

# SUPPLEMENTAL MATERIAL

Thomas et al., <https://doi.org/10.1085/jgp.201711841>

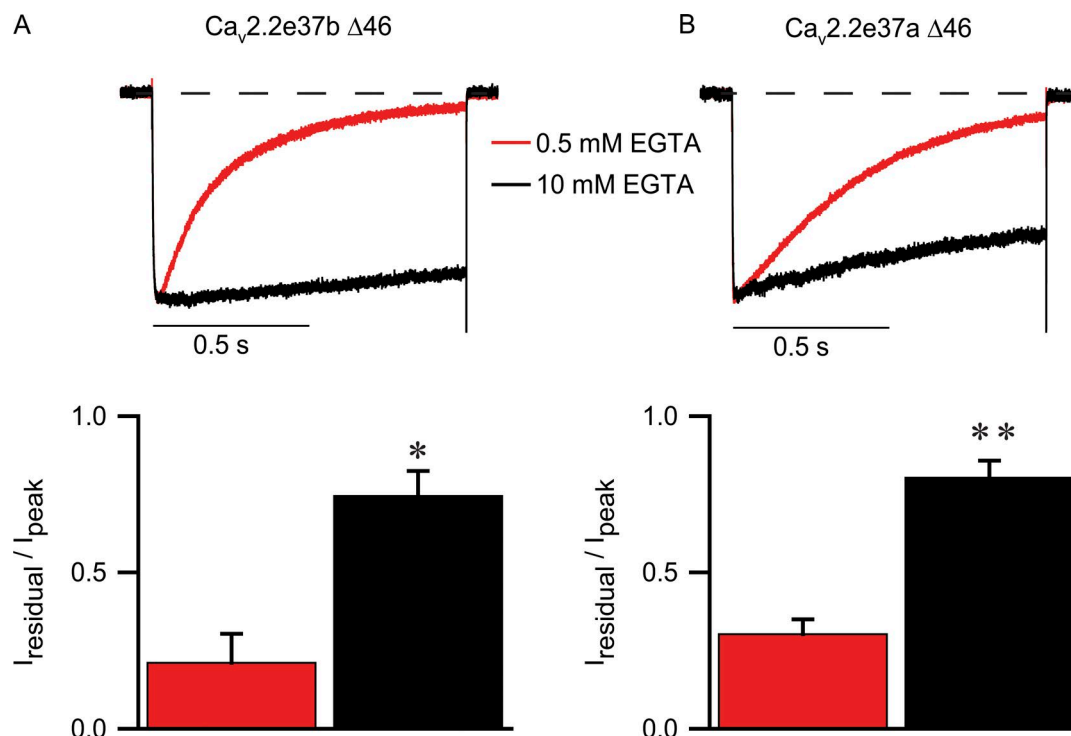


Figure S1. **Strong intracellular buffering reduces CDI of  $Ca_v2.2 \Delta46$  variants.** (A and B) Top, representative  $I_{Ca}$  evoked by a 1-s depolarizing test from  $-80$  to  $0$  mV with  $0.5$  mM (red) or  $10$  mM EGTA (black) in the intracellular recording solution. Bottom, residual current at the end of the pulse normalized to the amplitude of the peak current ( $I_{residual}/I_{peak}$ ). \*,  $P = 0.008$ ; \*\*,  $P < 0.001$ , by  $t$  test. Data represent mean  $\pm$  SEM.

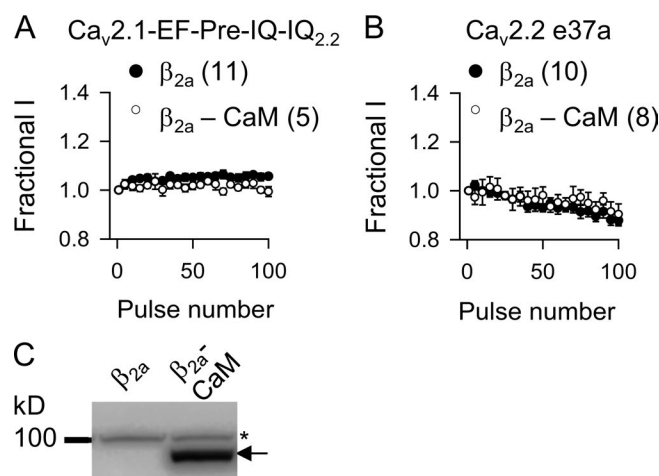


Figure S2. **Enrichment of local CaM does not produce CDF of  $Ca_v2.1-EF-pre-IQ-IQ_{2.2}$  or  $Ca_v2.2 e37a$ .** (A and B)  $I_{Ca}$  was evoked by 2-ms steps from  $-80$  to  $0$  mV at 100 Hz in HEK293T cells cotransfected with  $Ca_v2.1-EF-pre-IQ-IQ_{2.2}$  (A) or  $Ca_v2.2 e37a$  (B) with either  $\beta_{2a}$  (filled circles) or  $\beta_{2a}-CaM$  (open circles) as well as  $\alpha2\delta$ . The amplitude of each current was normalized to that of the first current of the train and plotted against pulse number. For clarity, every fifth point is plotted. Points represent mean  $\pm$  SEM. Parentheses indicate numbers of cells. (C) Western blot of lysates of HEK293T transfected as in A probed with anti-CaM antibodies. A band corresponding to the predicted molecular weight of  $\beta_{2a}-CaM$  was detected in cells expressing  $\beta_{2a}-CaM$  but not  $\beta_{2a}$  (arrow). Asterisk indicates nonspecific band. Results are representative of three independent experiments.