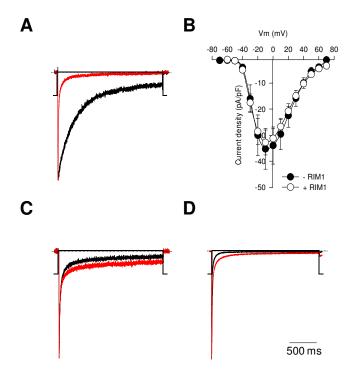
## Supplemental Figure 1



Supplemental Figure 1. A) Superimposed whole cell current traces evoked by 2-s depolarizing voltage steps from -80 to -30 mV in HEK-293 cells expressing  $Ca_v 1.3\alpha 1/Ca_v \alpha_z \delta -1/Ca_v \beta_3$  channels, using  $Ba^{2+}$  (black) or  $Ca^{2+}$  (red) as the charge carrier. B) Average current density-voltage relationships for  $I_{Ca}$  recorded from HEK-293 cells expressing  $Ca_v 1.3\alpha 1/Ca_v \alpha_z \delta -1/Ca_v \beta_3$  channels in absence and presence of RIM1 as indicated. C, D) Representative  $I_{Ca}$  traces recorded by 2-s depolarizing voltage steps from -80 to -30 and -20 mV in HEK-293 cells expressing recombinant channels formed of  $Ca_v 1.3\alpha 1/Ca_v \alpha_z \delta -1$  together with  $Ca_v \beta_2$  or  $Ca_v \beta_3$  subunits, respectively, in absence (black traces) and presence (red traces), of RIM1. Peak amplitude of the currents before and after RIM1 co-expression was normalized for comparison.