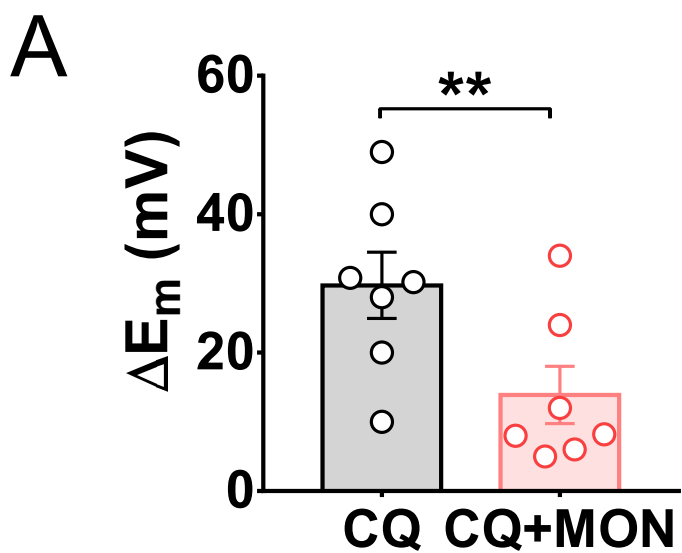


Figure S1



**B**

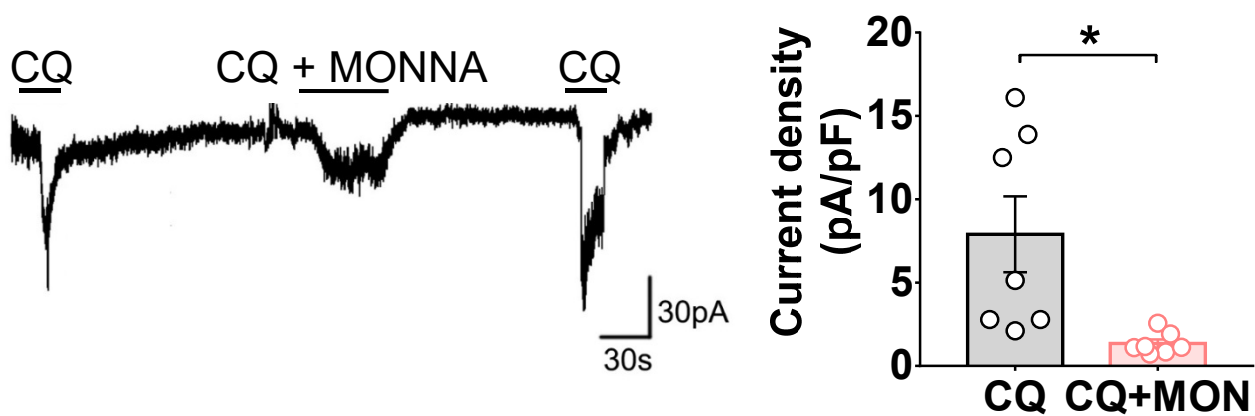


Figure S2

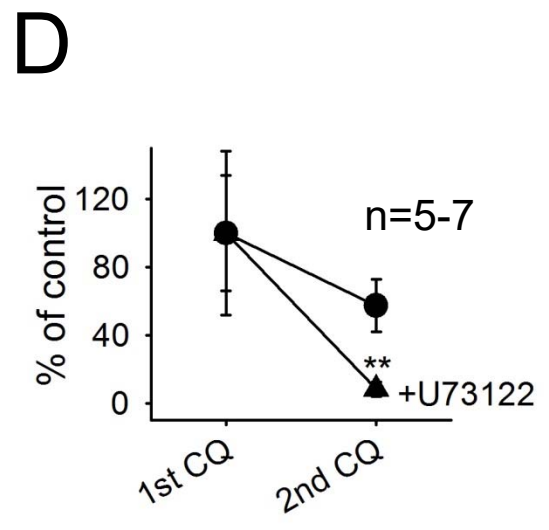
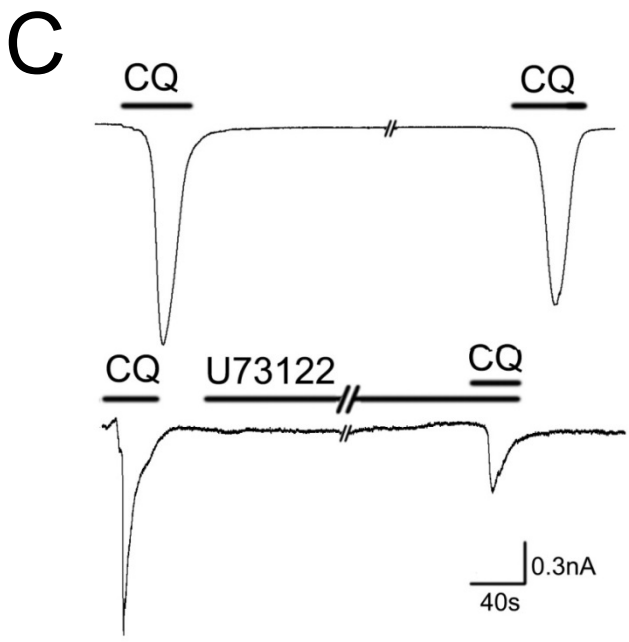
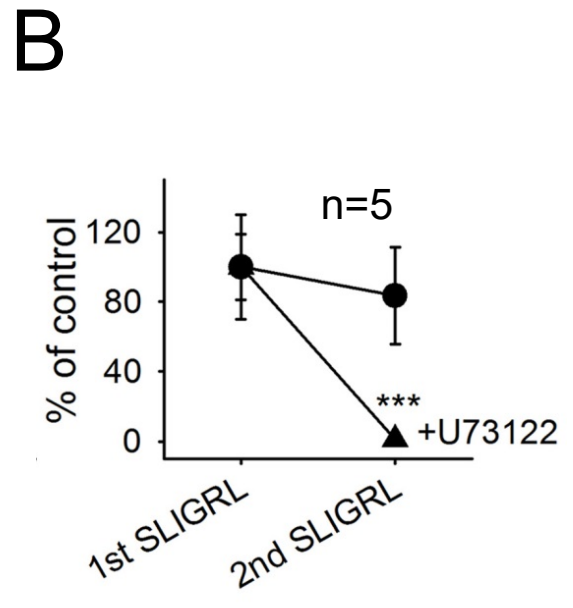
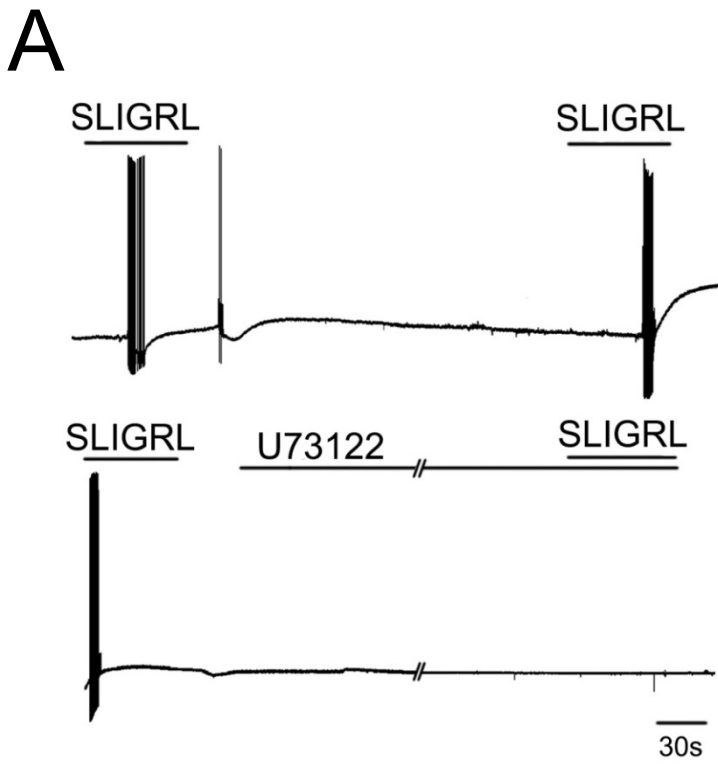


Figure S3

## SUPPLEMENTARY FIGURE LEGENDS

**Figure S1. Imiquimod-induced scratching.** The number of scratching was measured in CTL and cKO mice at 3, 5, and 7 days after the treatment of Aldara cream (5% imiquimod) on the nape of the neck. Total time spent scratching was recorded for 1hr. ns : not significant, Student's *t*-test. Data represent the mean  $\pm$  SEM.

**Figure S2. The inhibition of CQ-induced currents by MONNA.**

**(A)** The membrane potential changes of DRG neurons after the CQ (1 mM) or CQ+MONNA (10  $\mu$ M, MON) application. \*\*  $p < 0.01$ , Student *t*-test.

**(B)** *Left*, the application of 1 mM CQ caused currents in DRG neurons of CTL mice, which were inhibited by MONNA (10  $\mu$ M). *Right*, a summary of the inhibition of CQ-induced currents by MONNA, \*  $p < 0.05$ , Student *t*-test.

**Figure S3. CQ and SLIGRL-induced responses are mediated via the PLC signaling pathway.**

**(A)** SLIGRL (1 mM) evoked action potential firings in DRG neurons of CTL mice. A PLC inhibitor, U73122 (1  $\mu$ M), strongly blocked the action potential firings by the second application of SLIGRL.

**(B)** Summary of the inhibition of SLIGRL-induced action potential firings by U73122.  $n = 5$ , \*\*\*  $p < 0.001$ , Student's *t*-test. Data represent the mean  $\pm$  SEM.

**(C)** CQ (500  $\mu$ M)-induced currents in HEK cells transfected with *Ano1* and *Mrgpra3* were inhibited by a PLC inhibitor, U73122 (1  $\mu$ M).

**(D)** Summary of the inhibition of CQ-induced ANO1 currents by U73122. \*\*  $p < 0.01$ , Student's *t*-test.