A Double Tyrosine Motif in the Cardiac Sodium Channel Domain III-IV Linker Couples Calcium Dependent Calmodulin Binding to Inactivation Gating

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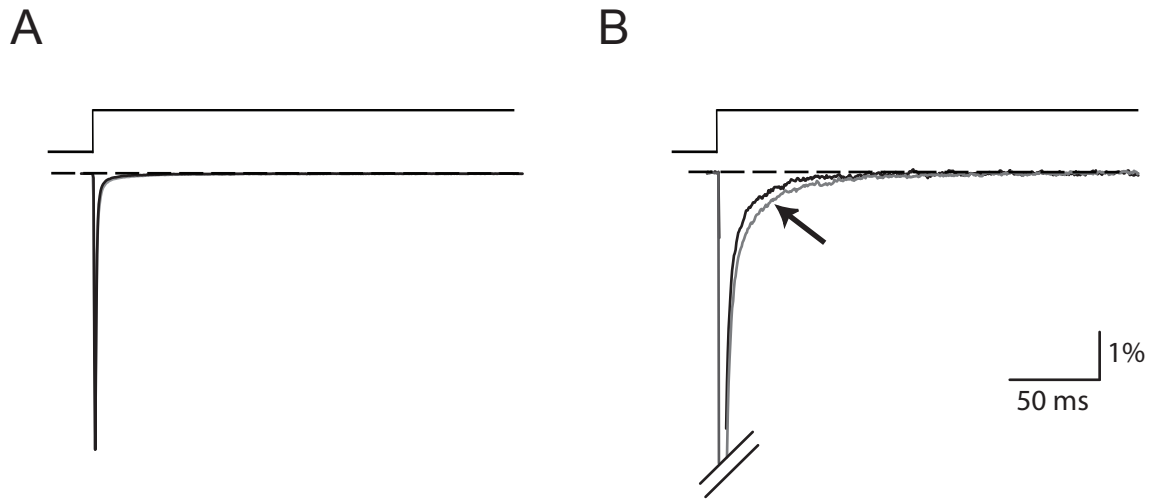
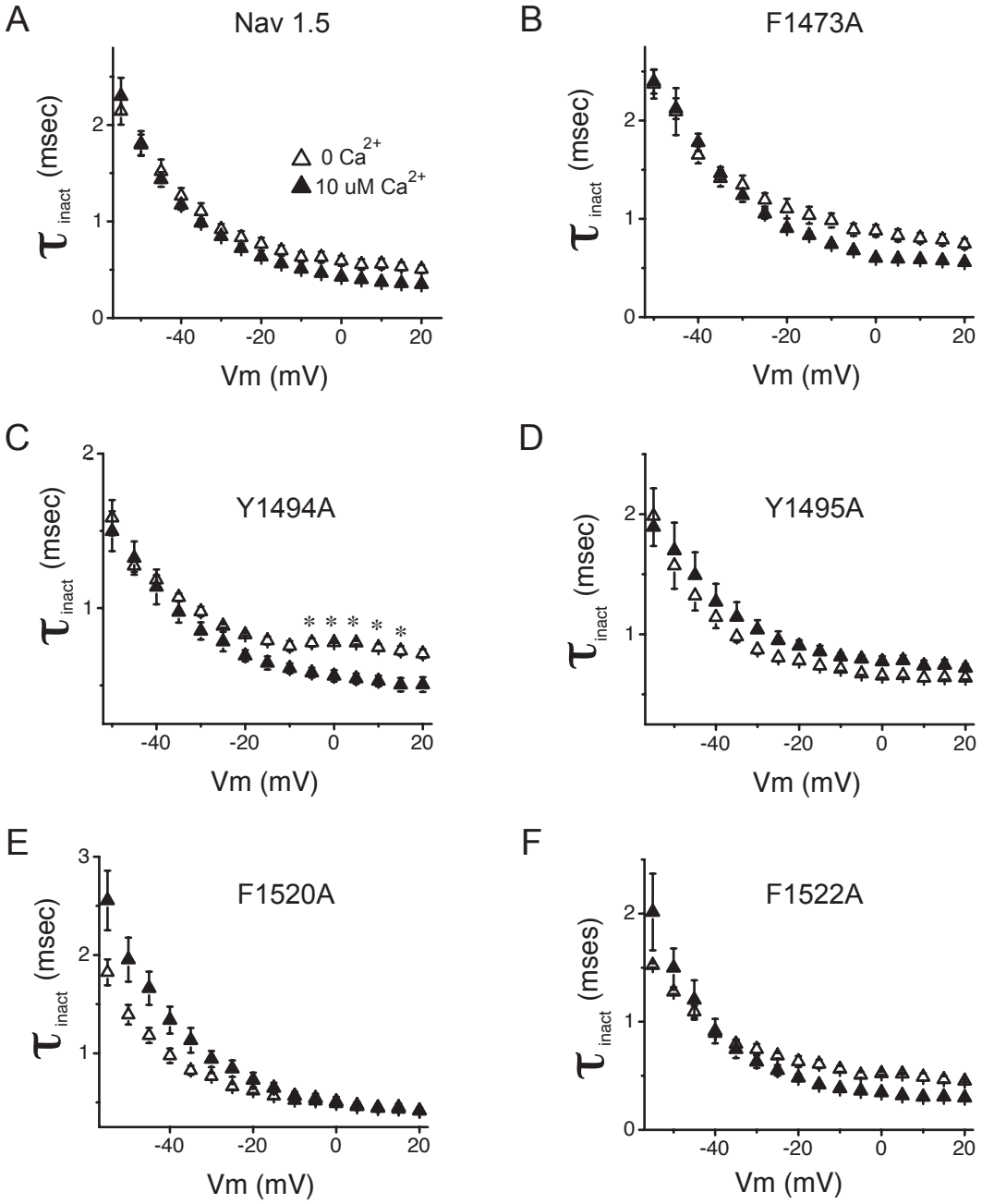
Supplementary Figures S1 and S2



Supplementary Figure S1. Effect of Intracellular Calcium on the Late Sodium Current. A, normalized and superimposed sodium current traces recorded in the presence of a '0' calcium pipette containing 20 mM BAPTA or 10 μM calcium in response to a 400 msec depolarizing pulse from -140 mV to -20 mV. B, enhanced scale of the traces in panel A shows that sodium currents fully inactivate with or without calcium, where the arrow indicates the 0 μM calcium trace. Data are representative of 4 cells under each condition with averages of 0.24% +/- 0.11 vs. 0.18% +/-0.9 for 10 μM free calcium or 20 mM BAPTA, respectively.



Supplementary Figure S2. Free Calcium Modestly Effects Cardiac Sodium Channel Inactivation Kinetics. A-F, Time course of fast inactivation from currents produced by a depolarization from -140 mV to the indicated voltage was fit with a single exponential. Although currents recorded from cells in the presence of 10 uM calcium showed mildly faster inactivation, these differences were insignificant (P>0.005) at all voltages, with the exception of the voltages indicated in panel C for the Y1494A mutant.