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Mutation associated with an autosomal dominant cone-rod dystrophy CORD7 modifies RIM1-mediated modulation of voltage-dependent Ca²⁺ channels.

Takafumi Miki, Shigeki Kiyonaka, Yoshitsugu Uriu, Michel de Waard, Minoru Wakamori, Aaron M. Beedle, Kevin P. Campbell, Yasuo Mori

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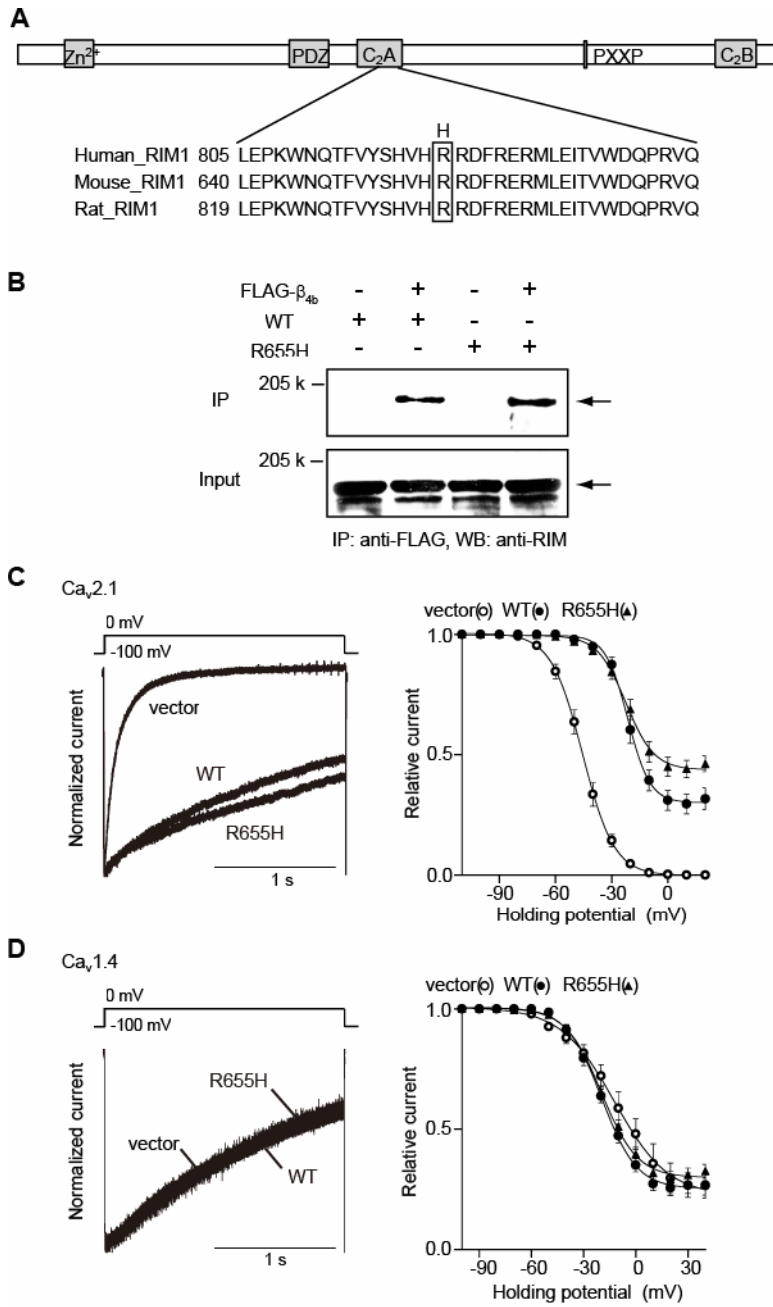


Figure 1

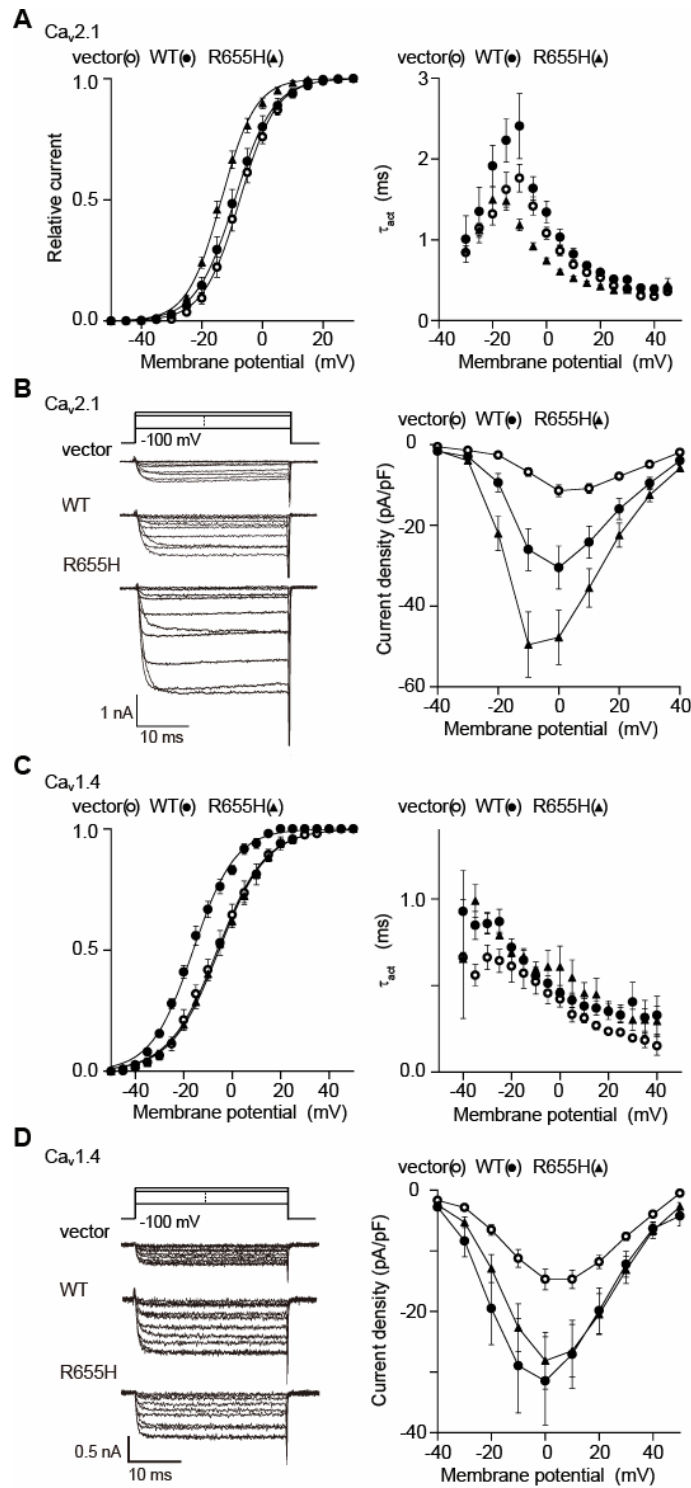


Figure 2

Table 1 Effects of mouse RIM1_{R655H} constructs on current density, activation, and inactivation of Cav2.1, or Cav1.4 channel ¹⁾²⁾.

Ca _v 2.1	Current density ³⁾		Activation parameters ⁴⁾				Inactivation parameters ⁵⁾					
	(pA/pF)	S.E.	V _{0.5}	S.E.	k	S.E.	a	S.E.	V _{0.5}	S.E.	k	S.E.
vector	-11.43	1.48	-7.19	1.24	4.47	1.26	1.00	0.00	-45.90	1.77	-7.53	0.27
RIM1	-30.45	5.34 *	-9.11	1.55	5.57	0.23	0.70	0.04 ***	-21.26	1.24 ***	-5.63	0.65
RIM1 _{R655H}	-47.73	6.71 *** #	-13.35	0.89 ** #	5.07	0.16	0.57	0.03 *** ##	-22.00	1.18 ***	-7.97	0.97 #

Ca _v 1.4	Current density ³⁾		Activation parameters ⁴⁾				Inactivation parameters ⁵⁾					
	(pA/pF)	S.E.	V _{0.5}	S.E.	k	S.E.	a	S.E.	V _{0.5}	S.E.	k	S.E.
vector	-14.71	1.71	-6.08	1.77	9.69	0.83	0.79	0.06	-10.50	3.40	-15.12	1.00
RIM1	-31.48	7.29 *	-16.16	1.02 ***	8.32	0.53	0.75	0.03	-19.54	1.78 *	-9.69	0.33 ***
RIM1 _{R655H}	-28.13	4.70 *	-5.41	0.87 ###	9.92	0.59	0.73	0.02	-18.00	1.56 *	-10.84	0.74 ***

1) **P* < 0.05, ***P* < 0.01, ****P* < 0.001 versus vector (ANOVA, Fisher's test).

2) #*P* < 0.05, ##*P* < 0.01, ###*P* < 0.001 versus RIM1 (ANOVA, Fisher's test).

3) Amplitude of Ba²⁺ currents evoked by depolarizing pulse to 0 mV from V_h of -100 mV are divided by capacitance.

4) V_{0.5} is the half-maximal activation voltage, and *k* is the slope factor.

5) *a* is the rate of inactivating component, V_{0.5} is the half-inactivation potential and *k* is the slope factor.