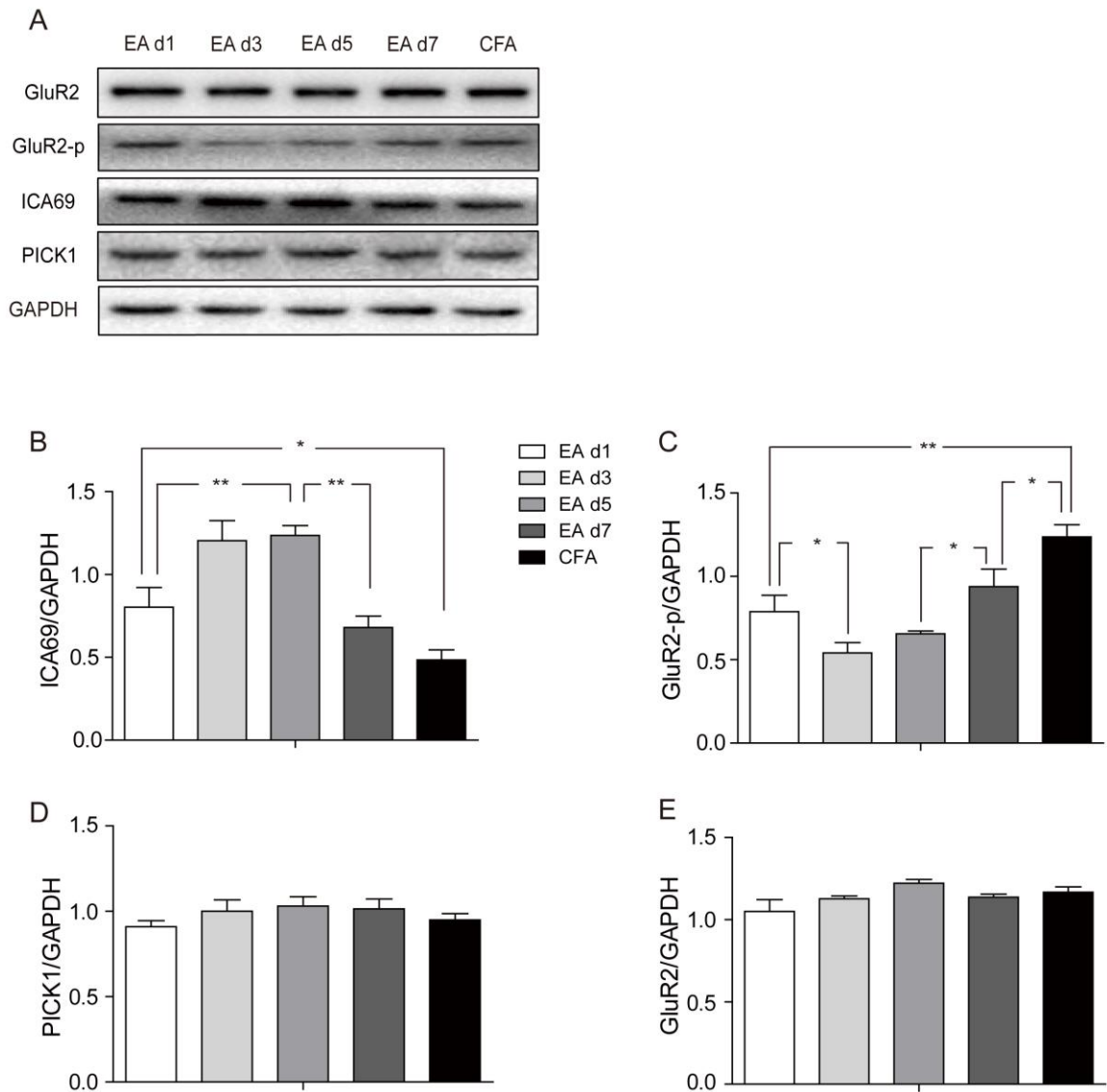
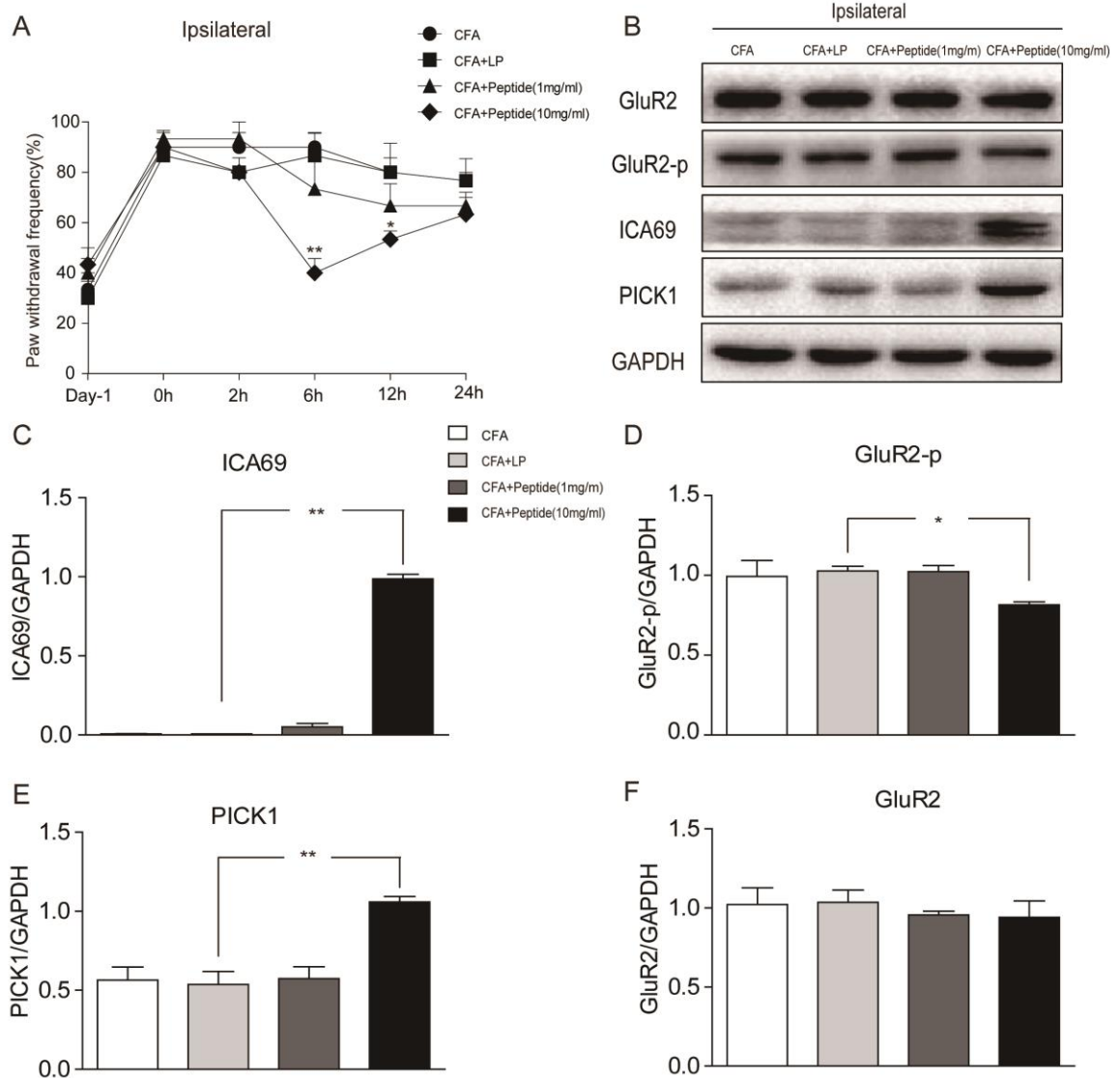


S1



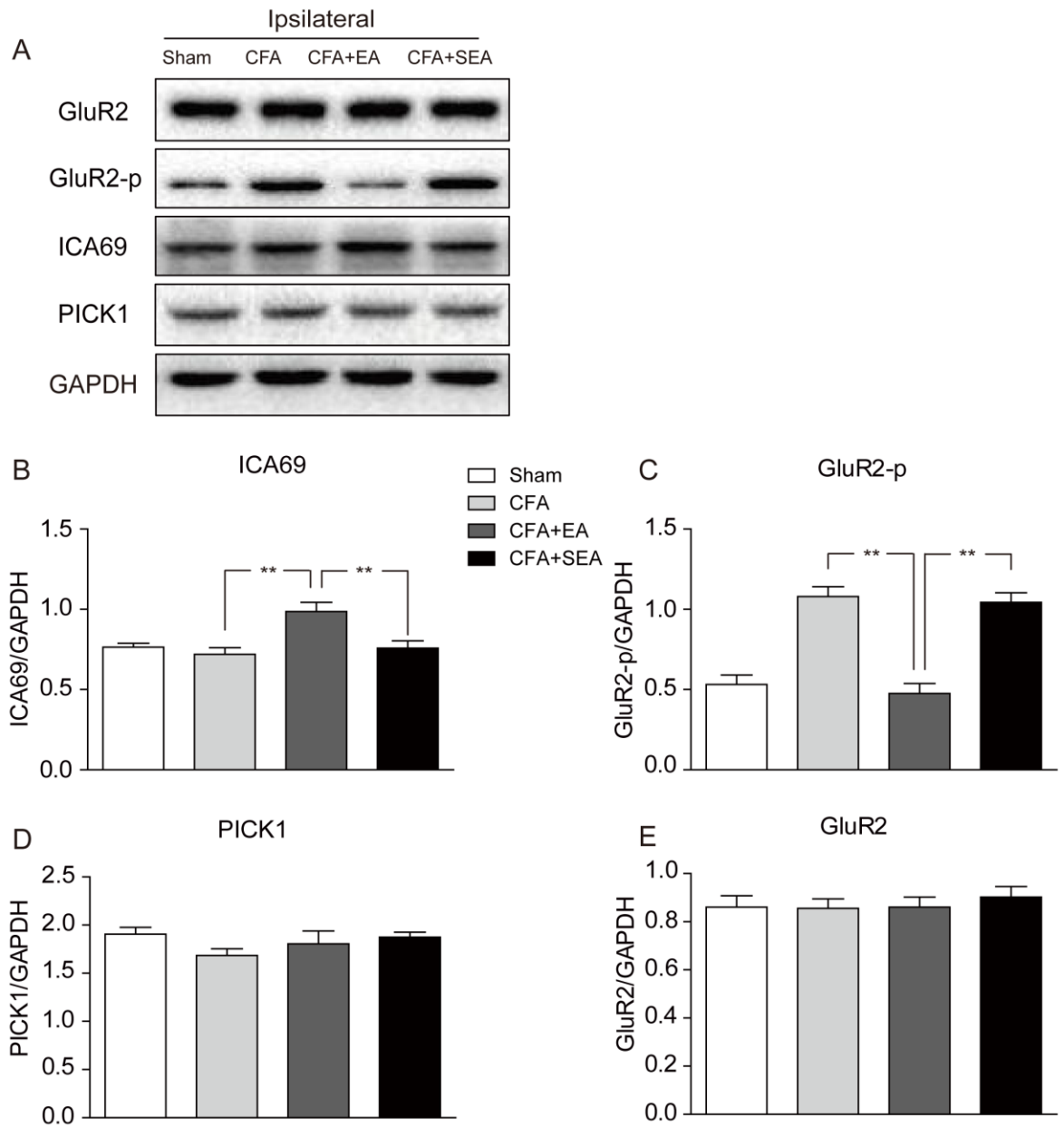
Supplement Figure 1. Effects of EA on the protein levels of GluR2, GluR2-p, ICA69 and PICK1 in Day1, Day3, Day5, Day7, and CFA group on the ipsilateral side of SDH, respectively. **A:** Representative western blot bands of GluR2, GluR2-p, ICA69 and PICK1. Quantitative analyses of ICA69 (**B**), GluR2-p (**C**), PICK1 (**D**) and GluR2 (**E**) ($n = 3$, group values are indicated by means \pm SEM; ** $p < 0.01$; * $p < 0.05$). EA = electroacupuncture, CFA = complete Freund's adjuvant, SDH = spinal dorsal horn.

S2

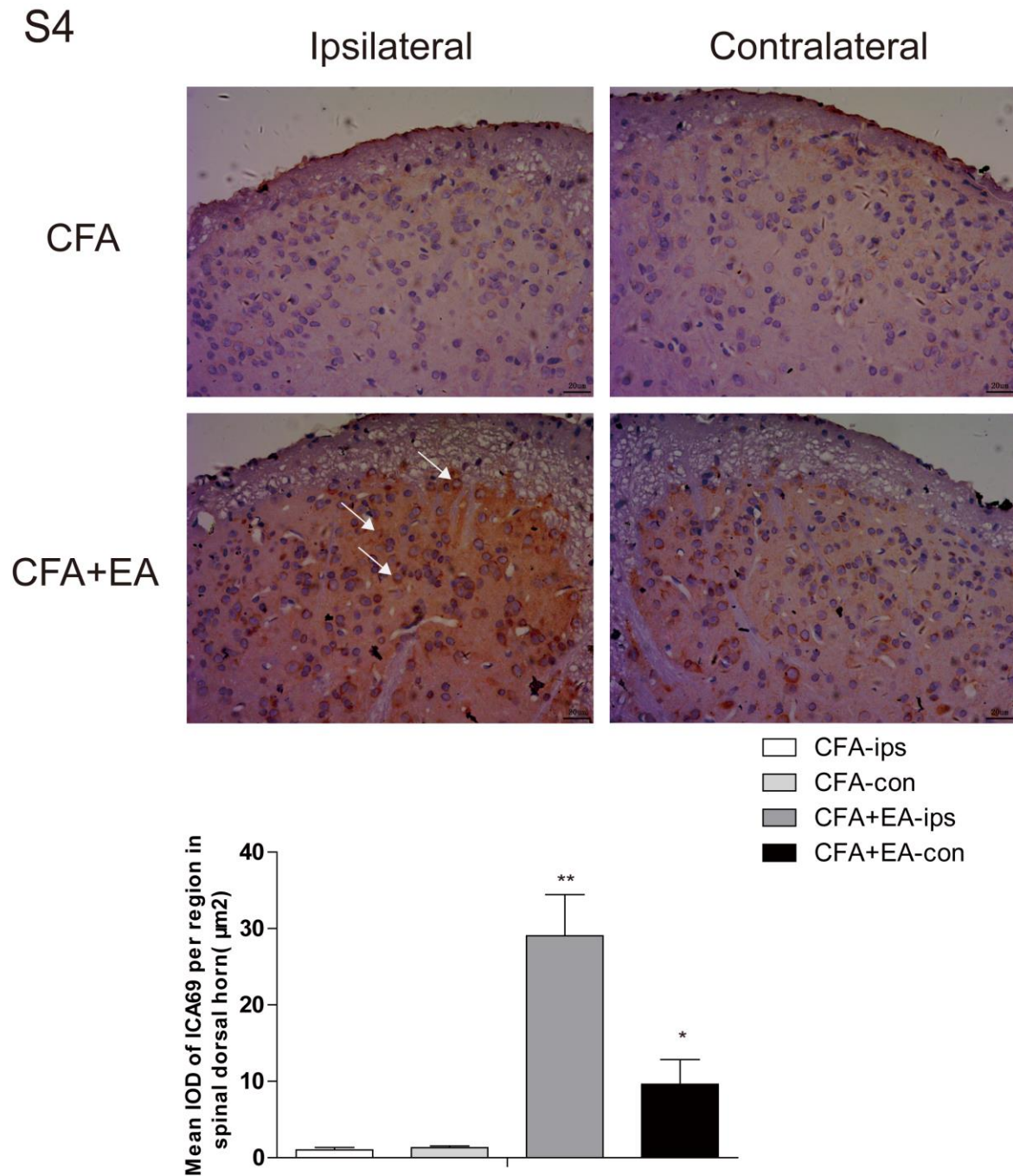


Supplement Figure 2. Injecting 5 μ l different concentrations of ICA69 peptide into the intrathecal space of ICA69-KO mice, evaluate the analgesic effect of ICA69 peptide within 24 hours and effects of ICA69 peptide on the protein levels of GluR2, GluR2-p, ICA69 and PICK1 at 6h. **A:** Reduction in paw withdrawal frequency of CFA+ Peptide (10mg/ml) group compared with CFA+LP group on the ipsilateral side, this reduction was particularly obvious at 6h and 12h ($n = 3$; * $p < 0.05$, ** $p < 0.01$). **B:** Representative western blot bands of GluR2, GluR2-p, ICA69 and PICK1. Quantitative analyses of ICA69 (**C**), GluR2-p (**D**), PICK1 (**E**) and GluR2 (**F**) ($n = 3$, group values are indicated by means \pm SEM; ** $p < 0.01$; * $p < 0.05$). CFA = complete Freund's adjuvant, LP= leader peptide.

S3

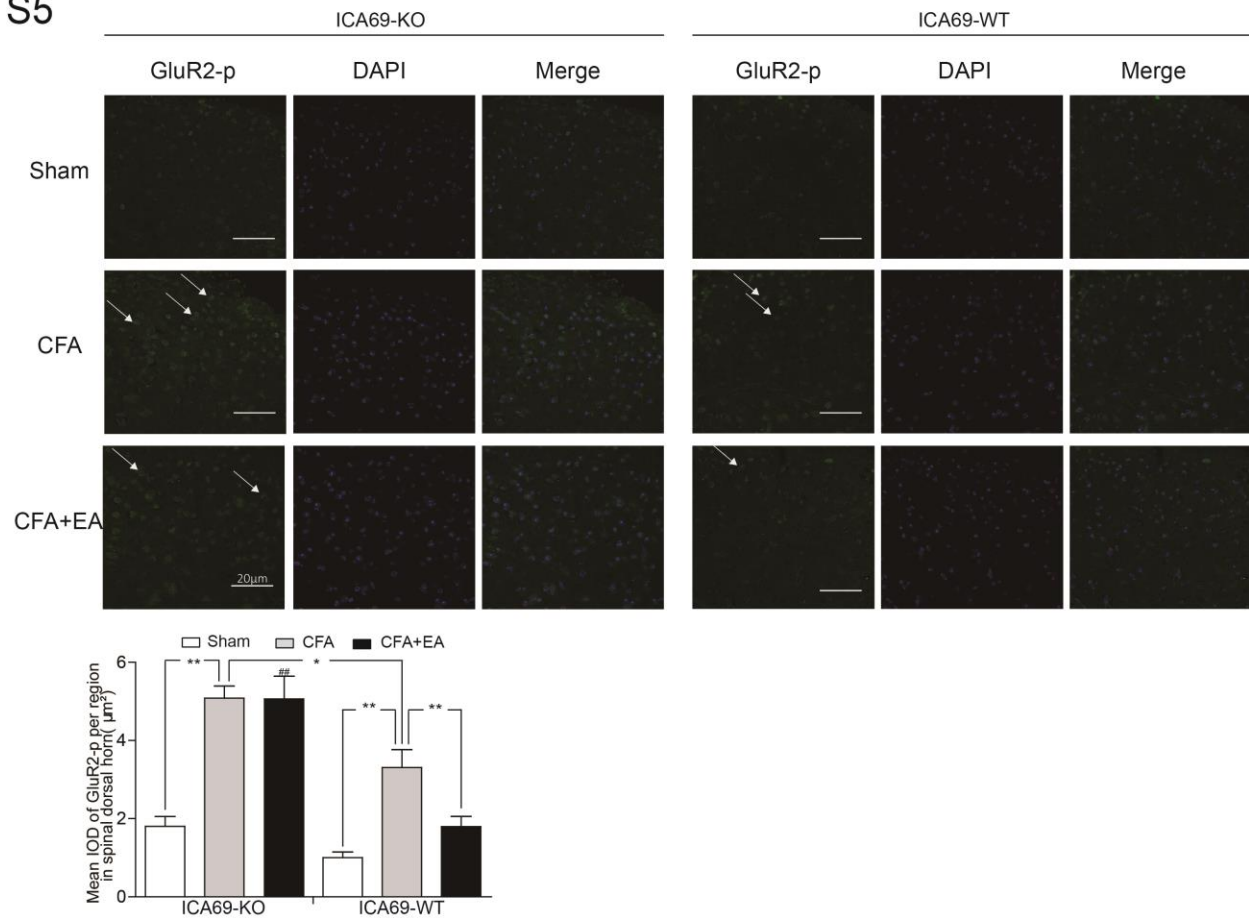


Supplement Figure 3. Effects of SEA on the protein levels of GluR2, GluR2-p, ICA69 and PICK1 on the ipsilateral side of SDH at Day3, respectively. **A:** Representative western blot bands of GluR2, GluR2-p, ICA69 and PICK1. Quantitative analyses of ICA69 (**B**), GluR2-p (**C**), PICK1 (**D**) and GluR2 (**E**) ($n = 3$, group values are indicated by means \pm SEM; $**p < 0.01$; $*p < 0.05$). EA = electroacupuncture, SEA = sham electroacupuncture, CFA = complete Freund's adjuvant, SDH = spinal dorsal horn.



Supplement Figure 4. Immunohistochemical results of ICA69 in SDH in the four indicated groups: the tawny staining represents the ICA69 protein, hematoxylin staining represents the nucleus, the white arrow points to the positive cells in SDH area. Scale bars 20 μm . Quantification of ICA69 per μm^2 in SDH (n = 3; group values are indicated by means \pm SEM; **p < 0.01, *p < 0.05). EA = electroacupuncture, CFA = complete Freund's adjuvant, SDH = spinal dorsal horn.

S5



Supplement Figure 5. Immunofluorescence results of GluR2-p in SDH in the six indicated groups: the green staining represents the ICA69 protein, the white arrow points to the positive cells in SDH area. Scale bars 20 μm. Quantification of GluR2-p per μm² in SDH (n = 3; ##KO-CFA+EA vs WT-CFA+EA, p < 0.001; group values are indicated by means ± SEM; **p < 0.01; *p < 0.05). EA = electroacupuncture, CFA = complete Freund's adjuvant, SDH = spinal dorsal horn. WT = wild type, KO = knockout.