

Supplementary Information

**Voltage-driven Ca^{2+} -Binding at the L-type Ca^{2+} -Channel
Triggers Cardiac EC-Coupling Prior to Ca^{2+} -Influx**

by

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Table S1

The ratio of contracting cells to total number of cells within the different groups

	Contracting/total cells (%)	Contracting/total cells (%)
	Spontaneous	Stimulated
Ctrl	91.9 (41/45)	94.2 (49/52)
Ctrl+ Nif	3.4 (1/29)	11.9 (7/59)
GFP	100 (6/6)	87.7 (6/7)
GFP+ Nif	0.0 (0/6)	11.1 (1/9)
^a α ₁ 1.2/T1066Y	77.1 (27/35)	90 (9/10)
^a α ₁ 1.2/L775P T1066Y	63.6 (14/22)	94 (32/34)
^a α ₁ 1.2/L775P T1066Y/4A	4.5 (1/22)	27 (10/37)

^a In the presence of 8μM Nif

Table S2Frequency of spontaneously induced Ca²⁺ transients in cardiomyocytes

Spontaneous contractions		
	Frequency (Ca ²⁺ transients/min)	Cell number (n)
Ctrl	**44.2 ± 4.5	19
Ctrl+ Nif	1.1 ± 1.1	16
GFP	**36.7 ± 0.3	6
GFP+ Nif	0.0 ± 0.0	6
^a α ₁ 1.2/T1066Y	**20.5 ± 3.4	35
^a α ₁ 1.2/L775P T1066Y	**8.8 ± 1.8	22
^a α ₁ 1.2/L775P T1066Y/4A	0.8 ± 0.8	22

^a In the presence of 8μM Nif****** p < 0.001

Table S3Frequency of voltage induced Ca^{2+} -transients in cardiomyocytes

Stimulated contractions		
	Frequency (Ca^{2+} transients/min)	Cell number (n)
Ctrl	**36.8 ± 3.8	15
Ctrl+ Nif	1.73 ± 1.6	15
GFP	30.9 ± 5.1	7
GFP+ Nif	4.0 ± 4.0	9
^a α_1 1.2/T1066Y	**28.8 ± 5.2	10
^a α_1 1.2/L775P T1066Y	**37.3 ± 2.7	34
^a α_1 1.2/L775P T1066Y/4A	8.1 ± 2.4	37

^a In the presence of 8μM Nif****P < 0.001**