

Expanded View Figures

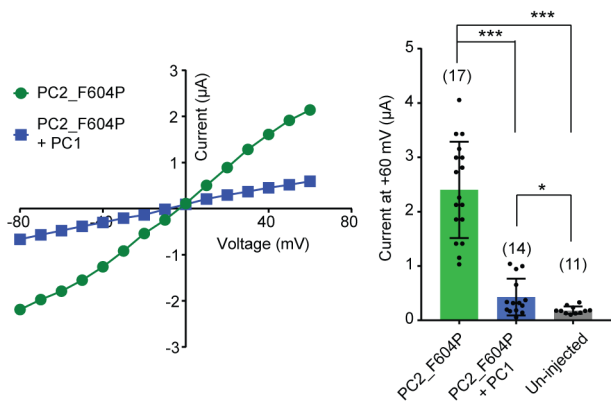


Figure EV1. Coexpression of PC1 greatly inhibited the current of PC2_F604P.

Left: representative current–voltage (I–V) curves of the indicated protein combinations. Right: Scatter plot and bar graph show the average currents at +60 mV. Oocyte numbers are indicated in parentheses. Data are presented as mean ± SD in bar graph (**P* < 0.05, ****P* < 0.001, Student's *t*-test). Source data are available online for this figure.

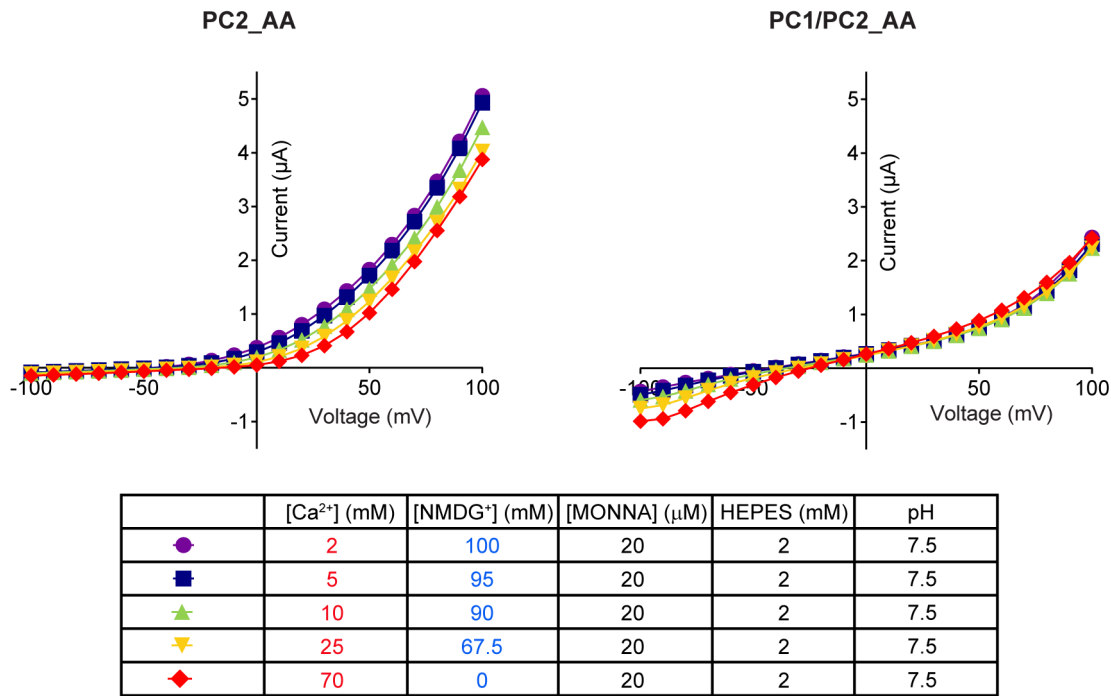


Figure EV2. Representative I–V curves of PC2_AA (left) and PC1/PC2_AA (right) in solutions with varying Ca²⁺ concentration.

Components of these solutions are shown in the table. 20 μM of MONNA was included in all solutions, and the osmolarity was compensated by adding corresponding concentrations of NMDG⁺, which is not permeable through these channels.

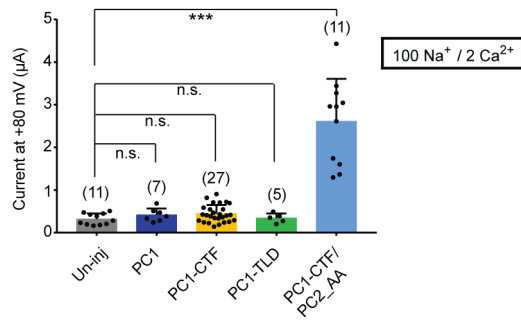


Figure EV3. Expressing full-length PC1, PC1-CTF, or PC1-TLD without PC2_AA in *Xenopus* oocytes did not give rise to significant current.

Scatter plot and bar graph show the average current sizes of oocytes expressing indicated full-length or fragment PC1 proteins in a solution containing 100 mM Na⁺ and 2 mM Ca²⁺. Oocytes expressing both PC1-CTF and PC2_AA were used as a positive control. Oocyte numbers are indicated in parentheses. Data are presented as mean ± SD in bar graph (n.s.: not significant, ****P* < 0.001, Student's *t*-test).

Source data are available online for this figure.

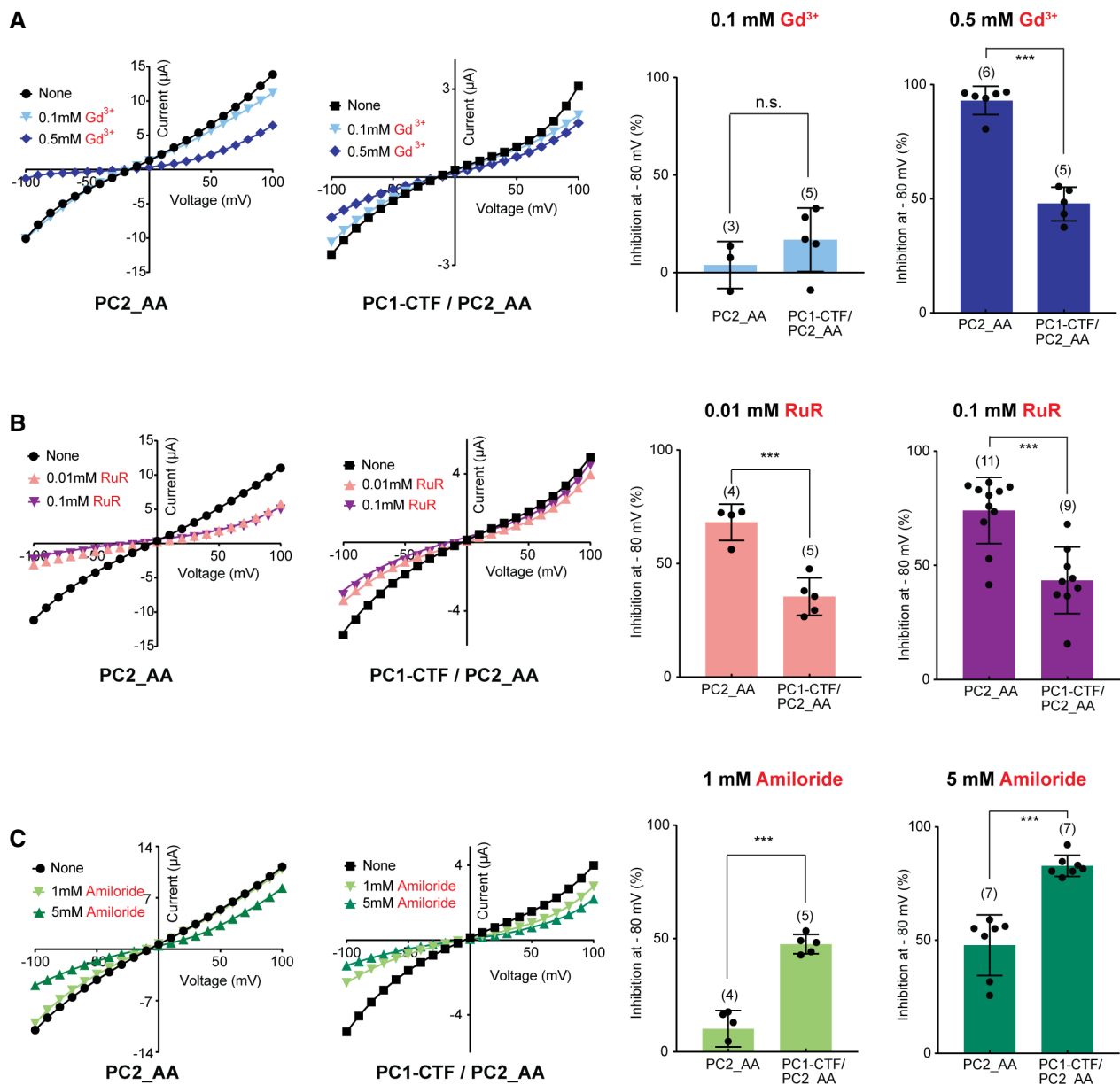


Figure EV4. The different effects of three channel blockers on the currents of the PC2_AA and the PC1-CTF/PC2_AA channels.

A–C Left two charts: representative I–V curves of the indicated two channels in the bath solution containing 100 mM Na^+ in the absence and presence of the indicated three blockers with two concentrations: 0.1 and 0.5 mM Gd^{3+} (A), 0.01 and 0.1 mM ruthenium red (RuR) (B), and 1 and 5 mM Amiloride (C). Right: Scatter and bar graphs show the inhibition (%) of the channel currents at -80 mV caused by corresponding blockers in two different concentrations, as shown on the left. Oocyte numbers are indicated in parentheses. Data are presented as mean $\pm$ SD in bar graph (n.s.: not significant, *** $p < 0.001$, Student's t -test).

Source data are available online for this figure.

Figure EV5. Pore mutations change the ion permeability of the PC1/PC2_AA channel.

Representative I–V curves show the shifts of reversal potential caused by indicated mutations in bath solutions containing 100 mM of indicated ions. Compared to group 2 mutations, group 1 mutations cause more dramatic reversal potential shifts.

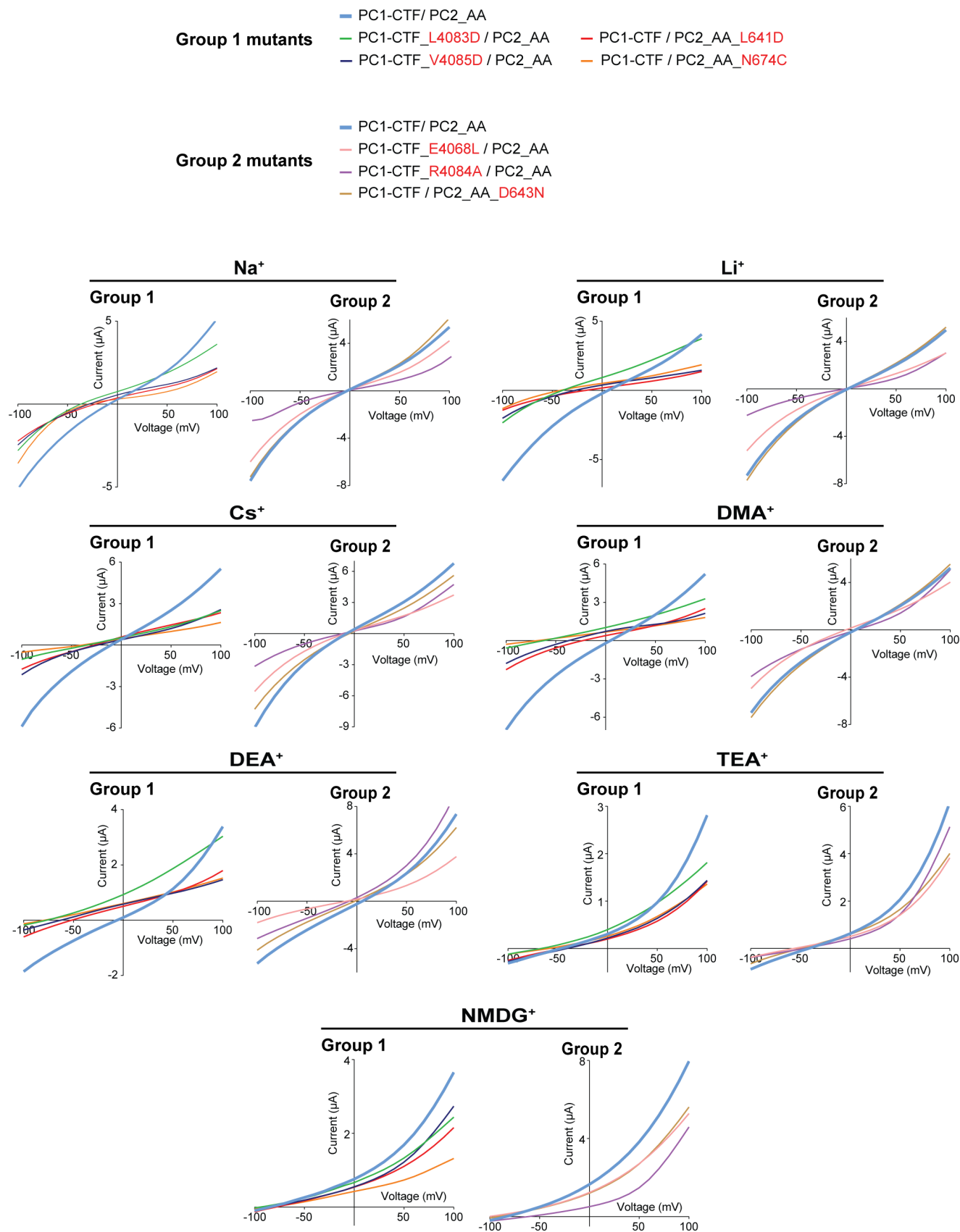


Figure EV5.