Supplementary Figures and Figure Legends

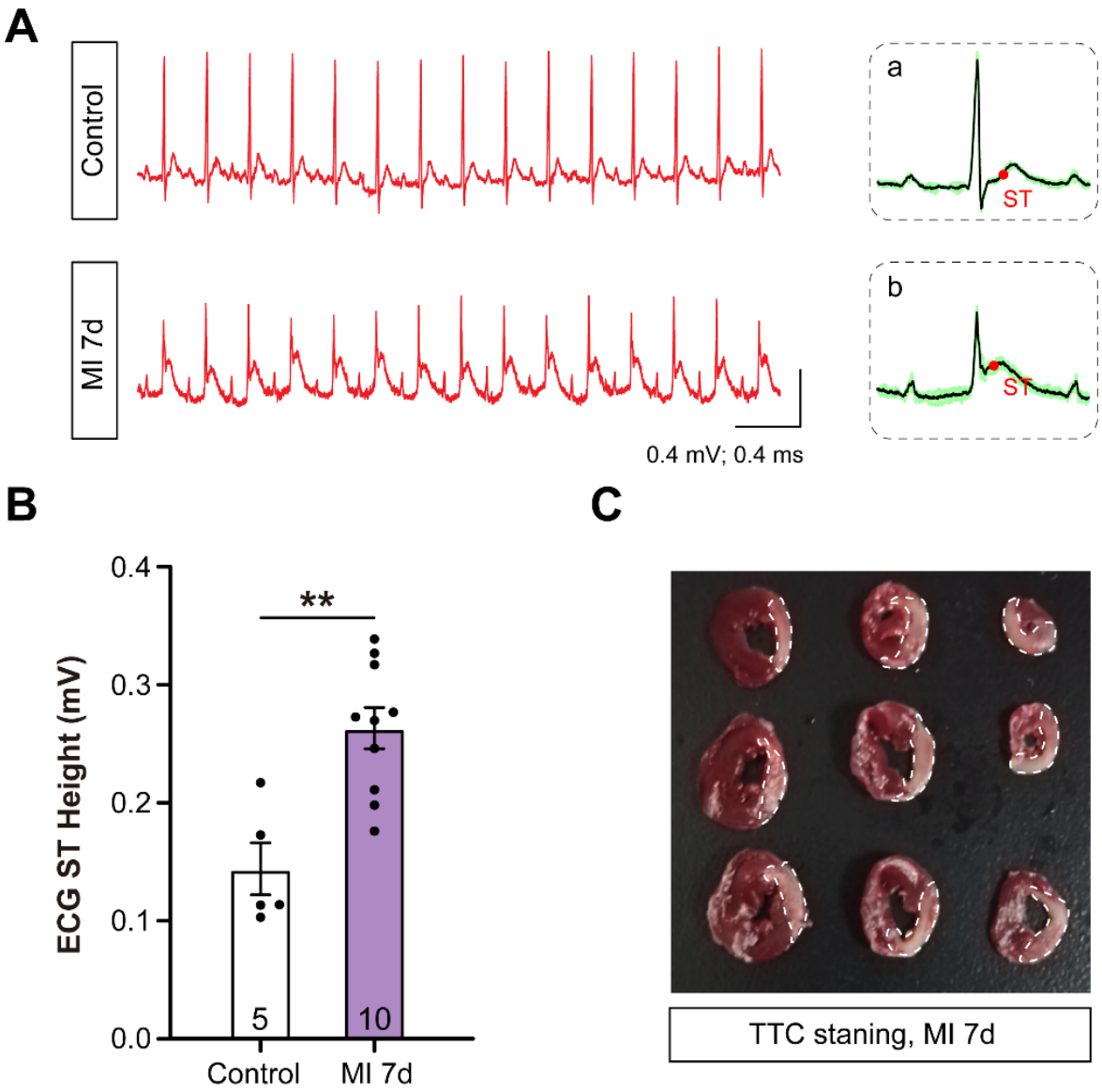

Fig. S1 LAD ligation induces elevation of the ST segment in the ECG and myocardial ischemia (MI). **A** Representative tracings showing elevation of the ST segment in the ECG after LAD ligation in control and MI 7 days group; a and b are enlarged and merged single EMGs in the control and MI 7 days group, respectively. Red dots indicate ST segments. **B** The ST segment of MI 7 days rats (n = 10) is significantly elevated compared to the control group (n = 5, $^{**}P$ <0.01, independent t-test). **C** 2,3,5-triphenyl tetrazolium chloride (TTC) staining of the myocardium. White areas outlined by dashed lines indicate ischemia and red areas indicate non-ischemia.

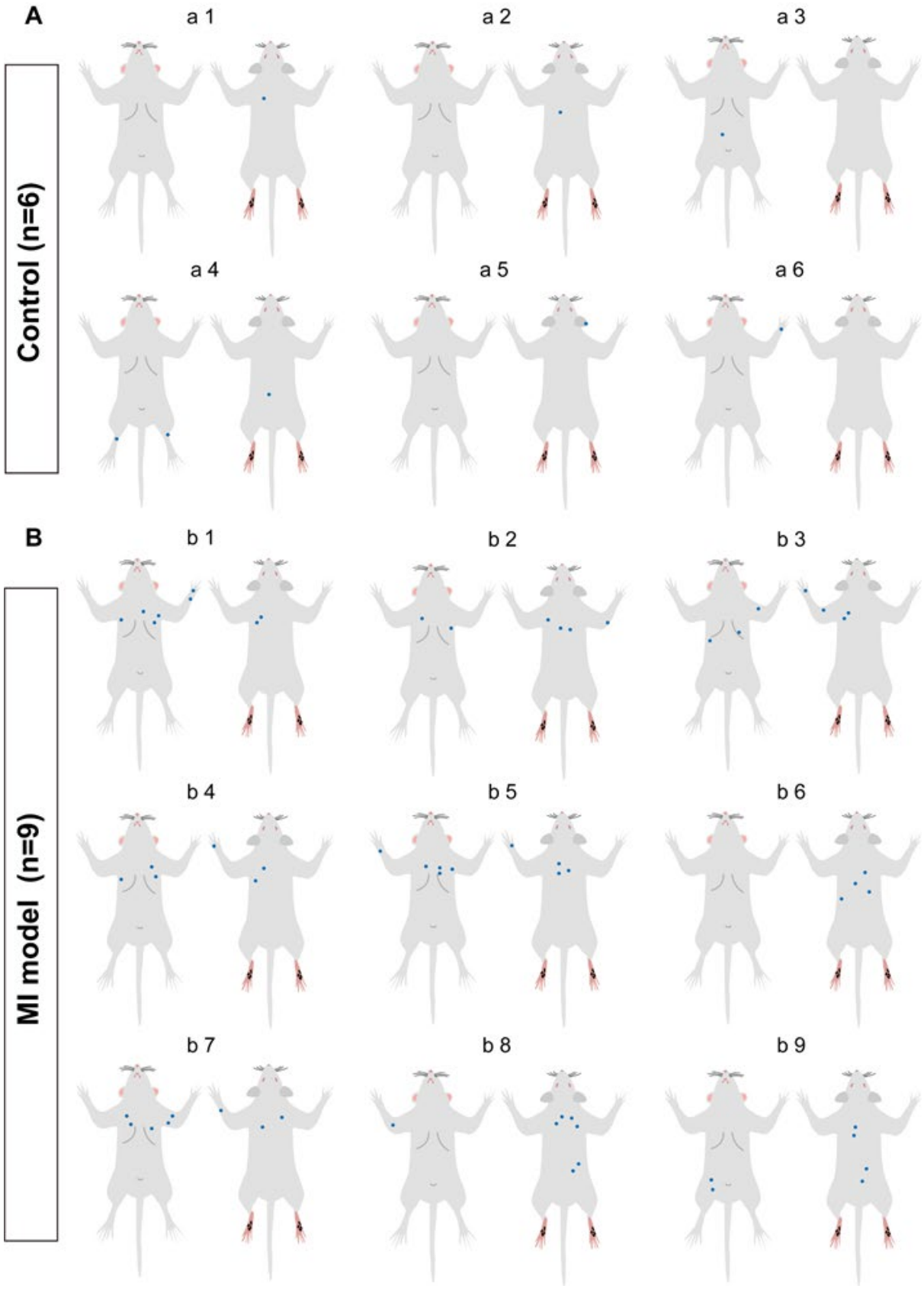

Fig. S2 Distribution of PE points for each rat in the control and MI groups. This gives detailed information for Fig. 1B (n = 6 for control and 9 for MI 7 days)

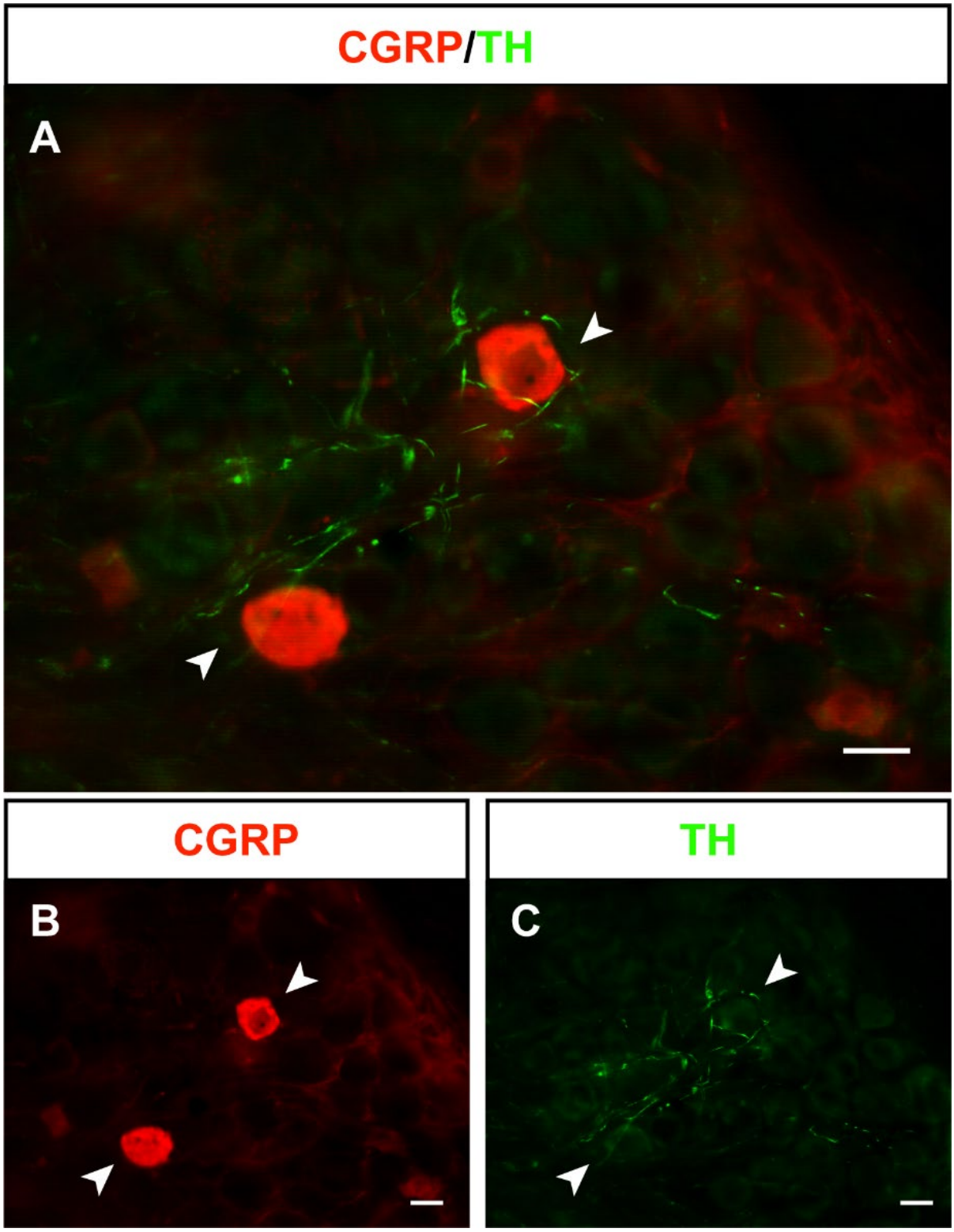

Fig. S3 Representative images of basket-like structures of the sympathetic-sensory coupling in DRGs in MI 7 days rats. **A** CGRP-IR (red) sensory neurons surrounded by TH (green)-labeled sympathetic fiber terminals. **B**, **C** Labeling of the CGRP-IR neurons (**B**) and TH-IR sympathetic fiber terminals (**C**) (scale bars, 50 μm).

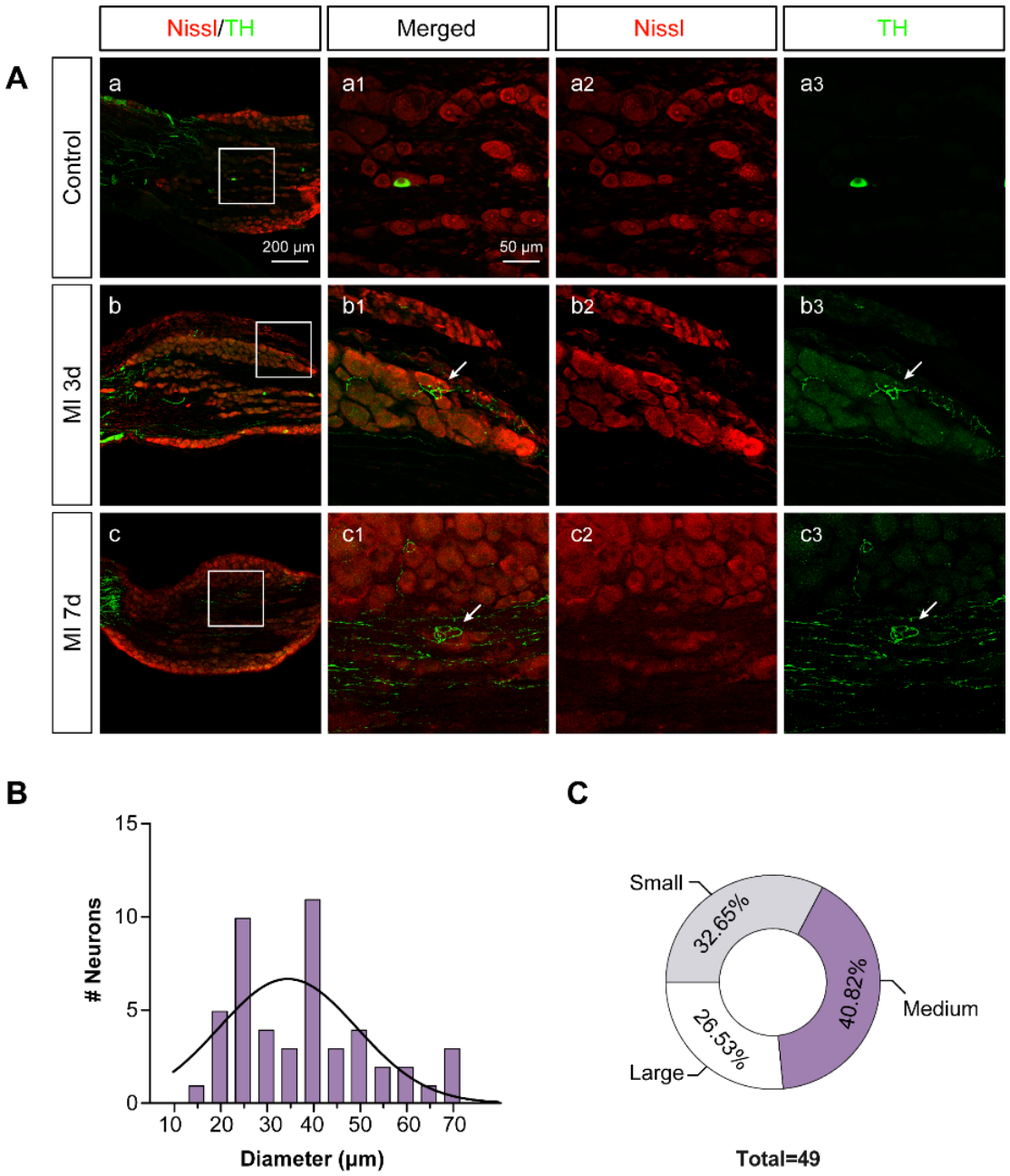

Fig. S4 Sprouted sympathetic fibers surround medium-to-small DRG neurons and form sympathetic-sensory coupling structures. **A** Representative images of immunoreactivity (IR) to NeuroTrace (Nissl, red, marker for sensory neurons) and TH (green) in the DRG of control and MI rats at 3 and 7 days after LAD ligation. **A**a1-3, **A**b1–3, and **A**c1–3 Higher-power views (scale bar, 50 μm) of the boxed area in **A**a-c (scale bar, 200μm). **B** Size distribution of DRG neurons surrounded by TH-labelled sprouted sympathetic fibers. **C** Summary of the morphological profile of DRG neurons surrounded by sprouted sympathetic fibers (n = 49).

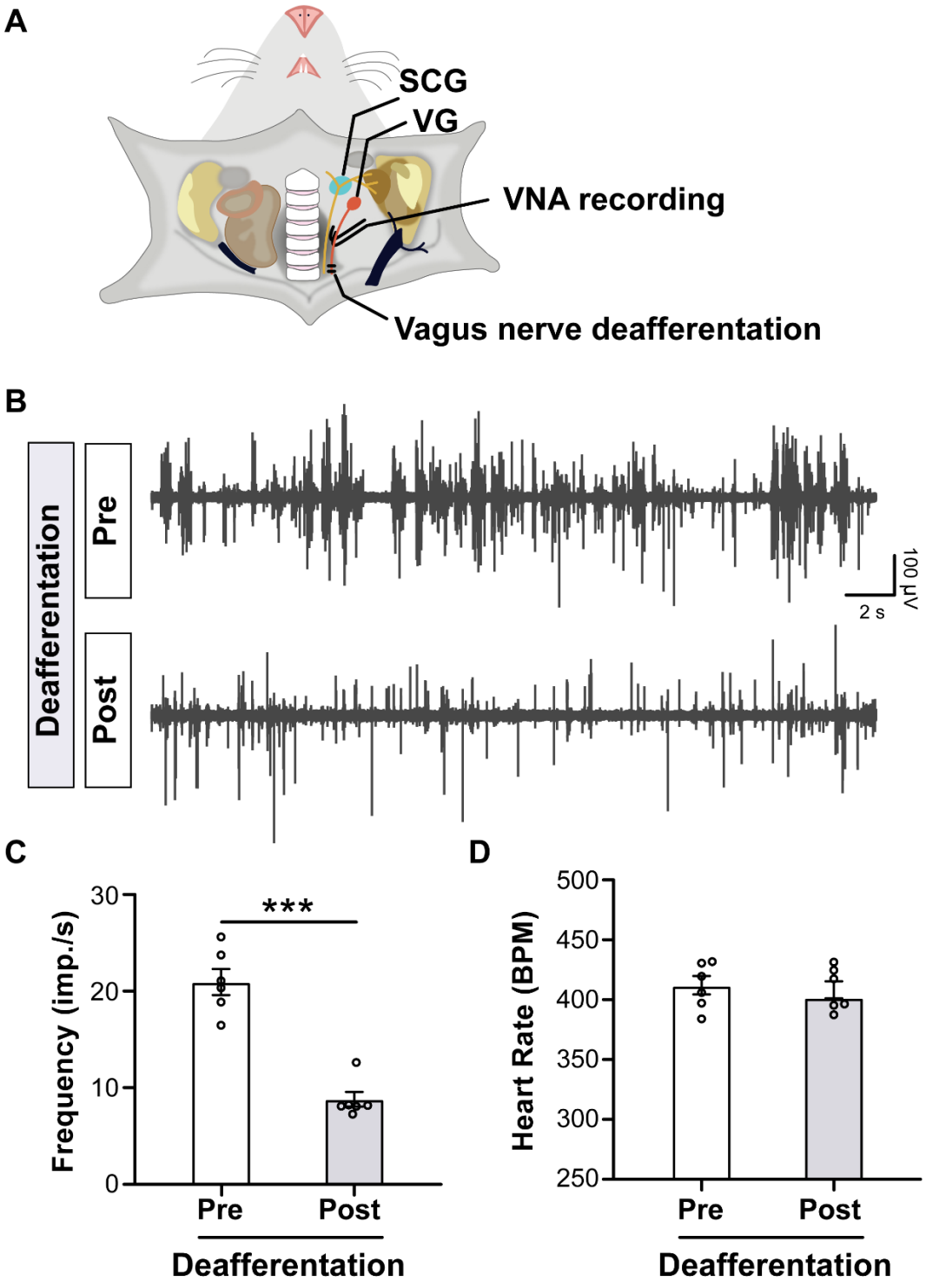

Fig. S5 Distal deafferentation of the cervical vagal nerve decreases vagal nerve activity. **A** Schematic of the location of the cervical vagal nerve and the sites for ligation and recording. **B** Representative traces of VNA in MI 7 days rats pre- and post-vagus nerve deafferentation. **C**, **D** Frequencies of VNA and HR pre- and post-vagus nerve deafferentation. Vagal deafferentation does not influence HR (n = 6/group, *** P <0.001, paired t-test). imp./s, impulse per second.