**Supplementary File 3.** Peak-ICa−Voltage relationship for wild type and *Ribeye-*korods filled with 0.5 or 10 mM EGTA.

Comparison of different intracellular concentrations of EGTA (within each genotype)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| genotype, EGTA conc. | Modified Boltzmann-IV fits | | | | | Boltzmann fits | | |
| ICa (pA)  @-10mV | V1/2  (mV) | dx  (mV-e−1) | Vrev  (mV) | Gmax  (pA-mV−1) | *peak-ICa*  *(pA)* | *V0.5*  *(mV)* | *dx*  *(mV-e−1)* |
| wt, 10 EGTA  9 cells | -14.1 ± 0.7 | -24.0 ± 1.3 | -6.2 ± 0.6 | 44.6 ± 2.6 | 0.30 ± 0.02 | -14.5 ± 0.3 | -28.7 ± 0.4 | 4.8 ± 0.4 |
| wt, 0.5 EGTA  8 cells | -14.1 ± 0.6 | -23.2 ± 0.9 | -6.2 ± 0.6 | 46.4 ± 2.6 | 0.29 ± 0.02 | -14.4 ± 0.2 | -28.6 ± 0.2 | 4.7 ± 0.2 |
| ko, 10 EGTA  5 cells | -9.3 ± 0.7 | -22.3 ± 1.9 | -6.9 ± 0.8 | 43.2 ± 2.9 | 0.22 ± 0.02 | -10.0 ± 0.2 | -27.3 ± 0.44 | 5.5 ± 0.4 |
| ko, 0.5 EGTA  7 cells | -11.3 ± 0.9  p: 0.13 | -25.3 ± 1.1  p: 0.17 | -6.3 ± 0.7 | 43.9 ± 3.1 | 0.22 ± 0.02 | -11.5 ± 0.82  p: 0.15 | -30.3 ± 1.1  p: 0.053 | 5.2 ± 1.1  p: 0.83 |
| Comparison of wild type versus *Ribeye-*ko | | | | |  |  |  |  |
| wt 10 EGTA | -14.1 ± 0.7 | -24.0 ± 1.3 | -6.2 ± 0.6 | 44.6 ± 2.6 | 0.30 ± 0.02 | -14.5 ± 0.3 | -28.7 ± 0.4 | 4.8 ± 0.4 |
| ko 10 EGTA | -9.3 ± 0.7  **p: 0.0008** | -22.3 ± 1.9  p: 0.46 | -6.9 ± 0.8 | 43.2 ± 2.9 | 0.22 ± 0.02  **p: 0.024** | *-*10.0 ± 0.02  **p: 0.0001** | -27.3 ± 0.44  **p: 0.033** | 5.5 ± 0.4  **p: 0.28** |
| wt 0.5 EGTA | -14.1 ± 0.6 | -23.2 ± 0.9 | -6.2 ± 0.6 | 46.4 ± 2.6 | 0.29 ± 0.02 | -14.4 ± 0.2 | -28.6 ± 0.2 | 4.7 ± 0.2 |
| ko 0.5 EGTA | -11.3 ± 0.9  **p: 0.020** | -25.3 ± 1.1  p: 0.17 | -6.3 ± 0.7 | 43.9 ± 3.1 | 0.22 ± 0.02  **p: 0.029** | -11.5 ± 0.82  **p: 0.003** | -30.3 ± 1.1  p: 0.18 | 5.2 ± 1.1  p: 0.64 |

Notes: Average peak-ICa versus Vstep curves were fit with a Boltzmann equation to derive the values stated above (see Materials and methods for equations). The voltage step protocol is described in the legend to Supplementary File 2. Liquid junction potentials were not subtracted from the voltage values presented above (i.e., V1/2, Vrev and V0.5); see Supplementary File 2 for details.