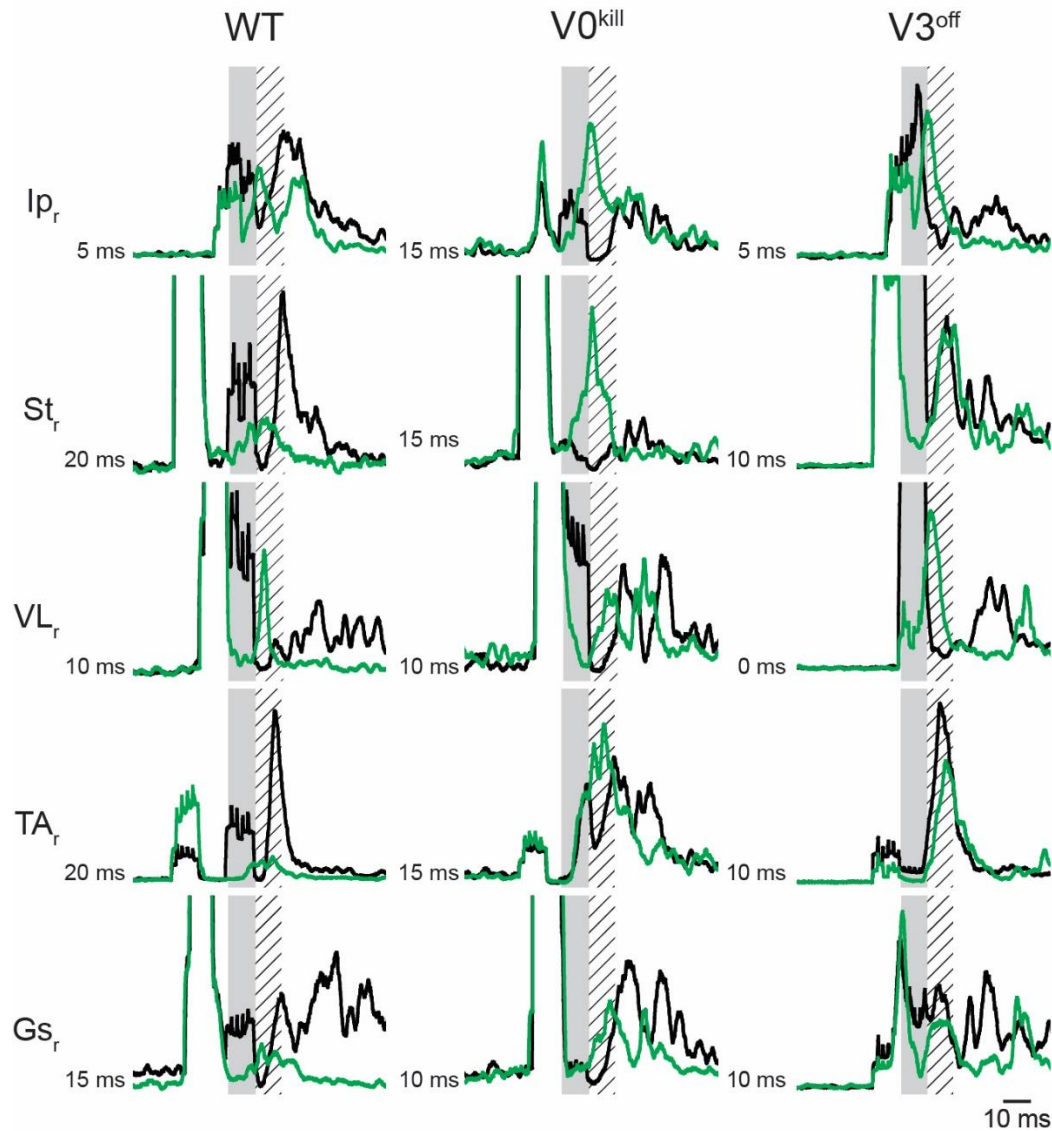
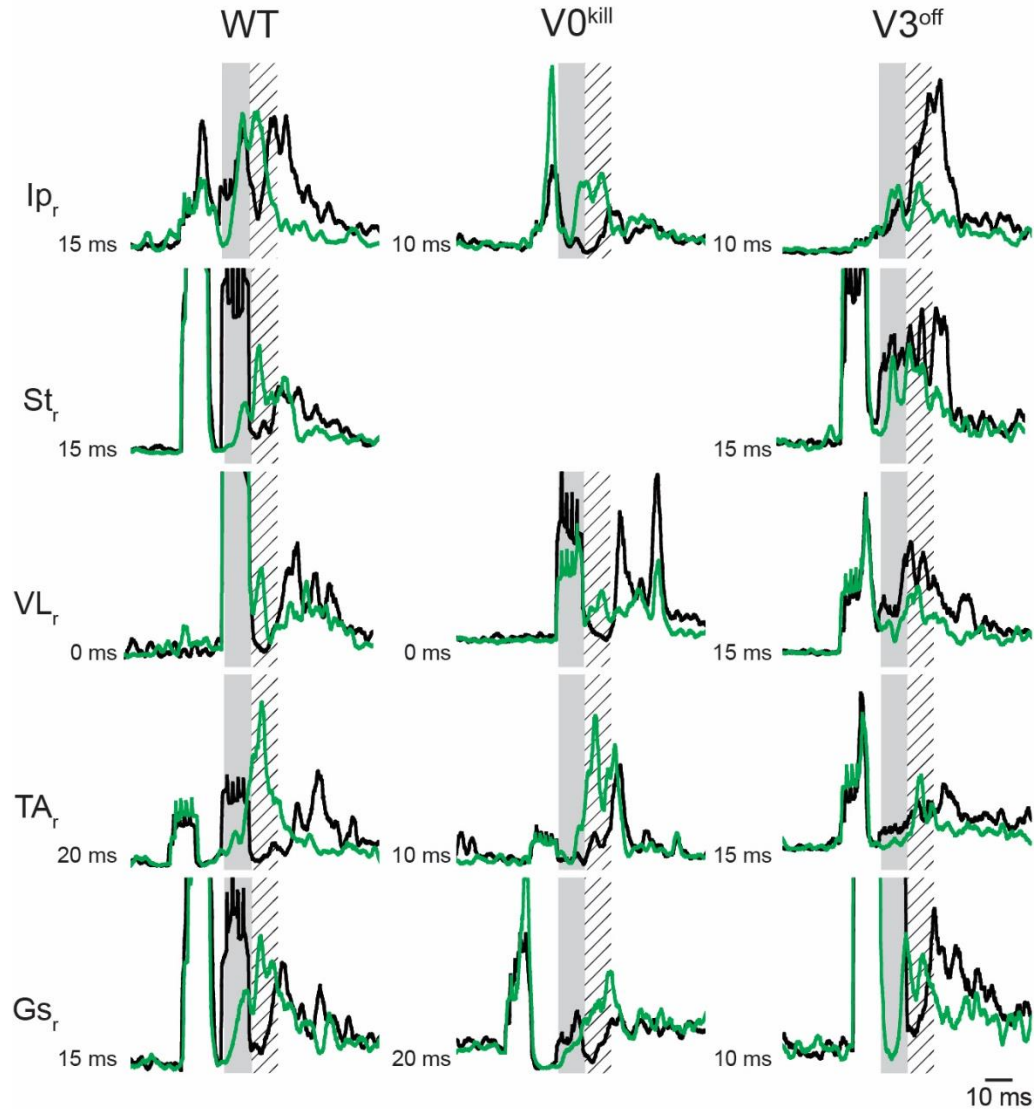


Supplemental figures:



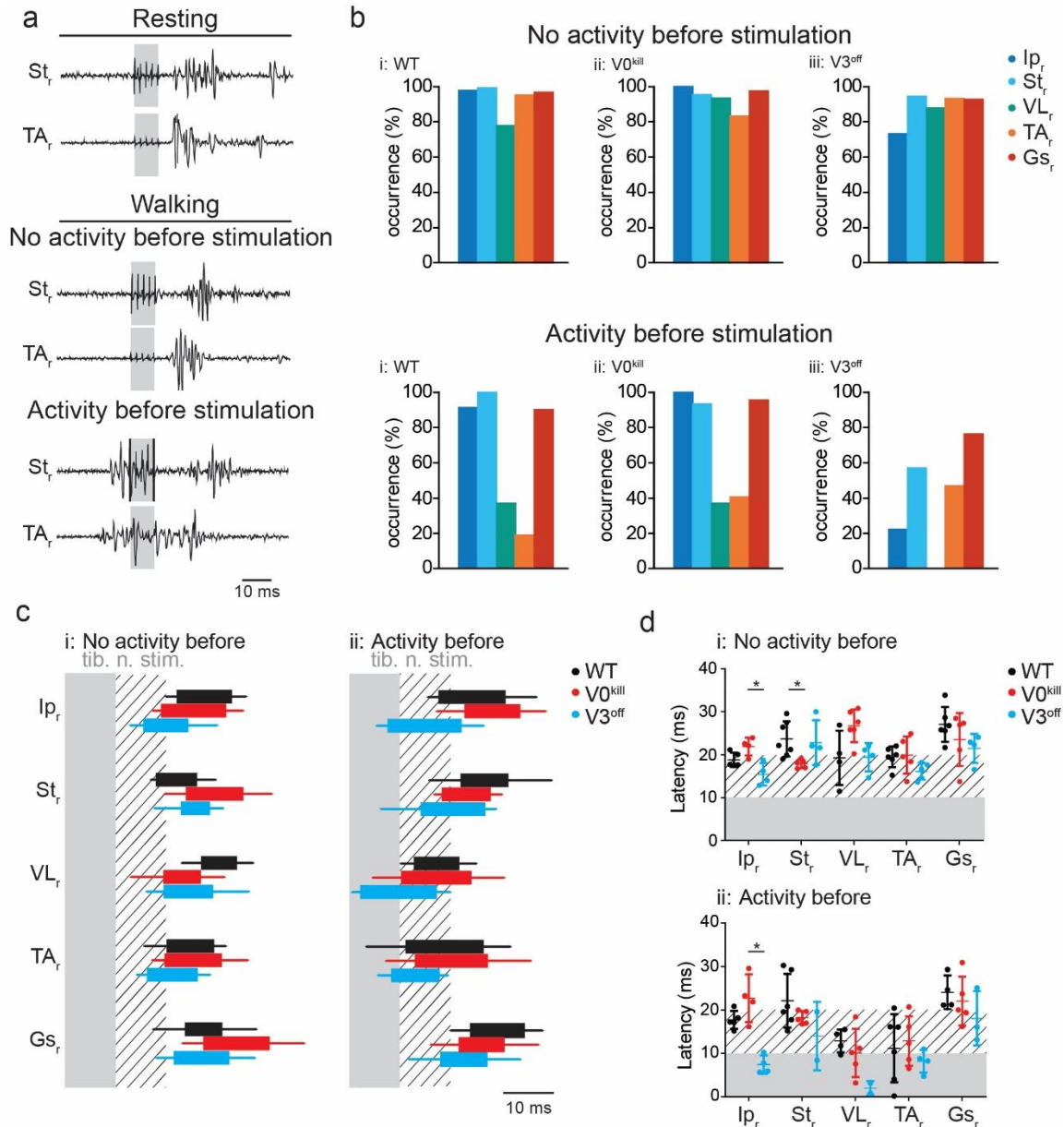
Suppl. Figure 1: V3 CINs but not V0 CINs are necessary for the inhibitory crossed reflex initiated by the contralateral tibial nerve stimulation.

Inhibitory effect was detected in the majority of all EMG recordings in wild type and V0^{kill} mice but not in V3^{off} mice, when the contralateral tibial nerve was stimulated.



Suppl. Figure 2: V3 CINs but not V0 CINs are necessary for the inhibitory crossed reflex initiated by the contralateral sural nerve stimulation.

Inhibitory effect was detected in the majority of all EMG recordings in wild type and $V0^{kill}$ mice but not in $V3^{off}$ mice, when the contralateral sural nerve was stimulated.



Suppl. Figure 3: Crossed reflex responses to tibial nerve stimulation during locomotion.

a, Example EMG recordings from right St and TA muscles as a response to the left tibial nerve stimulation during resting (top), and during locomotion when the muscle was either inactive (middle) or active (bottom) prior to the stimulation in a wild type mouse.

b, Bar diagrams illustrating the probability of occurrence of a silent period in all recorded muscles of the right leg within the 5 msec window immediately after left tibial nerve stimulation when there was no muscle activity (top) or there were activity (bottom) prior to nerve stimulation.

c, Box diagrams showing the average (+/- standard deviation) on and offsets of right muscle activities as response to the left tibial nerve stimulation at 5xT when there were no activity (i) or activity (ii) before stimulation (contralateral nerve stimulation indicated by the shaded area) during locomotion. Hatched area indicates 10 msec time window after nerve stimulation. Black bar: wild type, red bar: V0^{kill}, and blue bar: V3^{off}.

d, Diagrams illustrating the onset latencies of muscle activities in Black bar: wild type (black), $V0^{kill}$ (red), and $V3^{off}$ (blue) mice during locomotion. Circles are averages from individual mice, and the horizontal lines indicate group averages (\pm standard deviation). *: $p < 0.05$.