

Table S1. Parameters with genetic variation (200 SNPs case). Listing of the 34 parameters where genetic variation was introduced. The descriptions, units and baseline values are taken from the original publication [40]. The minimum and maximum values were obtained from the Monte Carlo simulations.

Parameter	Description	Unit	Baseline value	Min	Max
Ka+	The PC1 – PO1 rate constant of the Ryanodine receptor	$\mu\text{M}^{-4}/\text{ms}$	6.08e-3	4.16e-3	8.31e-3
Ka-	The PO1 – PC1 rate constant of the Ryanodine receptor	ms^{-1}	7.133e-2	4.52e-2	9.59e-2
Kb+	The PO1 – PO2 rate constant of the Ryanodine receptor	$\mu\text{M}^{-3}/\text{ms}$	4.05e-3	2.72e-3	5.45e-3
Kb-	The PO2 – PO1 rate constant of the Ryanodine receptor	ms^{-1}	9.65e-1	6.59e-1	1.27
Kc+	The PO1 – PC2 rate constant of the Ryanodine receptor	ms^{-1}	9.00e-3	5.81e-3	1.17e-2
Kc-	The PC2 – PO1 rate constant of the Ryanodine receptor	ms^{-1}	8.00e-4	5.50e-4	1.12e-3
m	The Ca^{2+} cooperativity parameter of PO1 – PO2 of the Ryanodine receptor	-	3.0	2.03	4.02
n	The Ca^{2+} cooperativity parameter of PC1 – PO1 of the Ryanodine receptor	-	4.0	2.68	5.44
P_CaL	The permeability of the L-type Ca^{2+} channel	ms^{-1}	2.5	1.66	3.33
t_L	The time constant of the switch between open and close states of the L-type Ca^{2+} channel	ms^{-1}	1.5	9.21e-1	2.00
tau_L	The Inactivation time constant of the L-type Ca^{2+} channel	ms^{-1}	1.15e3	7.51e2	1.54e3
phi_L	The proportion of closed states in open mode of the L-type Ca^{2+} channel	-	1.80	1.22	2.42
Kup	The SERCA affinity to Ca^{2+}	μM	4.12e-1	2.80e-1	5.43e-1
V1	The leak constant of the Network Sarcoplasmic Reticulum	ms^{-1}	4.5	3.04	5.92
KCSQN	The Calsequestrin affinity to Ca^{2+}	μM	6.30e2	4.08e2	8.54e2
K_Co	The affinities of the $\text{Na}^+/\text{Ca}^{2+}$ exchanger to extracellular Ca^{2+}	μM	1.4e3	9.53e2	1.86e3
K_Ci	The affinities of the $\text{Na}^+/\text{Ca}^{2+}$ exchanger to intracellular Ca^{2+}	μM	3.6	2.47	4.85
K_No	The affinities of the $\text{Na}^+/\text{Ca}^{2+}$ exchanger to extracellular Na^+	μM	8.80e4	5.92e04	1.15e5
K_Ni	The affinities of the $\text{Na}^+/\text{Ca}^{2+}$ exchanger to intracellular Na^+	μM	1.2e4	8.00e3	1.60e4
KNai	The affinity of the Na^+/K^+ pump to intracellular Na^+	μM	1.66e4	1.13e4	2.20e4
KKo	The affinity of the Na^+/K^+ pump to extracellular K^+	μM	1.5e3	1.03e3	1.98e3
KpCa	The affinity of the Ca^{2+} pump to intracellular Ca^{2+}	μM	2.89e-1	1.94e-1	4.03e-1
Vmax	The maximal exchange rate of $\text{Na}^+/\text{Ca}^{2+}$ exchanger	pA/pF	3.94	2.73	5.22
Imax	The maximal current of the Na^+/K^+ pump	pA/pF	2.49	1.56	3.33
GK1	The maximal conductance of the time-dependent K^+ channel	ms/ μF	3.5e-1	2.32e-1	4.66e-1
GKr	The maximal conductance of the rapid delayed rectifier K^+ channel	ms/ μF	1.65e-2	1.12e-2	2.23e-2
GKur	The maximal conductance of the ultrarapidly activating delayed rectifier K^+ channel	ms/ μF	2.50e-1	1.68e-1	3.33e-1
KCl	The half saturation constant of the Ca^{2+} activated Cl^- channel	μM	10.0	6.30	1.32e1

GNa	The maximal conductance of the Na ⁺ channel	ms/μF	1.60e1	1.03e1	2.17e1
GKtof	The maximal conductance of the rapidly recovering transient outward K ⁺ channel	ms/μF	5.35e-1	3.54e-1	7.16e-1
GClCa	The maximum conductance of the Ca ²⁺ activated Cl ⁻ channel	ms/μF	1.00e1	6.04	1.33e1
on_rate	The autophosphorylation rate of Calmodulin	ms ⁻¹	5.0e-2	3.07e-2	6.50e-2
off_rate	The dephosphorylation rate of the Calmodulin	ms ⁻¹	2.0e-4	1.31e-4	2.67e-4
IpCm	The maximal current of the Ca ²⁺ pump	pA/pF	9.55e-2	6.14e-2	1.28e-1