

Supplementary materials:

Tables

Table 1. Membrane parameters of TTXrh, TTXrl, and TTXs of small DRG neurons at different temperatures

	Cell type	RMP (mV)	Rheobase (pA)	Threshold (mV)	AP width ($W_{1/2}$, ms)	AHP amplitude (mV)	AHP peak (mV)	Input R ($M\Omega$)
29 °C	TTXs, n=8	-49±2	15±3	-29.5±1.3	2.9±0.2	24.0±2.8	-53.5±2.4	728±137
	TTXrh, n=6	-54±2	88±12†	-10.4±3.2†	3.7±0.4†	40.9±2.2†	-49.9±2.6	465±50
24 °C	TTXs, n=12	-50±1	26±5*	-25.1±0.9*	3.4±0.2*	23±1.3	-47.9±1.1*	742±106
	TTXrh, n=9	-52±2	58±8*†	-4.7±2.0†	5.3±0.4*†	40.1±1.6†	-44.9±1.9	825±106*
	TTXrl, n=11	-50±4	41±9	-11.3±2.0†‡	5.3±0.6†	32.1±1.8†‡	-43.4±1.6	740±115
15 °C	TTXs, n=12	-50±1	13±2	-18.8±1.2*	15.8±1.7*	18.7±1.4	-38.3±1.0*	1725±254*
	TTXrh, n=9	-53±3	33±4*†	-3.7±1.8†	13.1±1.1*	35.1±1.4*†	-38.8±1.5*	1206±155*
	TTXrl, n=11	-51±4	31±7†	-4.2±1.3*†	14.3±2.0*	34.2±1.9†	-38.4±2.0*	1500±247*
10 °C	TTXs, n=8	-47±1	14±2	-17.2±1.7*	24.1±3.3*	18.1±1.2	-35.3±1.6*	1803±282*
	TTXrh, n=9	-52±3	32±4*†	-1.4±1.6*†	15.3±1.5*†	35.0±2.3†	-36.4±2.5*	2050±334*

TTX sensitivity was first assessed under voltage-clamp configuration by testing the effects of 500 nM TTX on voltage-activated Na^+ currents. Cells were then current-clamped and given a series of current steps for a period of 4 s (TTXrh, TTXrl) or 600 ms (TTXs). The tests were performed at 29 °C, 24 °C, 15 °C, and 10 °C. Data represent mean \pm SEM. * $P < 0.05$, same cell type, temperatures of 24 °C, 15 °C and 10 °C vs. 29 °C. † $P < 0.05$, same temperature, TTXrh vs. TTXs or TTXrl vs. TTXs. ‡ $P < 0.05$, same temperature, TTXrl vs. TTXrh. RMP, resting membrane potential; AP, action potential; AHP, afterhyperpolarization; Input R, input resistance.

Table 2. Effects of 4-AP on membrane parameters of TTXr and TTXs small DRG neurons

Cell type	Test type	RMP (mV)	Rheobase (pA)	Threshold (mV)	AP width ($W_{1/2}$ ms)	AHP amplitude (mV)	AHP peak mV	Input R ($M\Omega$)
TTXr n = 6	Control	-53.4±2.9	84.2±14.2	-12.2±2	5.9±0.6	39.0±2.2	-49.7± 1.2	645±130
	4-AP	-53.0±3.2	49.2±14.9*	-10.8±1.4	9.6±1.3*	32.9±1.8*	-45.3 ±1.5*	658±198
TTXs n = 6	Control	-48.8±1.2	28.6±5.1	-24.3±1.0	3.28±0.9	22.6±2.0	-46.8±1.6	794±165
	4-AP	-47.7±0.9	15.7±4.3*	-23.4±1.5	5.1±0.4*	19.3±2.4	-42.7±2.1*	989±239

Membrane parameters were recorded before (control) and after exposing cells to 4-AP (100 μ M, 2 minutes). Experiments were performed at 24 °C. Current pulses were delivered as described in Table 1. Data represent mean \pm SEM. *P < 0.05, 4-AP vs. control within same cell type.