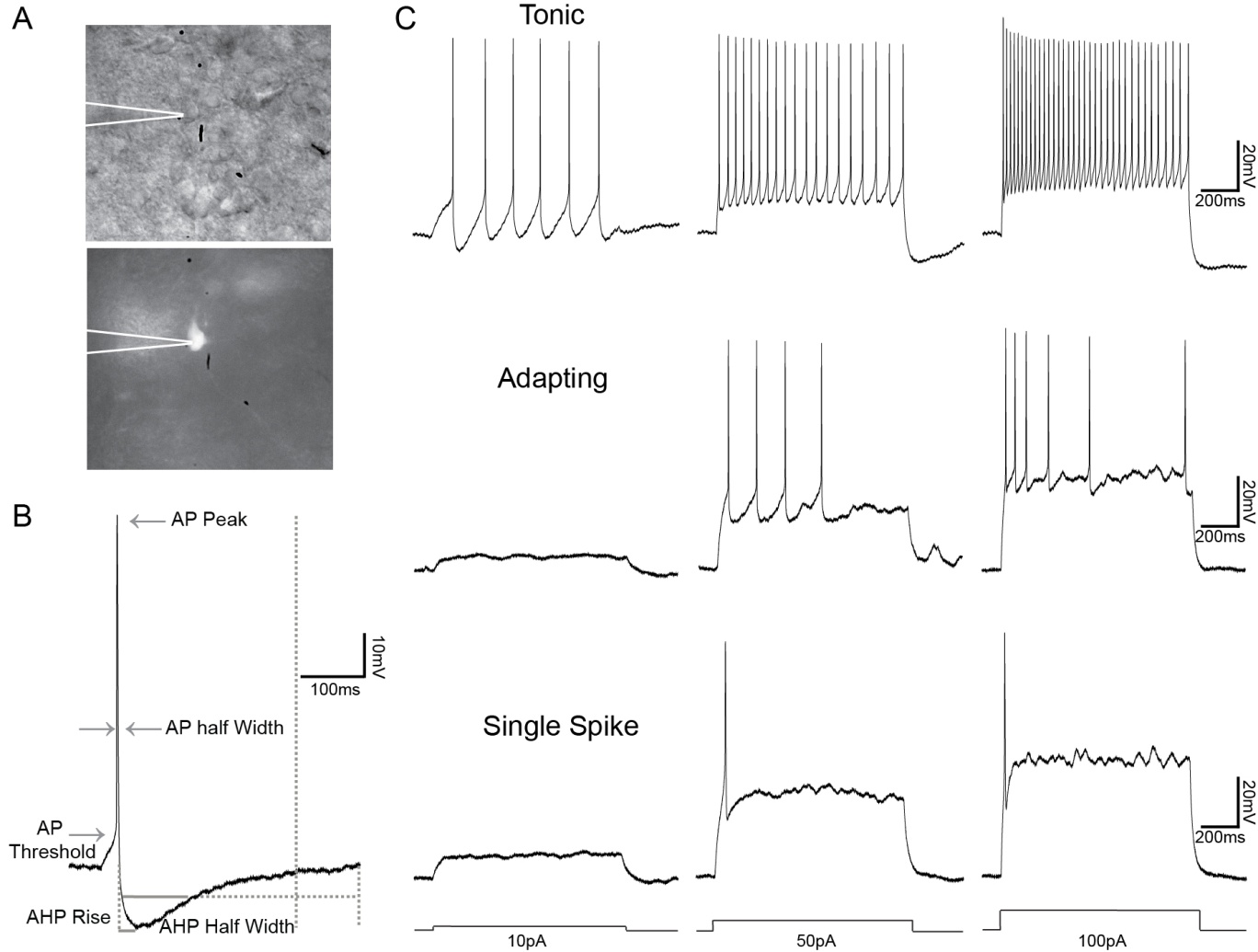
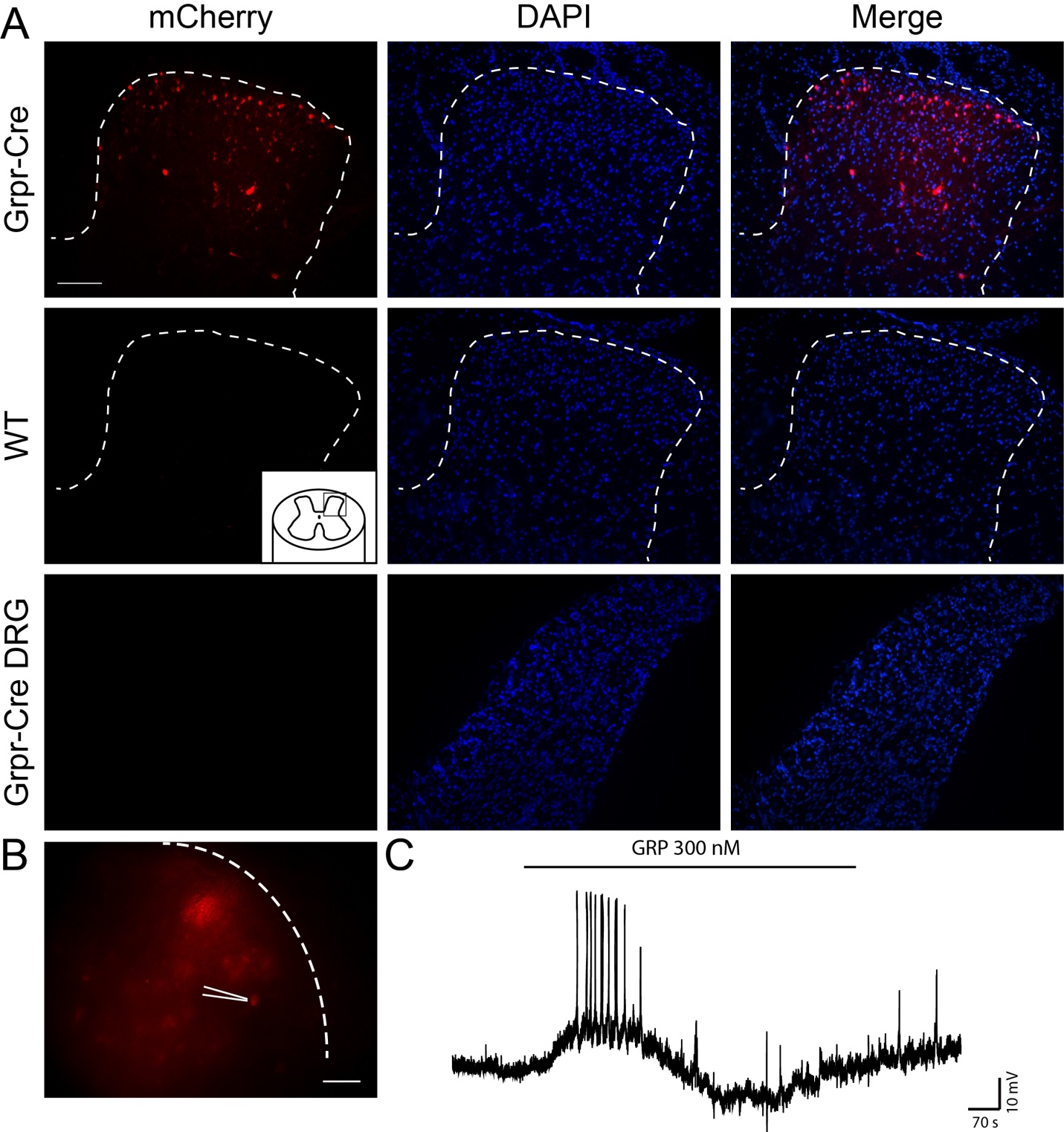
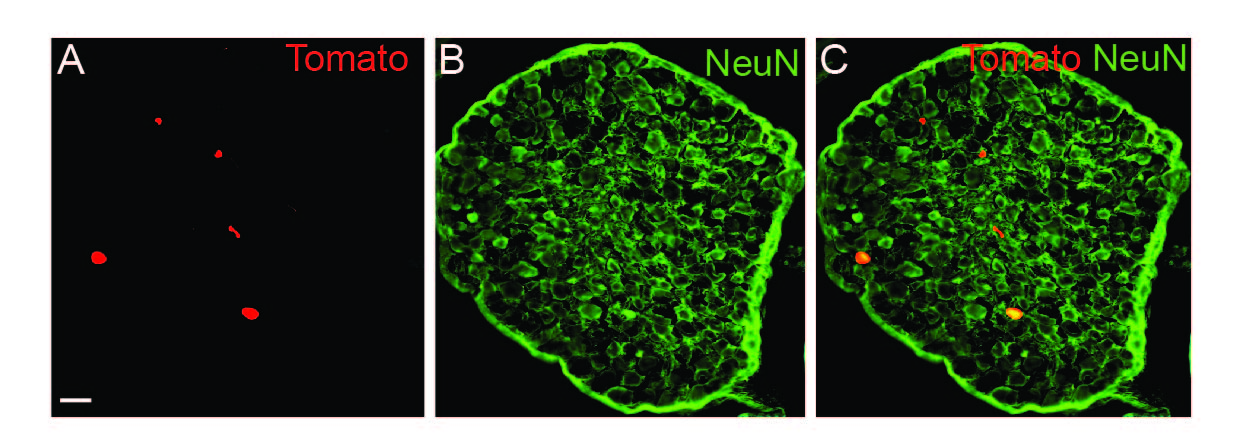
Supplemental data



**Supplemental Figure 1. Characteristic firing properties of Grpr-Cre neurons in the spinal cord dorsal horn.** ***A,*** A Grpr-Cre neuron visualized under bright field (top) and fluorescent (bottom) light. White lines denote recording pipette. ***B,*** An example action potential from a Grpr-Cre neuron as a representation of the population (n = 46). Neurons fired robust action potentials with an amplitude of 75.24 ± 1.16 mV, action potential rise of 11.03 ± 0.80 ms and an action potential half width of 3.64 ± 0.21 ms when triggered over their action potential threshold by short depolarizing current pulses (10 ms duration, 5pA increments). Solid and dashed grey lines illustrate analysis parameters. ***C,*** Injection of depolarizing current steps (10pA, 50pA, 100pA, 1s duration) revealed three firing groups within the Grpr-Cre population. Almost half (48%, 24/50) of the Grpr-Cre population exhibited tonic firing (top trace), whilst adapting (middle trace) and phasic (bottom trace) firing were each independently observed in 18% (9/50) of the population. Eight neurons were excluded from spike train analysis due to low recording quality.

**Supplemental Figure 2. Expression pattern and** . *A*, AAV8/hSyn-DIO-mCherry virus infects Cre-expressing neurons in the dorsal horn. No fluorescence is seen in WT mice, nor in the dorsal root ganglia (DRG) of Grpr-Cre mice. Scale bar 100 µm for all panels. *B,* Dorsal horn Grpr-Cre neuron expressing AAV8/hSyn-DIO-mCherry patch clamp recorded in a 300 µM slice. Scale bar, 80 µm. C, Representative trace of induced response after GRP 300 nM bath applied.

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**Supplemental Figure 3. Expression of Grpr-Cre in adult DRG.**

***A-C***, *tdTomato*;Grpr*-*Cre expressing neurons in the DRG labeled with NeuN. Scale bar 37 µm.