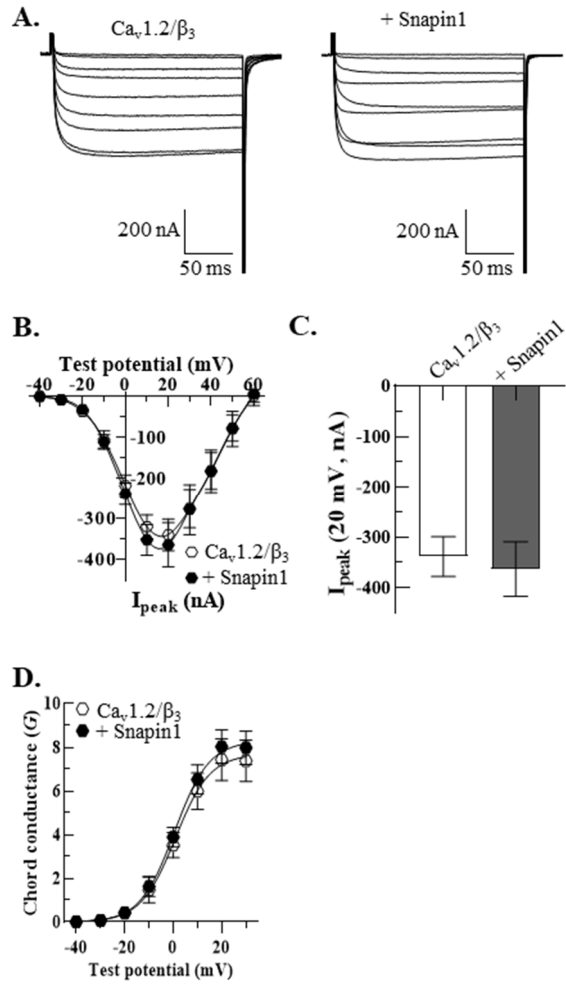


**Supplementary Figure S1.** No regulatory effect of Snapin1 on  $\text{Cav}1.3\text{s}$ . (A) Representative  $\text{Ca}^{2+}$  current traces recorded from HEK-293 cells expressing  $\text{Cav}1.3\text{s}/\beta_3/\alpha_2\delta_2$  (left) or  $\text{Cav}1.3\text{s}/\beta_3/\alpha_2\delta_2/\text{Snapin1}$  (right).  $\text{Cav}1.3\text{s}$  current traces were evoked in response to the  $I-V$  protocol (described in Figure 2). (B–C)  $I-V$  relationships of  $\text{Cav}1.3\text{s}/\beta_3/\alpha_2\delta_2$  (◇) and  $\text{Cav}1.3\text{s}/\beta_3/\alpha_2\delta_2/\text{Snapin1}$  (◆). Current density values (pA/pF) were averaged and plotted against test potentials ( $n=6$ ). (C) The average current density values at 0 mV test potential are represented as bar graphs ( $-103.4 \pm 9.8$  vs  $-110.4 \pm 10.6$  pA/pF;  $n = 6$ ). (D) Activation and channel availability curves of  $\text{Cav}1.3\text{s}$  channels co-expressed without or with Snapin1. Activation and channel availability curves were obtained by the same methods in Figure 2 legend ( $n = 6$ ).



**Supplementary Figure S2.** Snapin1 did not alter  $\text{Ca}_v1.2$  channel activity in *Xenopus* oocytes. (A) Representative current traces of  $\text{Ca}_v1.2/\beta_3$  co-expressed without (left) or with Snapin1 (right) recorded in 10 mM  $\text{Ba}^{2+}$  solution. Current traces were evoked by an  $I-V$  protocol consisting of 200 ms depolarizing step pulses from  $-40$  mV to  $+60$  mV from a holding potential of  $-80$  mV. (B–C)  $I-V$  relationships of  $\text{Ca}_v1.2/\beta_3$  without or with Snapin1. (B) Peak current amplitude values of  $\text{Ca}_v1.2/\beta_3$  and  $\text{Ca}_v1.2/\beta_3/\text{Snapin1}$  were plotted against test potentials ( $n=9$ ). (C) Maximal peak current amplitude of  $\text{Ca}_v1.2/\beta_3$  and  $\text{Ca}_v1.2/\beta_3/\text{Snapin1}$ . Average peak current amplitude values at  $+20$  mV test potential are represented as bar graphs ( $-338.7 \pm 39.1$  and  $-363.5 \pm 54.1$  nA). (D) Activation curves of  $\text{Ca}_v1.2/\beta_3$  and  $\text{Ca}_v1.2/\beta_3/\text{Snapin1}$ . Activation curves were obtained by the same methods in Figure 2 legend ( $n = 6-8$ ). The activation curves are almost overlapped.