



Supplementary Figure 1. Step Repolarization Protocols for WT, S624A, and Y652A in the presence or absence of *R*-roscovitine.

A) Representative current traces elicited from the step repolarization voltage protocol shown to the left. WT, S624A, and Y652A tail currents were measured at their peak (\diamond) in the absence (top row) and presence of 200 μ M *R*-roscovitine (bottom row). **B)** Maximal tail current amplitudes from A were plotted against the repolarization voltage to show reversal potentials, which were then compared between control and *R*-roscovitine. The shifts for WT ($E_{rev} = -80.16 \pm 1.31$ to -76.7 ± 1.33 mV; $p = 0.0294$, paired *t*-test) and S624A ($E_{rev} = -82.25 \pm 1.27$ mV to -77.17 ± 2.00 mV; $p = 0.0301$, paired *t*-test) were significant, but not for Y652A ($E_{rev} = -81.08 \pm 1.28$ mV to -80.61 ± 2.12 mV; $p = 0.6238$, paired *t*-test). **C)** Percent inhibition of tail currents during the step repolarization protocol, which were calculated from the values in B (* = $P < 0.05$, ** = $P < 0.01$; one-way ANOVAs). $n_{WT} = 14$, and $n_{S624A, Y652A} = 9$.