

Hernandez et al., <http://www.jgp.org/cgi/content/full/jgp.200910313/DC1>

TABLE S1
Model parameters

Parameter	Value	Units
tau_PLC_active	0.28	s
EC ₅₀ _PLC_active	1.6	μM
k_PLC	0.4	μm ² s ⁻¹
k_syn	0.001	s ⁻¹
k_deg	0.04	s ⁻¹
K _A _Kv7.2 (WT)	500	μm ⁻²
K _A _Kv7.3	75	μm ⁻²
K _A _Kv7.4	2,500	μm ⁻²
K _A _Kv7.2 (EEE)	10 ⁶	μm ⁻²
K _A _Kv7.2 (R463E)	75	μm ⁻²
K _A _Kv7.2 (R463Q)	5,000	μm ⁻²

TABLE S2
Kv7 currents

Channel	Model current
Kv7.2/Kv7.3	$(Kv7.2_PIP_2)^2 \times (Kv7.3_PIP_2)^2$
Kv7.3	$(Kv7.3_PIP_2)^4$
Kv7.4	$(Kv7.4_PIP_2)^4$
Kv7.2 (EEE)/Kv7.3	$(Kv7.2 (EEE)_PIP_2)^2 \times (Kv7.3_PIP_2)^2$
Kv7.2 (R463Q)/Kv7.3	$(Kv7.2 (R463Q)_PIP_2)^2 \times (Kv7.3_PIP_2)^2$
Kv7.2 (R463E)/Kv7.3	$(Kv7.2 (R463E)_PIP_2)^2 \times (Kv7.3_PIP_2)^2$

TABLE S3
Initial values

Species	Initial value	Units
Inactive PLC	1	μm ⁻²
Active PLC	0	μm ⁻²
PI	200,000 (clamped)	μm ⁻²
PIP ₂	5,000	μm ⁻²
Kv7.X	4.0	μm ⁻²
Kv7.X_PIP ₂	0.0	μm ⁻²

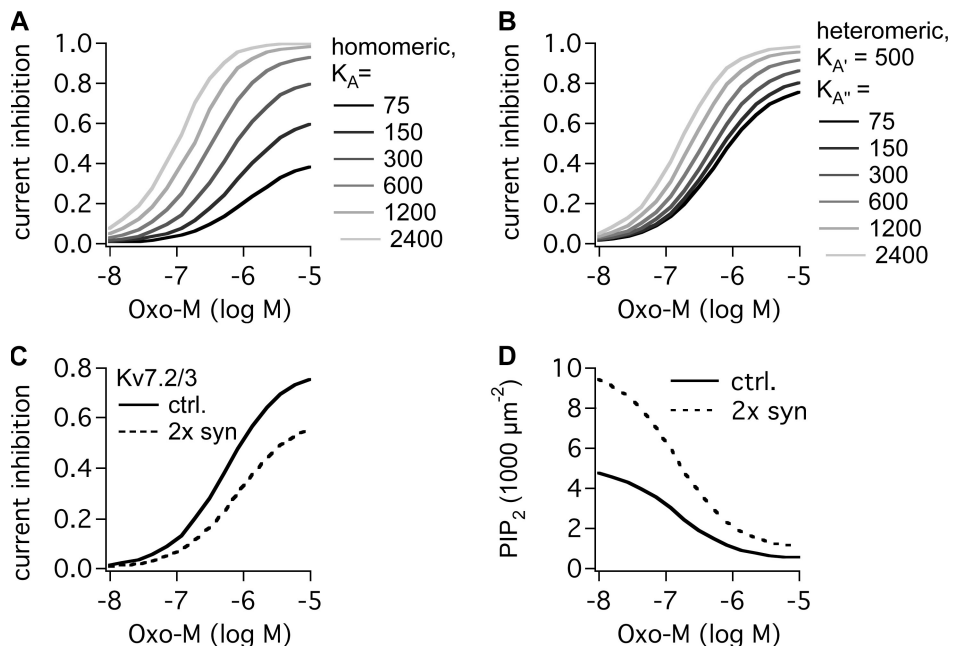


Figure S1. General characteristics of the model. (A and B) The results of the model in which K_A values for PIP₂ are varied over a wide range for a homomeric (A) or heteromeric (B) channel. (B) Two invariant Kv7.2 subunits and two subunits with varying K_A values are modeled. (C and D) The effects on the oxo-M dose-response relation on current inhibition (C) or PIP₂ density (D) of doubling the value of tonic PIP₂ synthesis (syn in the model).