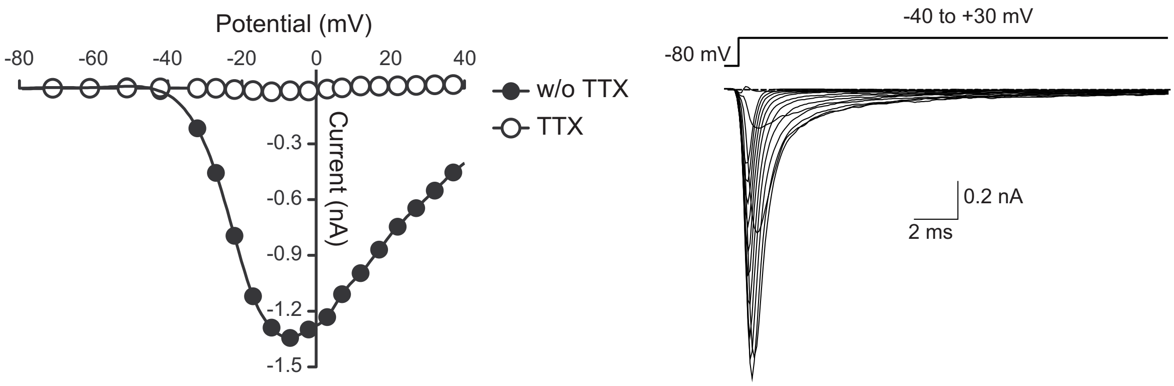
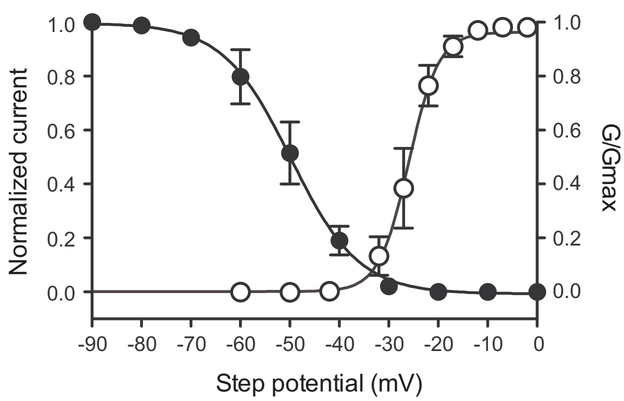
SI Fig 1

A



B



Voltage-dependent properties of I_{Na}

	$V_{1/2}$, mV	k, mV
Activation	-25.9 ± 0.6	3.0 ± 0.5
Inactivation	-49.8 ± 1.1	-6.9 ± 1.0

Supplementary Figure Legend

SI FIG. 1. Voltage-dependent Na^+ current (I_{Na}) in R-B neurons. *A: Left,* Na^+ current-voltage (*I-V*) relationships in presence (open circles) or absence (filled circles) of 300 nM tetrodotoxin (TTX). For recording of I_{Na}, the external solution contained (mM) 127 NaCl, 3 KCl, 20 TEA-Cl, 5 $MnCl_2$, and 5 HEPES (pH 7.4, 300 mOsm/kg H_2O). The pipette solution contained (mM) 120 *N*-methyl-D-glucamine, 20 TEA-OH, 11 EGTA, 1 $CaCl_2$, 10 HEPES, 10 glucose, 4 Na_2ATP, 0.3 Na_2GTP, and 5 Tris-creatine phosphate (pH 7.2, 290 mOsm/kg H_2O). I_{Na} were evoked by a series of voltages steps to potentials ranging between -70 and +40 mV from a holding potential of -80 mV. *Right,* Superimposed current traces recorded from R-B neurons in absence of TTX. For illustrative purposes current traces from -40 to +30 mV are shown. *B:* Voltage-dependent properties of I_{Na} recorded from R-B neurons. *Left,* The voltage-dependence of the Na^+ conductance (G_{Na}, open circles) and steady-state inactivation (filled circles) of I_{Na} from R-B neurons. Conductance (*G*) was calculated as $G_{Na}=I_{Na}/(V_m-V_{rev})$, in which I_{Na} is the peak current, V_m is the voltage, and V_{rev} is the reversal potential for I_{Na}. The mean reversal potential, 59.6 ± 3.2 mV (n = 3), was estimated from the linear portion of the *I-V* relationships. The solid line represents a nonlinear regression fit to the Boltzmann function: $1/(1+\exp[-(V-V_{1/2})/k])$, where V is the step membrane potential, $V_{1/2}$ is the half-activation potential, and k is a slope factor. Voltage-dependence of inactivation was determined using a 200 ms conditioning pulse followed by a test pulse to -10 mV. Test pulse currents are normalized to the maximal value. Solid line is a fit to the Boltzmann equation (see previous text; k is negative for inactivation curve). *Right,* Mean activation and steady-state inactivation parameters.