Fig. S1

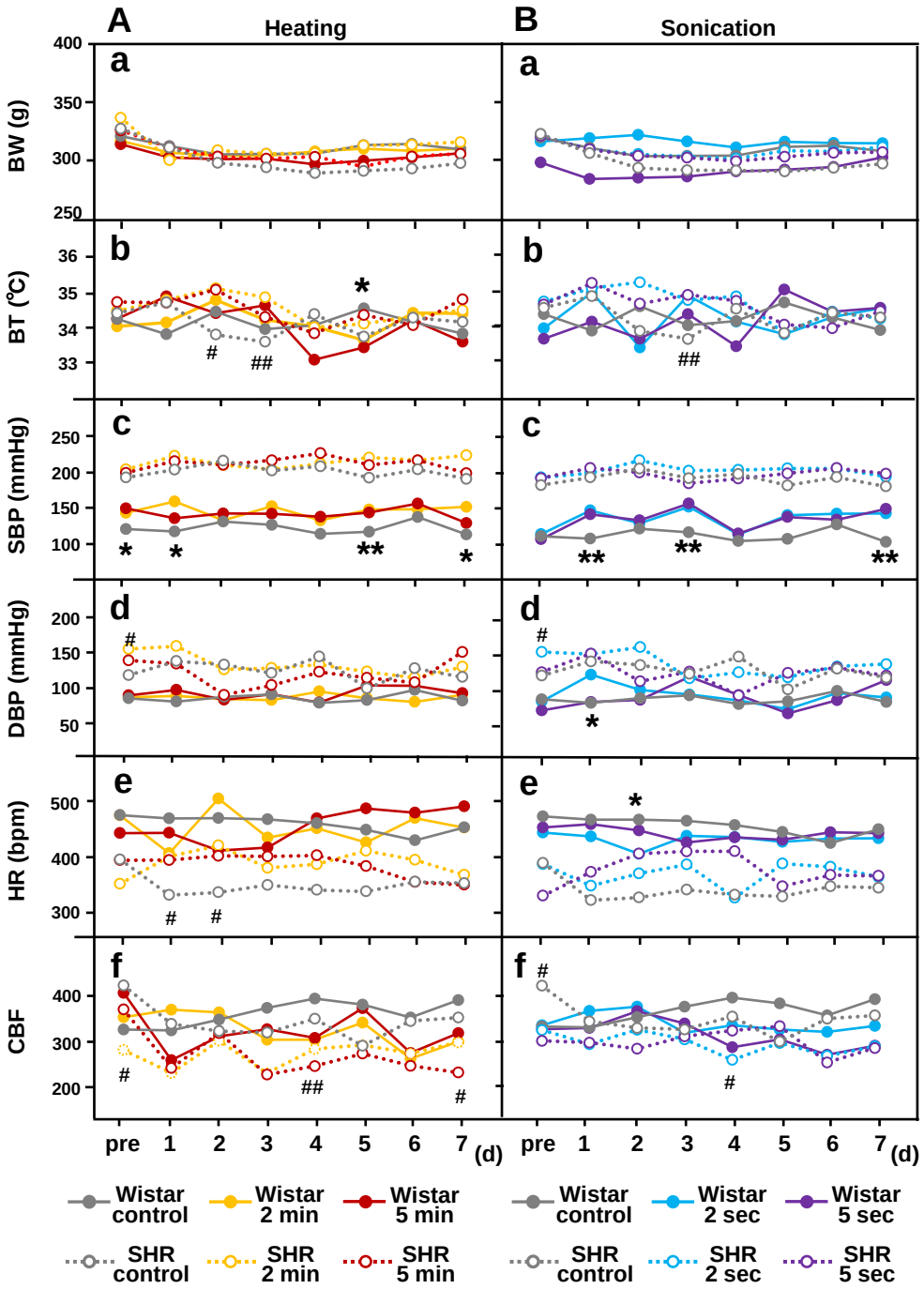

Figure S1. Physiological parameters in the heating and sonicating CCA models. Most physiological parameters did not display significant differences between the control and heating for 2 and 5 min rat groups sacrificed on day 7 (**A**), or between the control and sonicating for 2 and 5 sec rat groups sacrificed on day 7 (**B**). The same animals were used as the sham control in the heating and sonication experiments. *p<0.05; **p<0.01 vs. control in Wistar rats. $^{\#}p$<0.05; $^{\#\#}p$<0.01 vs. control in SHR.

Fig. S2

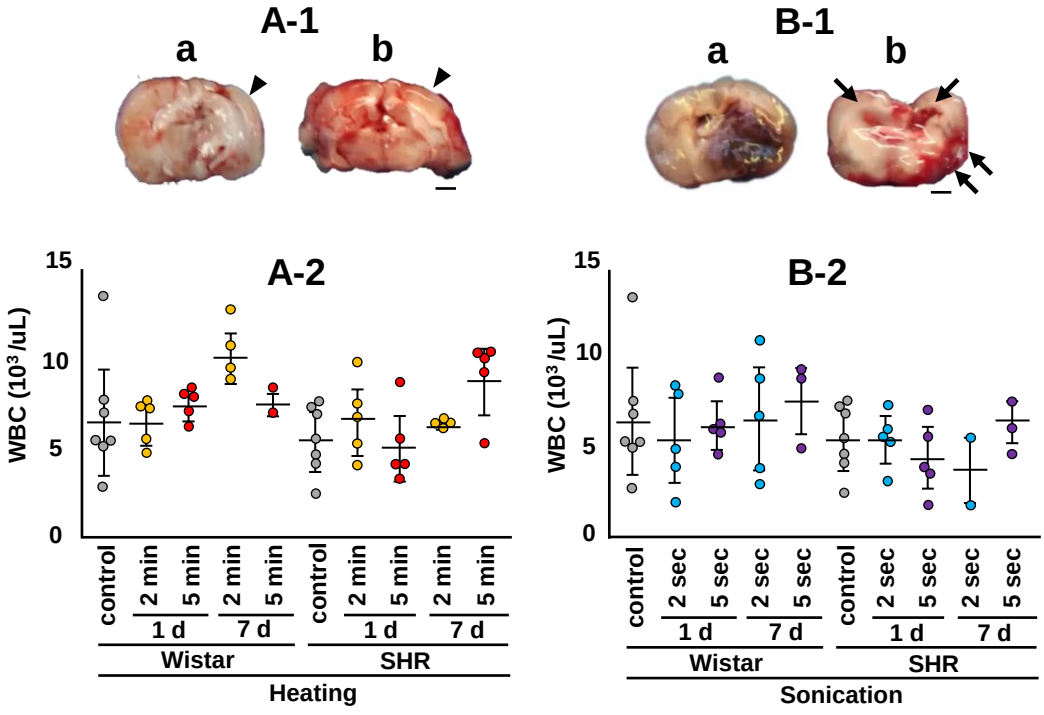

Figure S2. The dissected brain of rats that died in the period leading up to sacrifice. The dissected brains of rats that died after 5 min heating in the period leading up to sacrifice (n=2) with brain edema (**A-1**, arrowheads) and rats after 5 sec sonication (n=2) with cerebral or subarachnoid hemorrhages (**B-1**, arrows). No significant differences were found in WBC between groups after heating or sonication (**A-2** and **B-2**). The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 2 mm.

Fig. S3

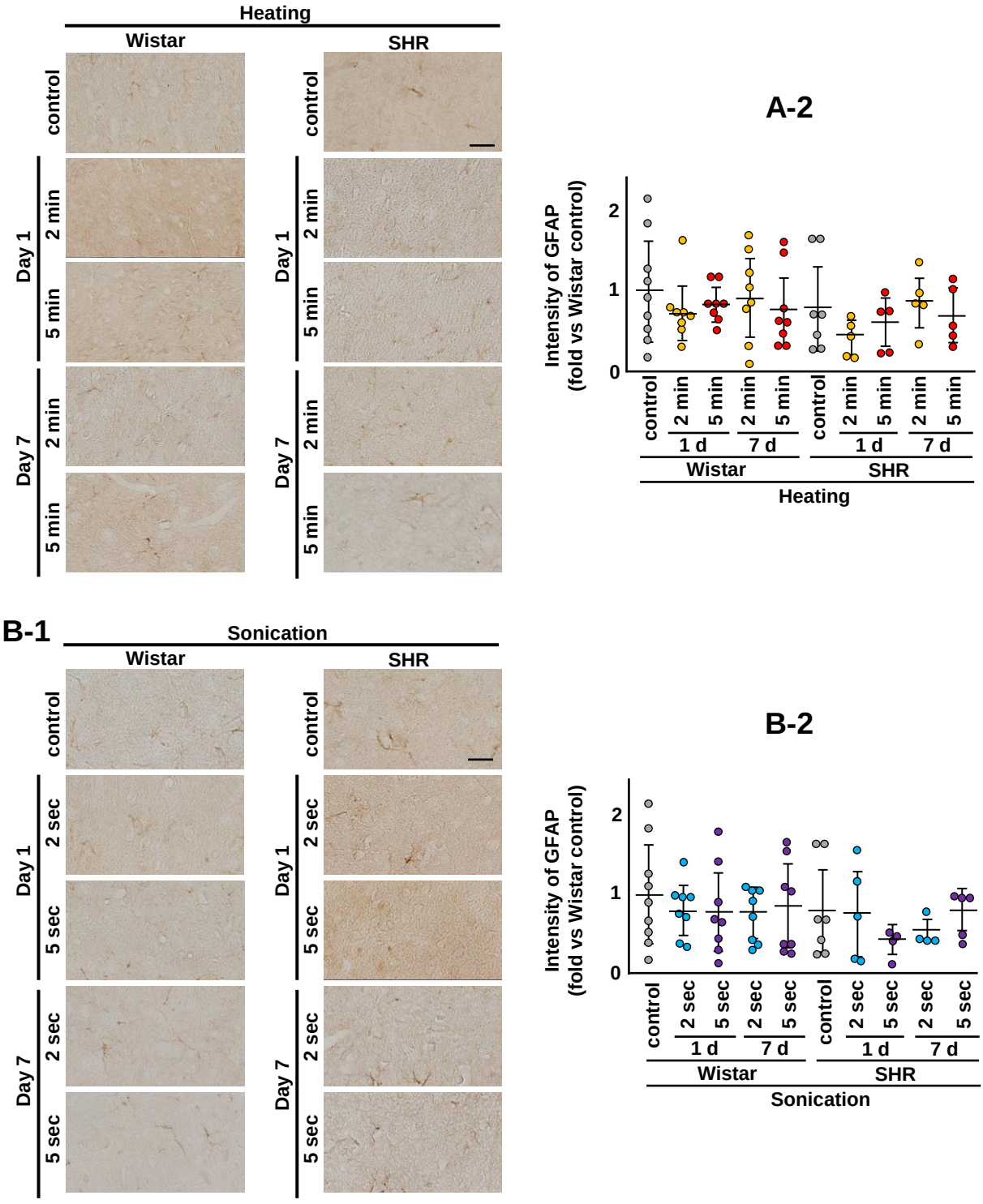

Figure S3. No changes in GFAP immunoreactivity. There were no differences in brain GFAP staining between the control and heating groups (**A-1** and **A-2**) or sonication groups (**B-1** and **B-2**) for Wistar rats or SHR. The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 50 μm.

Fig. S4

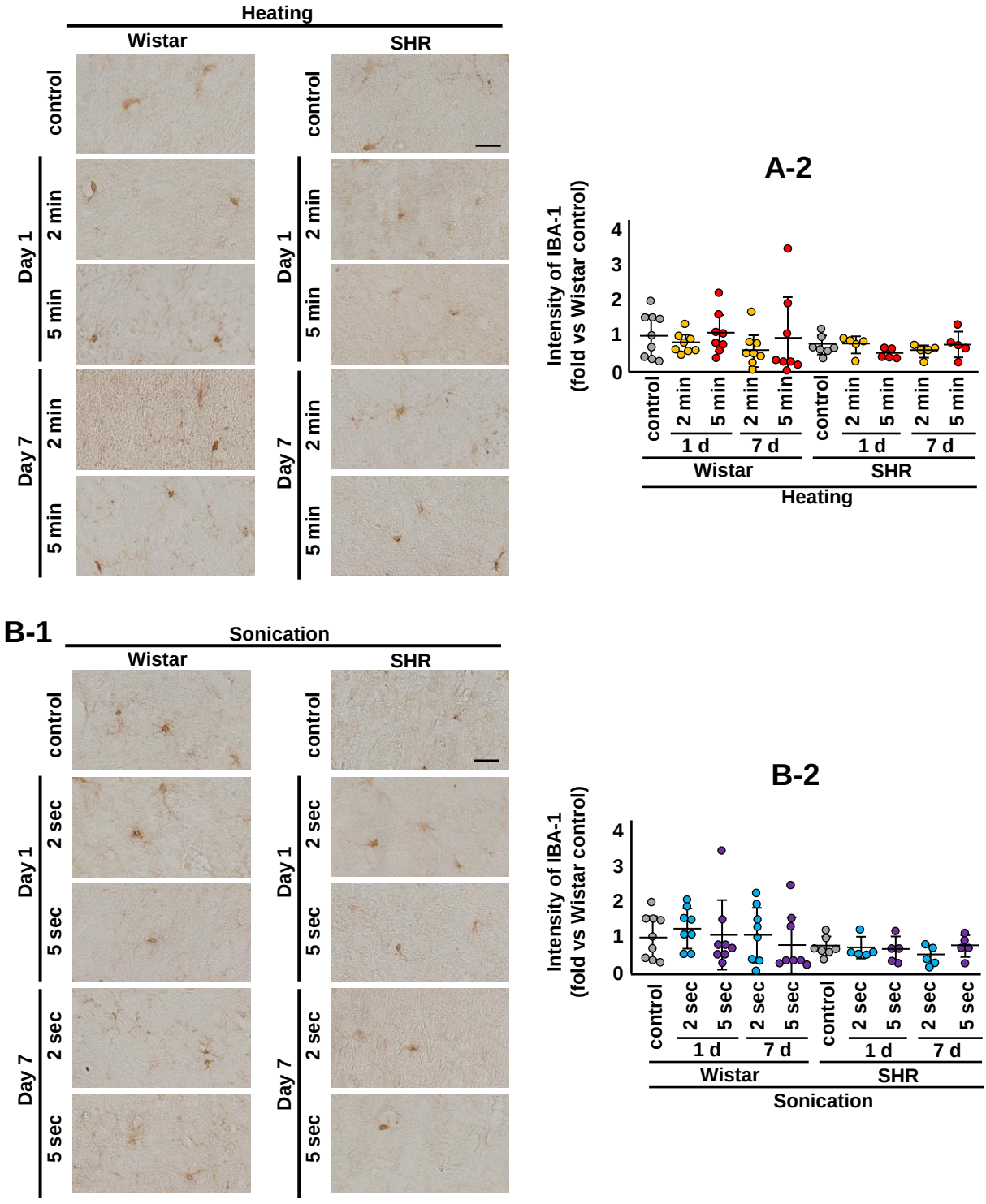

Figure S4. No changes in Iba-1 immunoreactivity. There were no differences in brain Iba-1 staining between the control and heating groups (**A-1** and **A-2**) or sonication groups (**B-1** and **B-2**) for Wistar rats or SHR. The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 50 μm.

Fig. S5

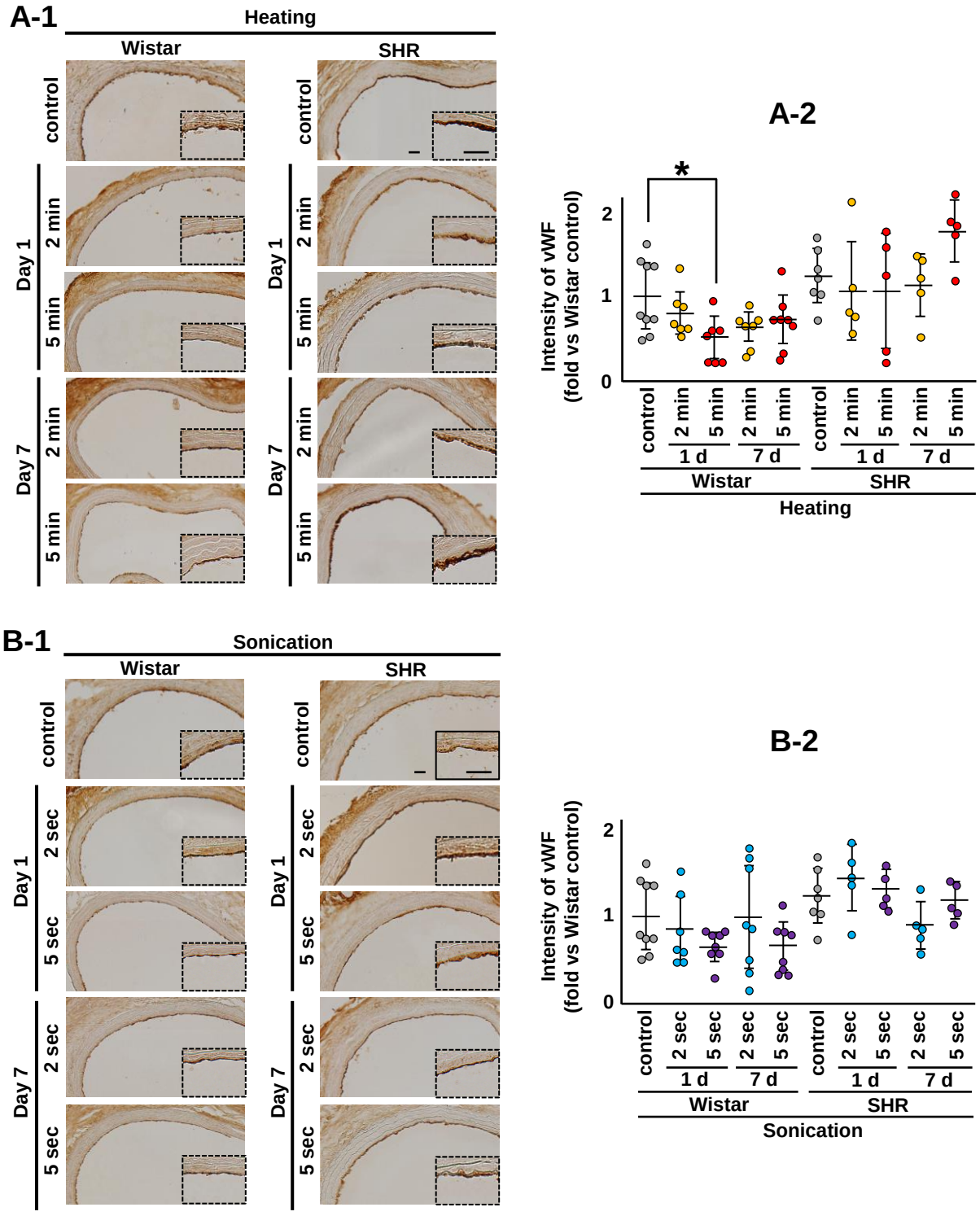

Figure S5. Reduction of vWF immunoreactivity after heating. vWF immunoreactivity was significantly lower in the 5 min heating Wistar rat group than in the control group (**p* = 0.034; **A-1** and **A-2**). The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 100 µm.

Fig. S6

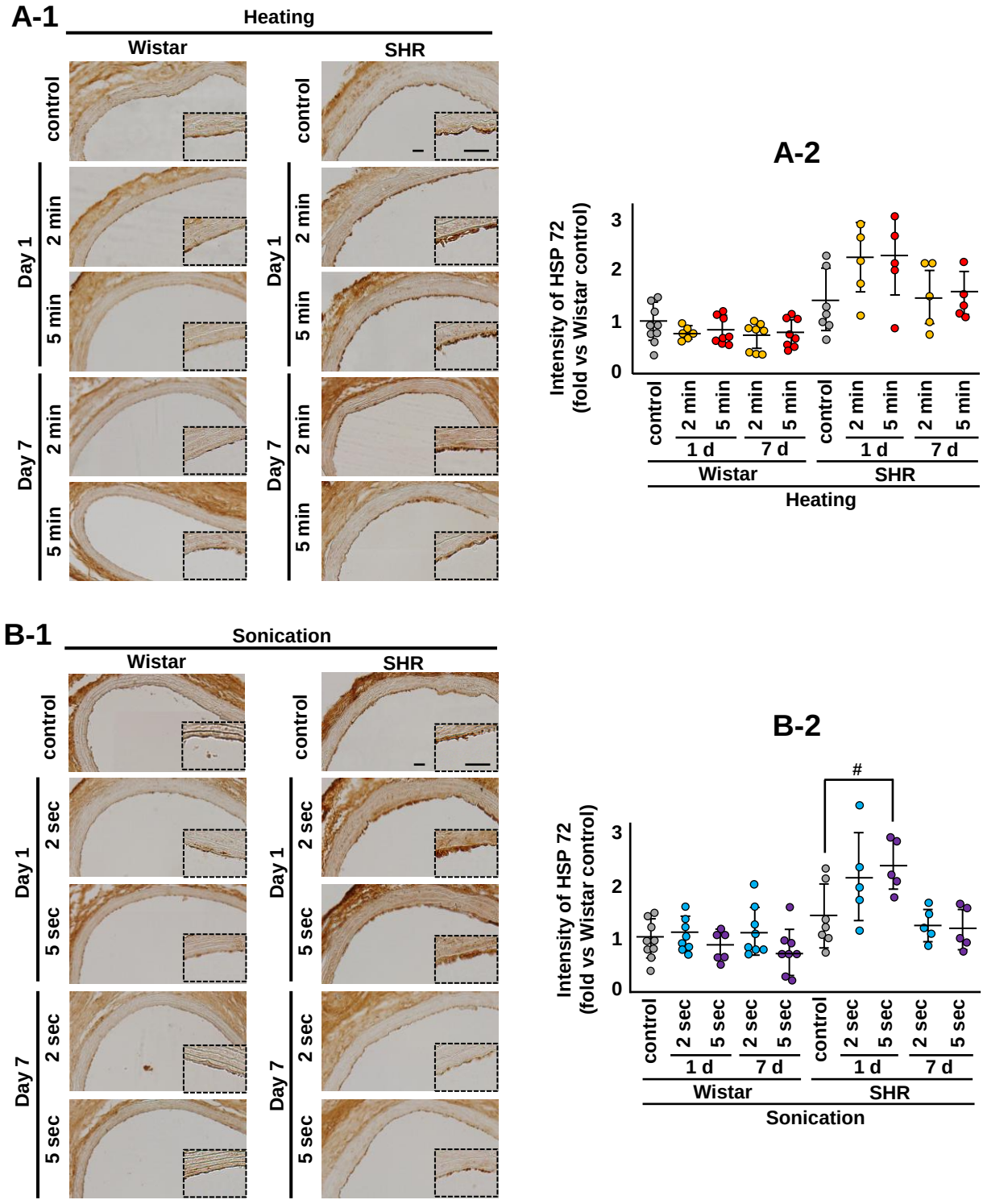

Figure S6. HSP72 induction in SHR after sonication. HSP72 immunoreactivity tended to be higher (without significance) in the SHR group sacrificed on day 1 (**A-1** and **A-2**) and was significantly higher in the 5 sec sonication SHR group sacrificed on day 1 than in the control group ($^{\#}p = 0.043$; **B-1** and **B-2**). The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 100 µm.

Fig. S7

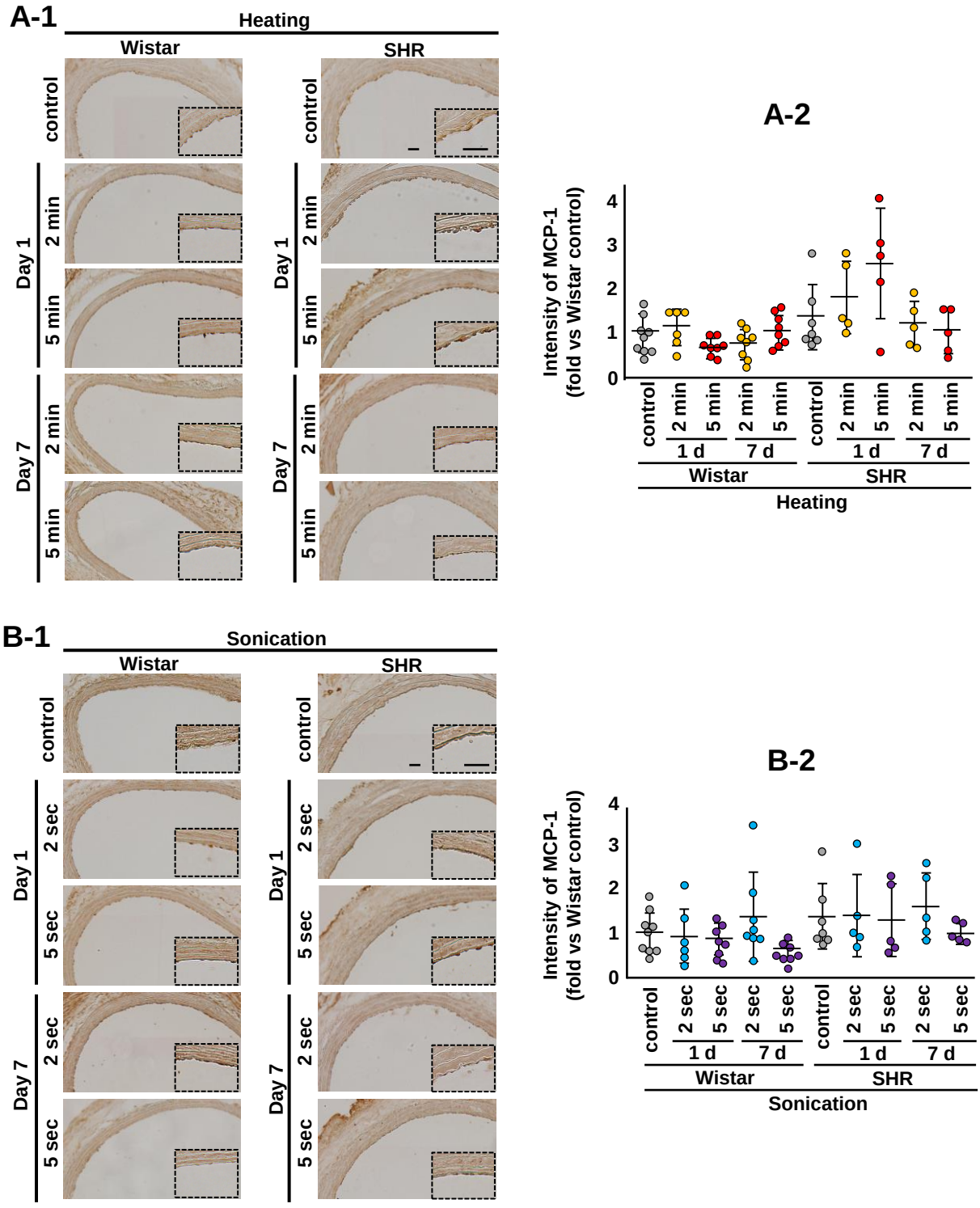

Figure S7. Increasing trend of MCP-1 immunoreactivity in the heating model. There were no differences in MCP-1 staining between the control and heating groups or among sonication groups for Wistar rats or SHR, however, MCP-1 staining tended to be higher (without significance) in the heating SHR group sacrificed on day 1 (**A-1** and **A-2**). The same animals were used as the sham control in the heating and sonication experiments. Scale bar: 100 μm.

Video S1. Recanalization of thrombotic occlusions by photic heating. An artificial clot was placed in a micropipette tip connected to an infusion bottle which was hung above the clot level to mimic blood pressure (Fig. 2A-3). The clot was exposed to a halogen point heater, and then recanalization with water flow was observed.