Wennemuth, G., D.F. Babcock, and B. Hille
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Due to a printing error, Figure 9 was not printed in its entirety. The corrected figure appears below.

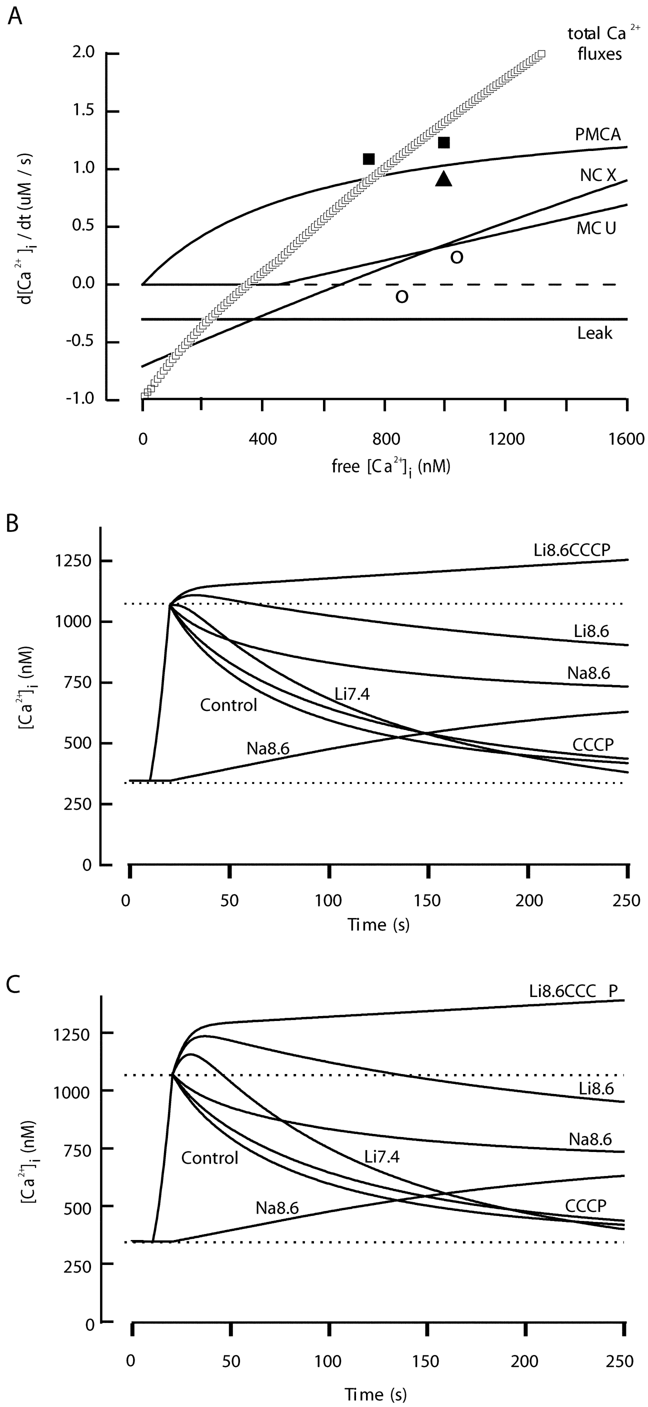

FIGURE 9. Calcium clearance calculated from a kinetic model that includes rate equations for PMCA, NCX, MCU, and Ca^{2+} leak. The assumed resting conditions include a resting membrane potential of −43 mV and a set point for $[Na^+]_i$ of 16 mM. The equations are in the APPENDIX. (A) Dependence of flux rates on $[Ca^{2+}]_i$ for each transport mechanism. Calculations assume resting levels of $[Na^+]_i$, control Na7.4 extracellular medium, and a normal resting potential. Rates would be different if any of these conditions are changed. These fluxes represent the number of micromoles of Ca^{2+} transported per second from a liter of cell water (2.3×10^{13} sperm). The rate of change of free $[Ca^{2+}]_i$ (Table I) would be given by the sum of these values (total) divided by the binding ratio for Ca^{2+}. The symbols are values estimated in Table I from our experiments (filled squares, total flux; open triangle, PMCA flux; open circles, NCX flux). (B) Calculated time courses of intracellular free $[Ca^{2+}]$ before, during, and after a simulated 10-s alkaline K^+ depolarization. To mimic the test conditions shown in Figs. 2–7, recovery parameters were changed as follows: the maximum velocity of the PMCA was reduced to 21% (for Na8.6), or $[Na^+]_o$ was set to zero (for Li7.4), or the MCU flux was turned off (for CCCP), or combinations of these changes were used. (C) The same calculation as in part B but with the velocity of the NCX increased threefold during each period in a Na^+-free, Li^+ solution to mimic possible recovery from Na^+-induced inactivation of the NCX.