1



Value

 5.18×10^{-12} 4

9.6485 ×

4

Source

1

1

CORRECTION

Correction: A dual-clock-driven model of lymphatic muscle cell pacemaking to emulate knock-out of Ano1 or IP3R

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The authors regret that, in the original article, parameters K_c and q were inadvertently omitted from Table 1. The revised table is presented here with the added rows. The error appears in print and in PDFs downloaded before January 22, 2024.

Table 1. Values for constants in the model

Parameter	Units	Meaning	Value	Source	Parameter	Units	Meaning	Valu
J _{xce}	μmol/s	Maximum Ca ²⁺ efflux from cell via pmCa pump	0.28 v _c /b _c		E _C	mV	Reversal potential for Ano1 current	-20
K _{ce}	μΜ	Half saturation <i>Z</i> -value for pmCa pump	0.425		EL	mV	Reversal potential for L-type channels	+20
A ₁	μmol/s	Constant Ca ²⁺ leak into cell	0.0015 v _c / b _c		G_{i}	nS	Conductance of passive channels	0.4
A ₂	/s	Ca^{2+} flux into cell per unit of IP_3	$0.01/b_{c}$		G_{xC}	nS	Max. Ca ²⁺ -induced Cl ⁻ conductance	0.8
Р	μΜ	IP₃ concentration in cytoplasm	0.7		GL	nS	Conductance of L-type Ca ²⁺ channels	1.7
J _{xsi}	μmol/s	Maximum SERCA flux	$9 v_c/b_c$		Kc	μМ	Half saturation for Cl-	1.1
K _{si}	μΜ	Half saturation Z-value for	0.1			-	conductance	
k _{se}	L/s	SERCA pump Constant Ca ²⁺ leak from	3.3v _c /b _c		9	•	Hill exponent for Cl ⁻ conductance	4
		store			V_{hm}	mV	Half saturation for gate fn.	-46
$k_{\rm f}$	L/s	Scale for IP ₃ -dependent store Ca ²⁺ efflux	$4.8v_c/b_c$		V _{km}	mV	m(V) Inverse slope const., gate fn.	-4
k _{p1}	/µmol/s	IP ₃ R binding constant	400	3	KIII		m(V)	
k _{p2}	/µmol/s	IP ₃ R binding constant	0.2	3	K _h	μΜ	Half saturation for gate fn.	4
k _{p3}	/µmol/s	IP₃R binding constant	400	3	_		h _∞ (Z)	
k _{p4}	/µmol/s	IP₃R binding constant	0.2	3	Ψ		Hill exponent for $h_{\infty}(Z)$	20
k _{p5}	/µmol/s	IP₃R binding constant	20	3	V_{hh}	mV	Half saturation for gate fn. $h_{\infty}(V)$	-48
k _{m1}	/s	IP₃R binding constant	52	3	$\overline{V_{\mathrm{kh}}}$	mV	Inverse slope const., gate fn. $h_{\infty}(V)$	1
k _{m2}	/s	IP ₃ R binding constant	0.21	3				
k _{m3}	/s	IP ₃ R binding constant	377.2	3	τ_{n}	S	Minimum of time constant	0.5
k _{m4}	/s	IP₃R binding constant	0.029	3			$\tau_h(V)$	
k _{m5}	/s	IP ₃ R binding constant	1.64	3	τ_{x}	S	Maximum of time constant $\tau_h(V)$	10
b _c	e	Ca ²⁺ buffering constant	0.01	2	α	(µmol/	Ca ²⁺ flux per unit current	5.18 :
v _c	L	Cytosol volume	10-12	2	u	s)/pA	ca hax per unit current	5.10
Vs	L	Store volume	ν _c /5.5	3	Z	-	Valency of calcium ion	2
C _m	pF	Cell capacitance	25	2	F	pC/μmol	Faraday constant	9.648
E _i	mV	Reversal potential, passive	-67.2	1				1010

Sources (otherwise, estimated): 1 is Imtiaz et al. (2007), although in many cases the values have been reinterpreted in terms of units, etc., 2 is Lees-Green et al. (2014), 3 is Keener and Sneyd (2009), and 4 is a universal physical constant. Estimated values were based on existing sources. L, litre.

References

Imtiaz, M.S., J. Zhao, K. Hosaka, P.-Y. von der Weid, M. Crowe, and D.F. van Helden. 2007. Pacemaking through Ca2+ stores interacting as coupled oscillators via membrane depolarization. Biophys. J. 92:3843-3861. https://doi.org/10.1529/biophysj.106.095687

Keener, J., and J. Sneyd. 2009. Mathematical Physiology I: Cellular Physiology. In Interdisciplinary Applied Mathematics. Vol. 8/I. Second edition. Springer Science+Business Media LLC, New York.

Lees-Green, R., S.J. Gibbons, G. Farrugia, J. Sneyd, and L.K. Cheng. 2014. Computational modeling of anoctamin 1 calcium-activated chloride channels as pacemaker channels in interstitial cells of Cajal. Am. J. Physiol. Gastrointest. Liver Physiol. 306:G711–G727. https://doi.org/10.1152/ajpgi.00449.2013

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