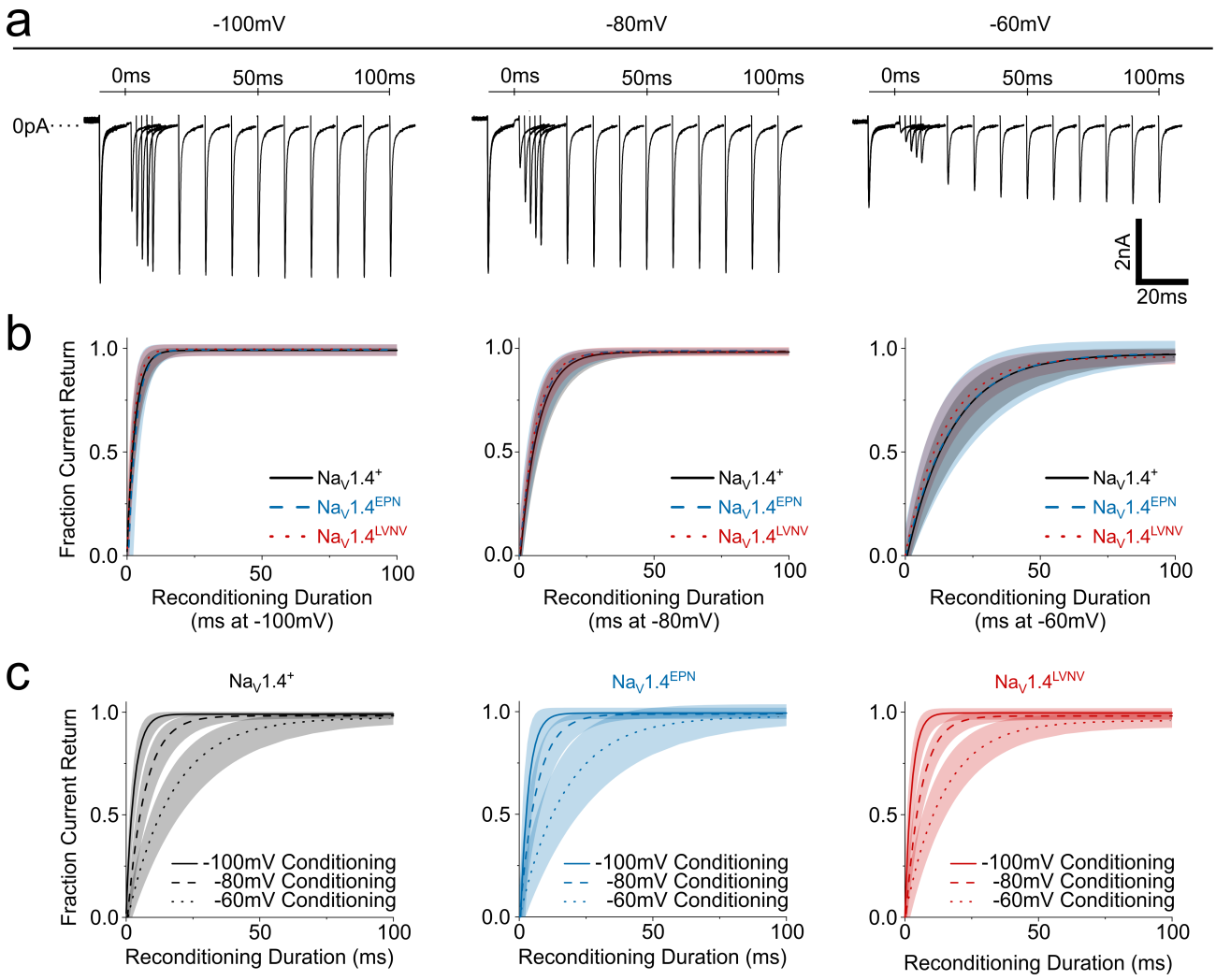
Supp.Fig. 2. TTX-resistant muscle-type sodium channels display identical recovery behaviors as TTX-sensitive counterpart



a, Representative traces of the recovery from fast inactivation (RFI) protocol demonstrating the time and voltage dependence of relief from h-gate blockade. A sufficiently long conditioning potential ($V_{cond} = V_h$ as written above the trace) precedes an initial test pulse (V_{test} at the top of the steady-state activation curve, -10 to +10mV). After the onset of fast inactivation by the end of the 10ms test pulse, the membrane is returned to V_{cond} for successively longer intervals of time to partially relieve inactivation by h-gate blockade. A subsequent test pulse activates the population of channels for which the magnitude and duration of hyperpolarization was sufficient to relieve inactivation. The ratio of peak current developed in the second V_{test} to that of the first V_{test} defines the available fraction. **b**, By fitting the available fraction as a function of reconditioning duration (ms) to a single exponential for a given V_{cond}, it appears that the muscle-type sodium channel variants tested here, **$Na_V1.4^+$** (black, N = 32), **$Na_V1.4^{EPN}$** (blue, N = 11), and **$Na_V1.4^{LVNV}$** (red, N = 16), essentially superimpose one another (mean ± sem). **c**, Separating the recovery curves by genotype, the voltage dependence of recovery from inactivation is readily apparent, demonstrating increasing rate of recovery with more negative V_{cond}.