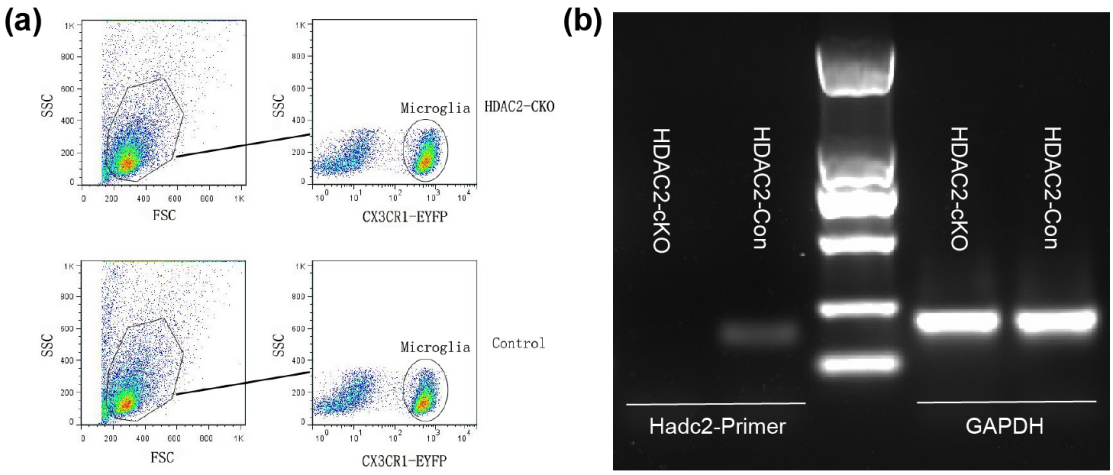
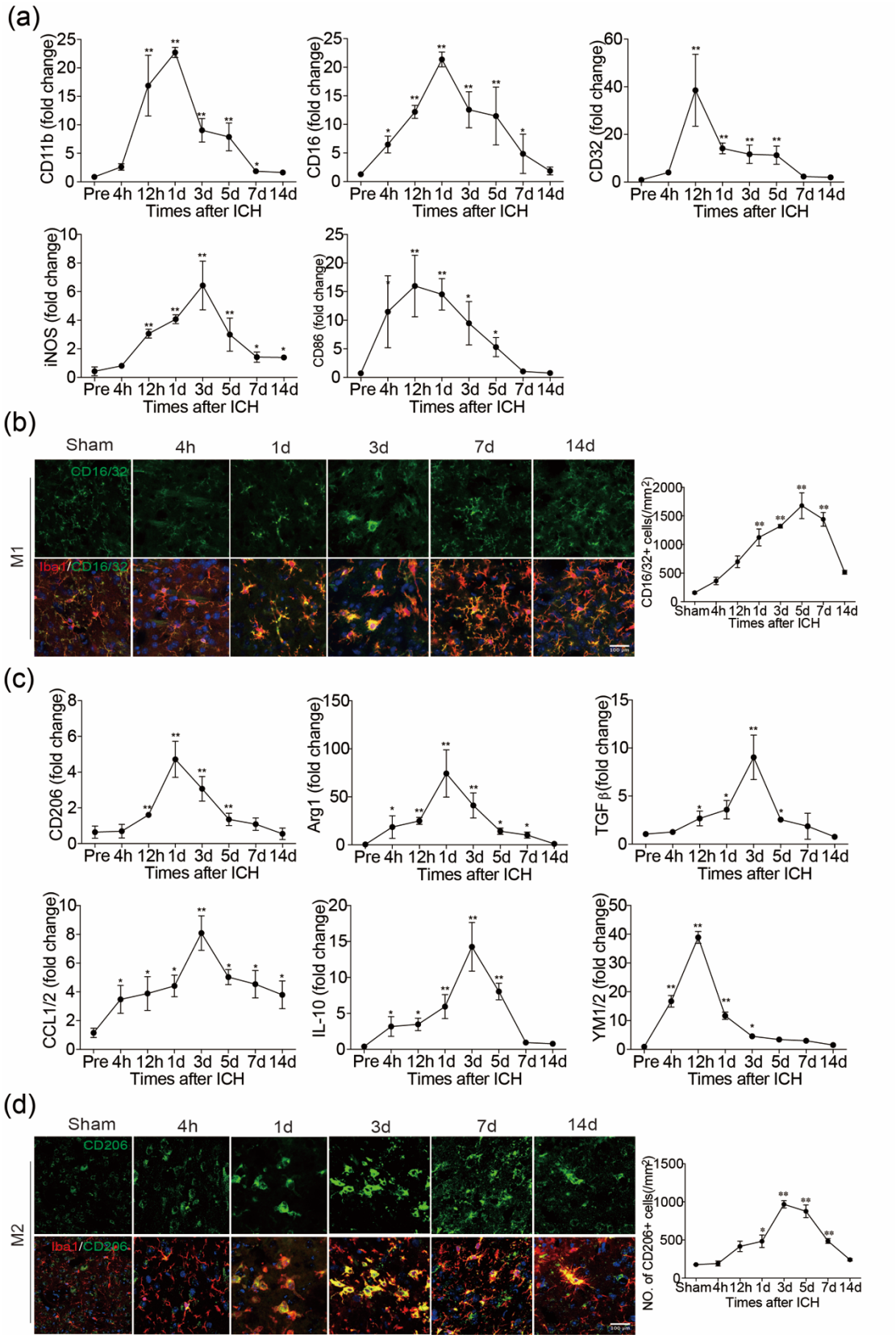
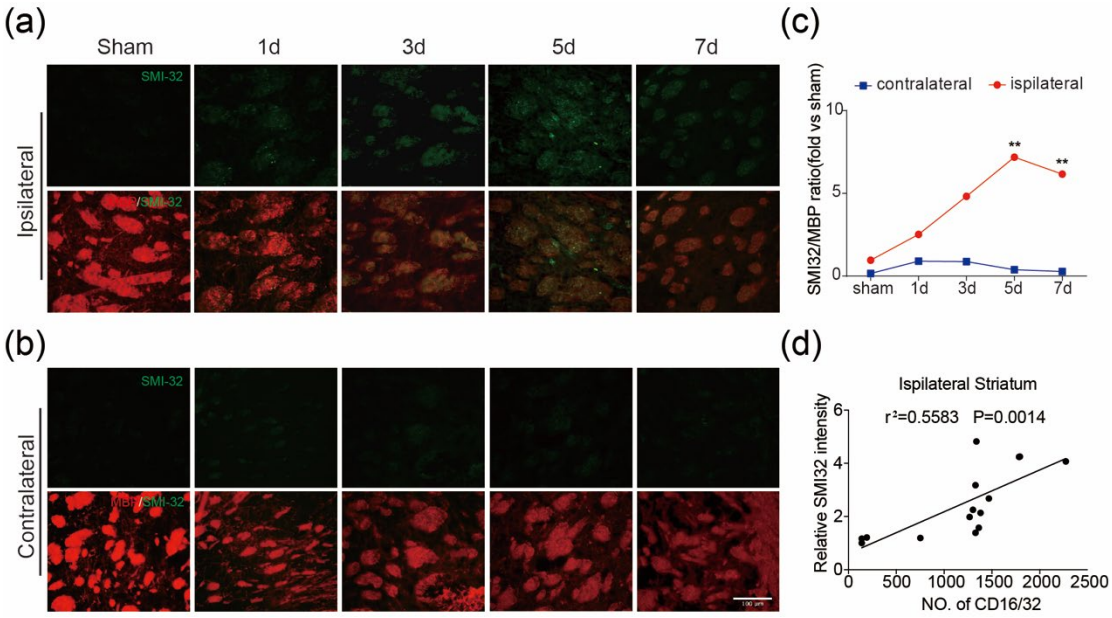


Supplementary figure 1: HDAC2 was efficiently depleted in the microglia. Gating strategy to isolate microglia for confirming *Hdac2* knockdown (a). The result of angarose gel electrophoresis demonstrated *Hdac2* was efficiently knockdown in HDAC2 cKO mice (b).

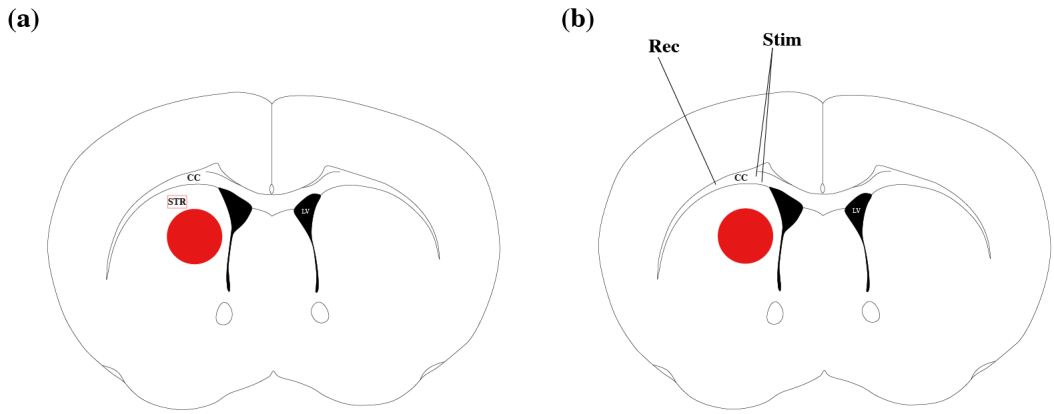


Supplementary figure 2: Temporal changes in microglia/macrophage polarization toward the M1 and M2 phenotypes after intracerebral hemorrhage (ICH). (a, c)

Reverse-transcription polymerase chain reaction (RT-PCR) show messenger RNA expression of M1 and M2 markers at 4 and 12 hours and 1, 3, 5, 7, and 14 days after ICH. (b, d) Representative immunostaining images of Iba1 (red), CD16/32 (green), and CD206 (green) at 4 and 12 hours and 1, 3, 5, 7, and 14 days after ICH in the ipsilateral basal ganglia (scale bar=100 μm). n=3-4/group. * P≤0.05, **P≤0.01 vs sham.



Supplementary figure 3: Representative immunostaining images of myelin basic protein (MBP, red) and SMI-32(green) in the ipsilateral (a) and contralateral (b) striatum (Scale bar=100 μm). (c) Time course of bilateral SMI-32/MBP ratio 1, 3, 5 and 7 days after ICH in basal ganglia. (d) The numbers of CD16/32+ cells were positively correlated to SMI-32 intensity in the ipsilateral striatum (r^2=0.5529, P=0.0015). #P≤0.01 vs the sham group. n=3 to 4/group. **P≤0.01 vs contralateral.



Supplementary figure 4: Illustration of the regions for immunohistochemistry, RT-PCR and electron microscropy (red box) (a). Stimulating and recording electrodes were positioned at the CC as shown to measure the evoked CAPs (b).