Dataset 1

Figure panel	Assay	Statistical Test; findings	Post-hoc analysis (adjusted p- values)	Number of subjects	Number of subjects
panor					excluded (ROUT test)
Fig 1J	Whole cell patch clamp electrophysi	One Way ANOVA	Holm-Sidak multiple comparison post- hoc test:	Halo-Na∨1.7(WT) + TTX (n=16)	Halo- Na∨1.7(WT) + TTX
	ology – Peak sodium		Halo-Na _V 1.7(WT) + TTX vs. Halo- Na _V 1.7(WT) + TTX + ProTx-II p=0.0017	Halo-Na∨1.7(WT) + TTX + ProTx-II (n=11)	excluded n=1
	currents		Halo-Na∨1.7(WT) + TTX vs. Halo- Na∨1.7(1.3) + TTX p=0.0003	Halo-Na∨1.7(1.3) + TTX (n=15)	
			Halo-Na _V 1.7(WT) + TTX vs. Halo- Na _V 1.7(1.3) + TTX + ProTx-II p=0.0006	Halo-Na∨1.7(1.3) + TTX + ProTx-II (n=11)	
Fig 1K	Whole cell patch clamp electrophysi	Kruskal-Wallis test	Dunn's multiple comparison post-hoc test:	Halo-Na∨1.7(WT) + TTX (n=16)	Halo- Na∨1.7(WT) + TTX
ology - Peak 1 curren	ology – Peak TTX-R currents	Peak TTX-R currents	Halo-Nav1.7(WT) + TTX vs. Halo- Nav1.7(WT) + TTX + ProTx-II p >0.9999	Halo-Na∨1.7(WT) + TTX + ProTx-II (n=11)	excluded n=1
			Halo-Na _∨ 1.7(WT) + TTX vs. Halo- Na∨1.7(1.3) + TTX p>0.9999	Halo-Na _∨ 1.7(1.3) + TTX (n=15)	
			Halo-Na _∨ 1.7(WT) + TTX vs. Halo- Na∨1.7(1.3) + TTX + ProTx-II p>0.9999	Halo-Na∨1.7(1.3) + TTX + ProTx-II (n=11)	
Table	Biophysical	Mann-Whitney	Halo-Na _V 1.7(WT) vs Halo-Na _V 1.7(1.1)	Halo-Na∨1.7(WT)	
31	DRG neurons after transfection	lesi	V1/2, P<0.0001 K, P=0.6152 Inactivation V1/2 P=0.0711	(n=13) Halo-Na⊽1.7(1.1) (n=16)	
	with Halo-		K, P=0.9536	Halo-Na∨1.7(WT)	
	NaV1.7(1.x) constructs	NaV1.7(1.x) constructs	Halo-Nav1.7(WT) vs Halo-Nav1.7(1.2) Activation V1/2, P=0.9998	(n=12) Halo-Na⊽1.7(1.2) (n=13)	
			V1/2, P=0.00059 K, P=0.5473 K, P=0.4067	Halo-Na _∨ 1.7(WT) (n=15) Halo-Na _∨ 1.7(1.3)	
			Halo-Na∨1.7(WT) vs Halo-Na∨1.7(1.3) Activation	(11-10)	
			V1/2, P=0.1431 K, P=0.7963	Halo-Na∨1.7(WT) (n=18) Halo-Na∨1.7(1.4)	

	1	1		1	
			V1/2, P=0.3836 K, P=0.9571	(n=20)	
			Halo-Na∨1.7(WT) vs Halo-Na∨1.7(1.4) Activation V1/2, P=0.1132 K, P=0.1570 Inactivation V1/2, P=0.2673 K, P=0.6866 Halo-Na∨1.7(WT) vs Halo-Na∨1.7(1.5) Activation	Halo-Na∨1.7(WT) (n=15) Halo-Na∨1.7(1.5) (n=14) Halo-Na∨1.7(WT) (n=12) Halo-Na∨1.7(1.6) (n=15)	
			V1/2, P<0.0001 K, P=0.5213 Inactivation V1/2, P=0.7267 K, P=0.3475	Halo-Na∨1.7(WT) (n=15) Halo-Na∨1.7(1.8) (n=17)	
			Halo-Nav1.7(WT) vs Halo-Nav1.7(1.6) Activation V1/2, P=0.0962 K, P=0.3842 Inactivation V1/2, P=0.9133 K, P=0.6158	Halo-Na∨1.7(WT) (n=15) Halo-Na∨1.7(1.9) (n=15)	
			Halo-Na∨1.7(WT) vs Halo-Na∨1.7(1.8) Activation V1/2, P=0.2090 K, P=0.7712 Inactivation V1/2, P=0.9512 K, P=0.7167		
			Halo-Nav1.7(WT) vs Halo-Nav1.7(1.9) Activation V1/2, P=0.7178 K, P=0.5300 Inactivation V1/2, P=0.8809 K, P=0.5232		
Fig 2C	CRMP2 immunoprec ipitation followed by Nav1.7 western blot	Mann-Whitney test	DMSO vs. Myr-TAT-SCR p>0.9999 DMSO vs. Myr-TAT-Nav1.7-CRS p=0.0267	DMSO (n=5) Myr-TAT-SCR (n=5) Myr-TAT-Na _V 1.7- CRS (n=5)	
Fig 2F	Whole cell patch clamp electrophysi ology –	Welch's t-test	Myr-TAT-Na∨1.7-CRS vs. Myr-TAT-SCR p=0.0396	Myr-TAT-Na∨1.7- CRS (N=15)	

	peak current			Myr-TAT-SCR	
		Mana M/hitaay		(N=13)	
Fig 2G	vvnole cell	toot	Myr-TAT-Nav1.7-CR5 VS.		
	electrophysi	iesi	n=0.8460	(N=16)	
			β=0.8480	(11-10)	
	Peak TTX-R			Myr-TAT-SCR	
	current			(N=13)	
Fig 2J	Whole cell	One-way	Tukey's multiple comparison post-hoc	Myr-TAT-SCR +	
U U	patch clamp	ANOVA	test:	Water (N=14)	
	electrophysi				
	ology –		Myr-TAT-SCR + Water vs.	Myr-TAT-SCR + 5	
	peak current		Myr-TAT-SCR + 5 nM ProTx-II	nM ProTx-II	
	density		p=0.0130	(N=13)	
			$M_{V} TAT N_{O} (17 CPS + Water VS)$	MyI-IAI-MayI.I-	
			n=0.0470	(N=12)	
			p=0.0470	(11-12)	
			Mvr-TAT-SCR + Water vs.	Mvr-TAT-Na∨1.7-	
			Myr-TAT-Nav1.7-CRS + 5 nM ProTx-II	CRS + 5 nM	
			p=0.0012	ProTx-II (N=8)	
			Myr-TAT-Na _V 1.7-CRS + Water vs.		
			Myr-TAT-Nav1.7-CRS + 5 nM ProTx-II		
			p=0.8197		
Fig 2M	Whole cell	One-way	l ukey's multiple comparison post-hoc	Myr-IAI-SCR +	
	electrophysi	ANOVA	lesi.	CIII SIRINA (II-13)	
	ology –		Myr-TAT-SCR + Ctrl siRNA vs_Myr-	Myr-TAT-SCR +	
	peak current		TAT-SCR + CRMP2 siRNA	CRMP2 siRNA	
	density		p=0.0416	(n=12)	
	,		, , , , , , , , , , , , , , , , , , ,		
			Myr-TAT-SCR + Ctrl siRNA vs. Myr-	Myr-TAT-Na∨1.7-	
			TAT-Na∨1.7-CRS + Ctrl siRNA	CRS + Ctrl siRNA	
			p=0.0573	(n=12)	
			INIVITIAL SUR + UTI SIRNA VS. Myr-		
			TAT-Nav1.7-CRS + CRMP2 SIRNA n=0.0400		
			μ=0.0499	(n=13)	
			Mvr-TAT-Nav1 7-CRS + Ctrl siRNA vs		
			Mvr-TAT-Nav1.7-CRS + CRMP2		
			siRNA p>0.9999		
Fig 2O	Total protein	Kruskal-Wallis	DMSO vs. Myr-TAT-SCR	DMSO (n=4)	
-	western blot	test	p=0.4620		
				Myr-TAT-SCR	
			DMSO vs. Myr-TAT-Nav1.7-CRS	(n=4)	
			p>0.9999		
				V V V V V V V V V V	
Fig 20	Cell surface		Kruskal-Wallie teet	DMSO(n=5)	
	biotinvlation	ANOVA			
	Signation		DMSO vs. Mvr-TAT-SCR		
			J		· · · · · · · · · · · · · · · · · · ·

			p=0.8734	Myr-TAT-SCR
				(n=5)
			DMSO vs. Myr-TAT-Na∨1.7-CRS	/_
			p=0.0178	Myr-TAT-Na∨1.7- CRS (n=5)
Fig 2T	Whole cell	One-way	Kurskal-Wallis multiple comparison	Myr-TAT-ŚCR
	patch clamp	ANOVA	post-hoc test:	peptide + 0.1%
	electrophysi	p=0.0022		DMSO (n=15)
	ology –		Myr-TAT-SCR peptide + 0.1% DMSO	Mar TAT SCR
	density		vs. Mvr-TAT-SCR pentide + 20 µM	nentide + 20uM
	denoity		Pitstop2	Pitstop2 (n=7)
			p>0.9999	
				Myr-TAT-Na∨1.7-
			Myr-TAT-SCR peptide + 0.1% DMSO	CRS peptide +
			VS. Murr TAT No. 1 7 CDS pontido + 0.19/	0.1% DMSO
				(11-12)
			p=0.0033	Myr-TAT-Na∨1.7-
				CRS peptide +
			Myr-TAT-SCR peptide + 20uM	20uM Pitstop2
			Pitstop2	(n=14)
			Myr-TAT-Nav1.7-CRS peptide + 20 µM	
			Pitstop2	
			p>0.9999	
			Mur TAT No. 1.7 CDC postido 1.0.10(
			DMSO	
			VS.	
			Myr-TAT-Na _V 1.7-CRS peptide + 20 μM	
			Pitstop2	
Tabla	Pionhygiagl	Mann Whitney	p=0.0109	
S2	properties of	test	Activation	Activation
02	DRG	1001	Myr-TAT-SCR vs Myr-TAT-NaV1.7-	V1/2 (n=10)
	neurons		CRS p=0.0299	K (n=10)
	after			
	treatment		Myr-IAI-SCR vs Myr-IAI-NaV1.7-	Inactivation
	interfering		CRS p=0.6919	K (n=14)
	peptide		Slope values:	
			Activation	Myr-TAT-NaV1.7-
			Myr-TAT-SCR vs Myr-TAT-Nav1.7-	CRS
			CRS p=0.0057	Activation
			Inactivation Myr-TAT-SCR vs Myr-TAT-Nav1 7-	$V^{1/2}$ (n=9)
			CRS p=0.1398	
				Inactivation
				V1/2 (n=13)
				к (n=13)
	Biophysical	One-way	V1/2 Values:	Myr-TAT-SCR +
	properties of	ANOVA		Vehicle
	DRG		Myr-TAT-SCR + Vehicle vs Myr-TAT-	Activation
	neurons		30K +	V 1/2 (II-12)

after		5 nM ProTx-II p<0.0001	K (n=12)	
treatment		Myr-TAT-SCR + Vehicle vs Myr-TAT-	Inactivation	
with		NaV1 7-CRS + Vehicle $p=0.0119$	$V_{1/2}$ (n=11)	
interfering		M_{vr} -TAT-SCR + Vehicle vs M_{vr} -TAT-	K (n-11)	
nontido a	a d	NoV1 7 CPS + 5 pM ProTy II	$\mathcal{K}(\mathcal{H} = \mathcal{H})$	
peptide a		Nav 1.7-CR3 + 5 IIVI FIUTX-II		
Irealed w	luri			
Pro I x-II		Myr-IAI-SCR + 5 nm Proix-II vs Myr-	Myr-TAT-SCR +	
		IAT-NaV1.7-CRS + Vehicle p=0.0165	5 nM Pro I x-II	
		Myr-TAT-SCR + 5 nM ProTx-II vs Myr-	Activation	
		TAT-NaV1.7-CRS + 5 nM ProTx-II	V1/2 (n=11)	
		p=0.9383	K (n=11)	
			Inactivation	
		Myr-TAT-NaV1.7-CRS + Vehicle vs	V1/2 (n=11)	
		Myr-TAT-NaV1.7-CRS + 5 nM ProTx-II	K (n=11)	
		p=0.3200		
		p	Mvr-TAT-NaV1 7-	
		Inactivation	CRS + Vehicle	
		Myr_TAT_SCR + Vabiala ve Myr_TAT	Activation	
			1/1/2 (n-11)	
			V = 1/2 (1-1)	
			$\frac{1}{100} \frac{1}{100} \frac{1}$	
		Nav1.7-CKS + Vehicle p=0.10/7	v 1/2 (n=10)	
		Myr-IAI-SCR + Vehicle vs Myr-IAI-	K (n=10)	
		NaV1.7-CRS + 5 nM ProTx-II		
		p=0.0120	Myr-TAT-NaV1.7-	
		Myr-TAT-SCR + 5 nM ProTx-II vs Myr-	CRS +	
		TAT-NaV1.7-CRS + Vehicle p=0.1501	5 nM ProTx-II	
		Myr-TAT-SCR + 5 nM ProTx-II vs Myr-	Activation	
		TAT-NaV1.7-CRS + 5 nM ProTx-II	V1/2 (n=7)	
		p=0.0174	K (n=7)	
		Myr-TAT-NaV1.7-CRS + Vehicle vs	Inactivation	
		Mvr-TAT-NaV1.7-CRS + 5 nM ProTx-II	V1/2 (n=6)	
		p=0.6028	K (n=6)	
		p 0.0020		
		Slope Values :		
		Activation		
		Myr-TAT-SCR + Vehicle vs Myr-TAT-		
		Nav1.7-CRS + 5 nM Pro1x-II		
		p=0.5347		
		Myr-IAI-SCR + 5 nM ProTx-II vs Myr-		
		IAI-NaV1.7-CRS + Vehicle p=0.1318		
		Myr-TAT-SCR + 5 nM ProTx-II vs Myr-		
		TAT-NaV1.7-CRS + 5 nM ProTx-II		
		p=0.9913		
		Myr-TAT-NaV1.7-CRS + Vehicle vs		
		Myr-TAT-NaV1.7-CRS + 5 nM ProTx-II		
		p=0.3469		
		Inactivation		
		Myr-TAT-SCR + Vehicle vs Myr-TAT-		
		SCR +		
·				

	5 pM DroTy II p=0 5017		
	Myr-TAT-SCR + Vehicle vs Myr-TAT-		
	NaV1.7-CRS + Vehicle p=0.9991		
	Myr-TAT-SCR + Vehicle vs Myr-TAT-		
	NaV1.7-CRS + 5 nM ProTx-II		
	p=0.9965		
	Myr-TAT-SCR + 5 nM ProTx-II vs Myr-		
	TAT No $1/1.7$ CPS + $1/0$ high p=0.6064		
	Myr-TAT-SCR + 5 nm ProTx-II vs Myr-		
	IAI-NaV1.7-CRS + 5 nM ProTx-II		
	p=0.7658		
	Myr-TAT-NaV1.7-CRS + Vehicle vs		
	Myr-TAT-NaV1.7-CRS + 5 nM ProTx-II		
	p=0.9997		
 Biophysical	V/1/2	Mur-TAT-SCR +	
biophysical proportion of	V 1/Z	aiDNA Control	
properties of			
DRG	Myr-TAT-SCR + siRNA-Control vs	Activation	
neurons	Myr-TAT-SCR + siRNA-CRMP2	V1/2 (n=8)	
after	p=0.5071	K (n=8)	
treatment	Myr-TAT-SCR + siRNA-Control vs	Inactivation	
with	Myr-TAT-NaV1.7-CRS + siRNA-	V1/2 (n=10)	
interferina	Control p=0.0489	K(n=10)	
nentide and	Myr-TAT-SCR + siRNA-Control vs		
treated with	$M_{\rm V}r_{\rm T}\Lambda T_{\rm N}a/(1.7 - CPS + siPNA)$		
	CDMD2 = 0.0075		
SIRINA	Myr-TAT-SCR + SIRNA-CRMP2 VS		
	Myr-TAT-NaV1.7-CRS + siRNA-	Activation	
	Control p=0.5149	V1/2 (n=10)	
	Myr-TAT-SCR + siRNA-CRMP2 vs	K (n=10)	
	Myr-TAT-NaV1.7-CRS + siRNA-	Inactivation	
	CRMP2 p=0.5793	V1/2 (n=7)	
	Mvr-TAT-NaV1 7-CRS + siRNA-	K (n=7)	
	Control vs Myr-TAT-NaV1 7-CRS +		
		Mur TAT No $1/1.7$	
	SIRINA-ORIVIP2 $p=0.0555$		
		CRS + SIRINA-	
	Inactivation	Control	
	Myr-TAT-SCR + siRNA-Control vs	Activation	
	Myr-TAT-SCR + siRNA-CRMP2	V1/2 (n=10)	
	p=0.1480	K (n=10)	
	Myr-TAT-SCR + siRNA-Control vs	Inactivation	
	Myr-TAT-NaV1.7-CRS + siRNA-	V1/2 (n=10)	
	Control p=0.3691	K (n=10)	
	Myr-TAT-SCR + siRNA-Control vs		
	$M_{vr}T\Delta T_N_{2}/17_{OP} = ciPNA$	$M_{\rm VI}$ TAT $N_{\rm O}$ /1.7	
	$\frac{1}{2} = \frac{1}{2} = \frac{1}$		
	IVIYI-IAI-SUK + SIKINA-UKIMPZ VS	SIRINA-CRIVIP2	
	Myr-IAI-NaV1./-CRS + siRNA-	Activation	
	Control p=0.8987	V1/2 (n=10)	
	Myr-TAT-SCR + siRNA-CRMP2 vs	K (n=10)	
	Myr-TAT-NaV1.7-CRS + siRNA-	Inactivation	
	CRMP2 p=0.8708	V1/2 (n=11)	
	Mvr-TAT-NaV1.7-CRS + siRNA-	K (n=11)	
	Control vs Myr-TAT-Na\/17-CRS +		
	siRNA-CRMP2 n>0 9999		
	Clana Values		
	Slope values		

		Activation Myr-TAT-SCR + siRNA-Control vs Myr-TAT-SCR + siRNA-CRMP2 p=0.9986 Myr-TAT-SCR + siRNA-Control vs Myr-TAT-NaV1.7-CRS + siRNA- Control p=0.8907 Myr-TAT-SCR + siRNA-Control vs Myr-TAT-SCR + siRNA-CRMP2 vs Myr-TAT-NaV1.7-CRS + siRNA- CRMP2 p>0.9999 Myr-TAT-NaV1.7-CRS + siRNA- CRMP2 p>0.9999 Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV1.7-CRS + siRNA-CRMP2 p=0.9438 Inactivation Myr-TAT-SCR + siRNA-Control vs Myr-TAT-SCR + siRNA-CONTP2 vs Myr-TAT-SCR + siRNA-CRMP2 vs Myr-TAT-NaV1.7-CRS + siRNA- CRMP2 p=0.9949 Myr-TAT-SCR + siRNA-CRMP2 vs Myr-TAT-NaV1.7-CRS + siRNA- Control p=0.9997 Myr-TAT-NaV1.7-CRS + siRNA- CRMP2 p=0.7964 Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV1.7-CRS + siRNA- CRMP2 p=0.7964 Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV1.7-CRS + siRNA- Control vs Myr-TAT-NaV		
Biophysical properties of DRG neurons after treatment with interfering peptide and treated with Pitstop2	One-way ANOVA	V1/2 Activation Myr-TAT-SCR + DMSO vs Myr-TAT- SCR + 20 μ M Pitstop2 p=0.0328 Myr-TAT-SCR + DMSO vs Myr-TAT- NaV1.7-CRS + DMSO p=0.8854 Myr-TAT-SCR + DMSO vs Myr-TAT- NaV1.7-CRS + 20 μ M Pitstop2 p>0.9999 Myr-TAT-SCR + 20 μ M Pitstop2 vs Myr-TAT-NaV1.7-CRS + DMSO p=0.1618 Myr-TAT-SCR + 20 μ M Pitstop2 vs Myr-TAT-NaV1.7-CRS + 20 μ M Pitstop2 p=0.0378	Myr-TAT-SCR + DMSO Activation V1/2 (n=14) K (n=14) Inactivation V1/2 (n=9) K (n=9) Myr-TAT-SCR + 20 μ M Pitstop2 Activation V1/2 (n=7) K (n=7) Inactivation	

		1/1/2 (m-7)	
	Wyr-TAT-Nav 1.7-CR5 + DWSO VS	V 1/2 (n=7)	
	Myr-TAT-NaV1.7-CRS + 20 µM	K (n=7)	
	Pitstop2 p=0.9006		
		Myr-TAT-NaV1.7-	
	Inactivation	CRS + DMSO	
	Myr-TAT-SCR + DMSO vs Myr-TAT-	Activation	
		$\lambda(1/2) (p=11)$	
		V 1/2 (11-11)	
	20 µM Pitstop2 p=0.0008	K (n=11)	
	Myr-TAT-SCR + DMSO vs Myr-TAT-	Inactivation	
	NaV1.7-CRS + DMSO p=0.0006	V1/2 (n=8)	
	Myr-TAT-SCR + DMSO vs Myr-TAT-	K (n=8)	
	NaV1 7-CRS + 20 µM Pitstop2	()	
	n=0.0004	M_{Vr} -TAT-Na $V/1.7$ -	
	INIVI-TAT-SCR + 20 µIVI PIISIOP2 VS		
	Myr-TAT-NaV1.7-CRS + DMSO	20 µM Pitstop2	
	p>0.9999	Activation	
	Myr-TAT-SCR + 20 µM Pitstop2 vs	V1/2 (n=13)	
	Myr-TAT-NaV1.7-CRS + 20 µM	K (n=13)	
	Pitstop2 p=0 9982	Inactivation	
	$M_{\rm Vr}$ -TAT-NaV1 7-CRS + DMSO vo	1/1/2 (n=10)	
		V / 2 (1 - 10)	
	$\frac{1}{1000}$	r (II-IU)	
	Pitstop2 p=0.9992		
	Slope Values		
	Activation		
	Mvr-TAT-SCR + DMSO vs Mvr-TAT-		
	SCR +		
	20 uM Piteton2 n=0 5518		
	$20 \mu W F ISIOP2 P = 0.00 TO$		
	Nav1.7-CRS + DMSO p=0.0561		
	Myr-TAT-SCR + DMSO vs Myr-TAT-		
	NaV1.7-CRS + 20 µM Pitstop2		
	p=0.1489		
	Myr-TAT-SCR + 20 µM Pitstop2 vs		
	Myr-TAT-NaV1 7-CRS + DMSO		
	n=0.79/3		
	$\mu = 0.70 \pm 00$ Myr_TAT_SCP $\pm 20 \mu M$ Ditaton2 vo		
	Pitstop2 p=0.9646		
	Myr-TAT-NaV1.7-CRS + DMSO vs		
	Myr-TAT-NaV1.7-CRS + 20 μM		
	Pitstop2 p=0.9475		
	Inactivation		
	Myr-TAT-SCR + DMSO vs Myr-TAT-		
	Myr-TAT-SCR + DMSO vs Myr-TAT-		
	NaV1.7-CRS + DMSO p=0.7778		
	Myr-TAT-SCR + DMSO vs Myr-TAT-		
	NaV1.7-CRS + 20 µM Pitstop2		
	p=0.3964		
	P = 0.0004 Myr-TAT-SCR + 20 µM Piteton2 ve		
	$M_{Vr} T \Lambda T_N A V = 20 \mu W = 100 \mu Z VS$		
	p=0.2181		

			Myr-TAT-SCR + 20 μM Pitstop2 vs Myr-TAT-NaV1.7-CRS + 20 μM Pitstop2 p=0.4333 Myr-TAT-NaV1.7-CRS + DMSO vs Myr-TAT-NaV1.7-CRS + 20 μM Pitstop2 p=0.9398		
Fig 3B	Whole cell patch clamp electrophysi ology – evoked action potentials	Multiple Mann- Whitney tests	Myr-TAT-SCR vs. Myr-TAT-Nav1.7- CRS 0 pA, p>0.9999 10 pA, p=0.1593 20 pA, p=0.1023 30 pA, p=0.0167 40 pA, p=0.0353 50 pA, p=0.0167 60 pA, p=0.0538 70 pA, p=0.0276 80 pA, p=0.0112 90 pA, p=0.0364 100 pA, p=0.0097 120 pA, p=0.0153	Myr-TAT-SCR (n=26) Myr-TAT-Na _V 1.7- CRS (n=26)	
Fig 3C	Whole cell patch clamp electrophysi ology – resting membrane potential	Mann-Whitney tests	Myr-TAT-SCR vs. Myr-TAT-Nav1.7- CRS p=0.7462	Myr-TAT-SCR (n=26) Myr-TAT-Na∨1.7- CRS (n=26)	
Fig 3E	Whole cell patch clamp electrophysi ology – rheobase	Mann-Whitney tests	Myr-TAT-SCR vs. Myr-TAT-Nav1.7- CRS p=0.0035	Myr-TAT-SCR (n=26) Myr-TAT-Na∨1.7- CRS (n=26)	
Fig 3F	Whole cell patch clamp electrophysi ology – Input resistance	Mann-Whitney tests	Myr-TAT-SCR vs. Myr-TAT-Nav1.7- CRS p=0.7336	Myr-TAT-SCR (n=26) Myr-TAT-Na∨1.7- CRS (n=26)	
Fig 3H	Spinal cord CGRP release assay	Two-Way ANOVA	Sidak's multiple comparisons test Fraction 1 Control vs. Myr-TAT-SCR p=0.8968 Control vs. Myr-TAT-Nav1.7-CRS p=0.1324 Myr-TAT-SCR vs Myr-TAT-Nav1.7- CRS p=0.4010 Fraction 2 Control vs. Myr-TAT-SCR p=0.2430	DMSO (n=4) Myr-TAT-SCR (n=4) Myr-TAT-Na∨1.7- CRS (n=4)	

			Control vs. Myr-TAT-Na _V 1.7-CRS p=0.1495 Myr-TAT-SCR vs. Myr-TAT-Na _V 1.7- CRS p=0.8924		
			Fraction 3 Control vs. Myr-TAT-SCR p=0.9219 Control vs. Myr-TAT-Nav1.7-CRS p=0.0026 Myr-TAT-SCR vs. Myr-TAT-Nav1.7- CRS p=0.0012		
			Fraction 4 Control vs. Myr-TAT-SCR p=0.2418 Control vs. Myr-TAT-Na _V 1.7-CRS p<0.0001 Myr-TAT-SCR vs. Myr-TAT-Na _V 1.7- CRS p<0.0001		
			Fraction 5 Control vs. Myr-TAT-SCR p=0.5405 Control vs. Myr-TAT-Na _V 1.7-CRS p=0.0191 Myr-TAT-SCR vs. Myr-TAT-Na _V 1.7- CRS p=0.4724		
			Fraction 6 Control vs. Myr-TAT-SCR p=0.9613 Control vs. Myr-TAT-Na∨1.7-CRS p=0.7229 Myr-TAT-SCR vs. Myr-TAT-Na∨1.7- CRS p=0.9202		
Fig 4A	CRMP2 binding to peptide 141	Mann-Whitney test	WT vs. CRMP2 ^{K374A/K374A} p<0.0001	WT (n=4) CRMP2 ^{K374A/K374A} (n=4)	
Fig 4B	SNI female rats – paw withdrawal threshold	Multiple Mann- Whitney tests	Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (Pre-SNI, p>0.9999) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=0, p=0.9675) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=0.5, p>0.9999) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=1, p=0.8918) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=2, p=0.0173) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=3, p=0.0022) Myr-TAT-SCR female vs. Myr-TAT- Na \lor 1.7-CRS female (t=4, p=0.0152)	Myr-TAT-SCR female (n=6) Myr-TAT-Na _v 1.7- CRS female (n=6)	

			Myr-TAT-SCR female vs. Myr-TAT-		
			Nav1.7-CRS female (t=5, p=0.0649)		
	SNI male		Myr-IAI-SCR male vs. Myr-IAI-	Myr-TAT-SCR	
	rais – paw		M_{Vr} TAT SCB male (Pre-SNI, p>0.9999)	Mur TAT No. 1 7	
	throshold		No. 1 7 CPS male (t=0, n=0.3005)	(n=6)	
	unesnou		M_{Vr} -TAT-SCR male vs M_{Vr} -TAT-		
			$N_{a_{1}}$ Nav1 7-CRS male (t=0.5 p=0.4643)		
			Myr-TAT-SCR male vs Myr-TAT-		
			Na $v1.7$ -CRS male (t=1, p=0.0833)		
			Myr-TAT-SCR male vs. Myr-TAT-		
			Nav1.7-CRS male (t=2, p=0.0119)		
			Myr-TAT-SCR male vs. Myr-TAT-		
			Na _v 1.7-CRS male (t=3, p=0.0119)		
			Myr-TAT-SCR male vs. Myr-TAT-		
			Na∨1.7-CRS male (t=4, p=0.0119)		
			Myr-TAT-SCR male vs. Myr-TAT-		
			Nav1.7-CRS male (t=5, p=0.0119)		
Fig 4C	Paw	Mann-Whitney	Myr-IAI-SCR female vs. Myr-IAI-	Myr-TAT-SCR	
	Withdrawai	test		temale (n=6)	
			μ=0.0087	Mur TAT No. 1 7	
	under the		Myr-TAT-SCR male vs Myr-TAT-	CRS female (n=6)	
	curve		Nav1 7-CRS male		
			p=0.0152	Mvr-TAT-SCR	
			p 0.0.0_	male (n=6)	
				Myr-TAT-Na∨1.7-	
				CRS male (n=6)	
Fig 4D	Mouse	Kruskal-Wallis	Myr-TAT-SCR vs. Myr-TAT-Nav1.7-	Female Myr-TAT-	
	thermal	test	CRS (females) p=0.1177	SCR (n=10)	
	nociception				
	– not plate		Myr-TAT-SCR VS. Myr-TAT-NavT.7-		
			CRS (males) $p=0.0040$	(n-10)	
				(11-10)	
				Male Myr-TAT-	
				SCR (n=10)	
				Male Myr-TAT-	
				Nav1.7-CRS	
				(n=10)	
Fig 4E	Mouse	Kruskal-Wallis	Myr-TAT-SCR vs. Myr-TAT-Nav1.7-	Female Myr-TAT-	
	thermal	test	CRS (females) p>0.9999	SCR (n=10)	
	nociception				
	- tall flick		Myr-TAT-SCR Vs. Myr-TAT-Nav1.7-	Female Myr-TAT-	
			ראס (males) p>0.9999	(n-10)	
				(1-10)	
				Male Myr-TAT-	
				SCR (n=10)	
				- (/	
				Male Myr-TAT-	
				Nav1.7-CRS	
				(n=10)	

Fig 4F	Motor	Multiple Mann-	Males	Myr-TAT-SCR	
	coordination	Whitney tests	Myr-TAT-SCR vs. Myr-TAT-Na∨1.7-	(n=7)	
	in rats -		CRS (baseline) p=0.4009		
	rotarod		Myr-TAT-SCR vs. Myr-TAT-Nav1.7-	Myr-TAT-Na∨1.7-	
			CRS (60 min post injection) p=0.8298	CRS (n=7)	
			Myr-TAT-SUR VS. Myr-TAT-Na \vee 1.7- CPS (120 min post injection) n=0.2176		
			Myr-TAT-SCR vs Myr-TAT-Na $\sqrt{17}$		
			CRS (180 min post injection) $p=0.7103$		
			Myr-TAT-SCR vs. Myr-TAT-Nav1.7-		
			CRS (240 min post injection) p=0.9015		
			Myr-TAT-SCR vs. Myr-TAT-Nav1.7-		
5: 50			CRS (300 min post injection) p=0.6859		
Fig 5C	Whole cell	Welch's t-test	Myr-IAI-SCR vs. Myr-IAI-Na $_{V1.7}$	Myr-TAT-SCR	
	electrophysi		CRS p=0.0002	(1-12)	
	ology –			Myr-TAT-Nay1 7-	
	peak current			CRS (n=12)	
	density			· · · · · ·	
Fig 5D	Whole cell	Mann-Whitney	Myr-TAT-SCR vs. Myr-TAT-Na∨1.7-	Myr-TAT-SCR	
	patch clamp	test	CRS	(n=12)	
	electrophysi		p=0.6194		
	TTX-R			ORS(n=12)	
	current				
	density				
Fig 5G	Whole cell	One-way	pAAV-SCR +Vehicle vs.	pAAV-SCR	
	patch clamp	ANOVA	pAAV-SCR + ProTx	+Vehicle (n=15)	
	electrophysi		p=0.0024		
	ology –		nAAV/SCD JV/shiele v/s nAAV/Nev17	pAAV-SCR +	
	density		CRS + vehicle	PIOLOX (II-IZ)	
	density		p=0.0213	pAAV-Nav1.7-	
			p 0.02.0	CRS + Vehicle	
			pAAV-SCR +Vehicle vs. pAAV-Nav1.7-	(n=13)	
			CRS + ProTx		
			p=0.0003	pAAV-Na _V 1.7-	
				CRS + Protox	
			$\mu AAV - NaV 1.7 - CRS + VENICIE VS.$	(11=15)	
			n>0.9999		
Fig 5J	Whole cell	One-way	pAAV-SCR +Vehicle vs. pAAV-SCR +	pAAV-SCR	
	patch clamp	ANOVA	Pitstop2	+Vehicle (n=12)	
	electrophysi		p>0.9999		
	ology –			pAAV-SCR +	
	peak current		PAAV-SUK +VENICIE VS. PAAV-Nav1./-	Pitstop2 (n=15)	
	density			nAAV-Nav1 7-	
				CRS + Vehicle	
			pAAV-SCR +Vehicle vs. pAAV-Nav1.7-	(n=15)	
			CRS + Pitstop2		
			p>0.9999	pAAV-Na∨1.7-	
				CRS + Pitstop2	
			μ AAV-INAVI.7-CKS + VENICIE V.S μ AAV-Nav1.7-CRS + Ditaton2	(11=9)	
			$p_{n=0} 0115$		
			μ μ υ.υτιύ		

Fig 5L	Slice patch clamp electrophysi ology – Frequency	Mann-Whitney test	pAAV-SCR vs. pAAV-Na _v 1.7-CRS p=0.0305	pAAV-SCR (n=12) pAAV-Na∨1.7- CRS (n=11)	
Fig 5L	Slice patch clamp electrophysi ology – Amplitud of sEPSC	Mann-Whitney test	pAAV-SCR vs. pAAV-Nav1.7-CRS p=0.0357	pAAV-SCR (n=11) pAAV-Na∨1.7- CRS (n=10)	
Table S3	Biophysical properties of DRG neurons after treatment with AAV	Mann-Whitney test	AAV-SCR vs AAV-Nav1.7-CRS V1/2 Activation P=0.6571 Inactivation P=0.8627 AAV-SCR vs AAV-Nav1.7-CRS Slope Activation P=0.5775 Inactivation P=0.4563	$\begin{array}{c} AAV\text{-SCR} \\ \text{Activation} \\ V1/2 (n=12) \\ \text{K (n=12)} \\ \text{Inactivation} \\ V1/2 (n=12) \\ \text{K (n=12)} \\ \hline \\ AAV\text{-Nav1.7-CRS} \\ \text{Activation} \\ V1/2 (n=12) \\ \text{K (n=12)} \\ \text{Inactivation} \\ V1/2 (n=12) \\ \text{K (n=12)} \\ \text{K (n=12)} \\ \hline \\ \text{K (n=12)} \\ \hline \end{array}$	
	Biophysical properties of DRG neurons after treatment with AAV and ProTx-II	One-Way ANOVA	V1/2 Activation $AAV-SCR +$ Vehicle vs. AAV-SCR + 5 nM ProTx-II $P<0.0001$ $AAV-SCR +$ Vehicle vs. AAV-Nav1.7-CRS + Vehicle vs. AAV-Nav1.7-CRS + Vehicle vs. AAV-Nav1.7-CRS + 5 nM ProTx-II $P=0.9865$ $AAV-SCR +$ 5 nM ProTx-II vs. AAV-Nav1.7-CRS + Vehicle $P<0.0001$ $AAV-SCR +$ 5 nM ProTx-II vs. AAV-Nav1.7-CRS + 5 nM ProTx-II vs. AAV-Nav1.7-CRS + 5 nM ProTx-II vs. AAV-Nav1.7-CRS + 5 nM ProTx-II p<0.0001 $AAV-SCR +$ 5 nM ProTx-II p<0.0001 $AAV-Nav1.7-CRS + Vehicle vs. AAV-Nav1.7-CRS + 5 nM ProTx-II p<0.0001 AAV-Nav1.7-CRS + Vehicle vs. AAV-Nav1.7-CRS + 5 nM ProTx-II p<0.2012 Inactivation AAV-SCR +$	AAV-SCR + Vehicle Activation V1/2 (n=15) K (n=15) Inactivation V1/2 (n=15) K (n=15) AAV-SCR + 5 nM ProTx-II Activation V1/2 (n=12) K (n=12) Inactivation V1/2 (n=12) K (n=12) AAV-NaV1.7-CRS + Vehicle Activation V1/2 (n=13) K (n=13) Inactivation V1/2 (n=13) K (n=13)	

Vabiala va AAV COD L 5 aM DraTe II	
P=0.0493	AAV-NAVI./-CKS
	+
	5 nM ProTx-II
AAV-SCR +	Activation
Vehicle vs. AAV-Nav1.7-CRS +	V1/2 (n=15)
Vehicle	K (n=15)
P=0 1129	Inactivation
	$V_{1/2}$ (n=15)
	K (n=15)
5 NM Pro1X-II	
P=0.9991	
AAV-SCR +	
5 nM ProTx-II vs. AAV-Nav1.7-CRS +	
Vehicle	
P<0.0001	
AAV-SCR +	
$5 \text{ nM ProTx-II ve } \Delta\Delta V = 17 - CRS +$	
$\begin{bmatrix} 0 & 1101 & 101 & 101 & 101 & 101 & 0 \\ & 5 & 6 & M & DraTy & H \end{bmatrix}$	
AAV-Nav1./-CRS + Vehicle vs. AAV-	
Nav1.7-CRS +	
5 nM ProTx-II	
P=0.1468	
Slope Values	
Activation	
AAV-SCR +	
Vehicle vs AAV-SCR + 5 nM ProTx-II	
F-0.0043	
AAV-SCR +	
Vehicle vs. AAV-Nav1.7-CRS +	
Vehicle	
P=0.9836	
AAV-SCR +	
Vehicle vs. AAV-Nav1.7-CRS +	
5 nM ProTx-II	
P=0 2070	
5 nm ProTX-II vs. AAV-Nav1.7-CRS +	
Vehicle	
P=0.4754	
AAV-SCR +	
5 nM ProTx-II vs. AAV-Nav1.7-CRS +	
5 nM ProTx-II	
P=0.8856	
AAV-Nav1 7-CRS + Vehicle vs AAV-	
Nav1 7-CRS +	
P=0.11/6	

		Inactivation AAV-SCR + Vehicle vs. AAV-SCR + 5 nM ProTx-II P=0.9961		
		AAV-SCR + Vehicle vs. AAV-Nav1.7-CRS + Vehicle P=0.7893		
		AAV-SCR + Vehicle vs. AAV-Nav1.7-CRS + 5 nM ProTx-II P=0.9997 AAV-SCR + 5 nM ProTx-II vs. AAV-Nav1.7-CRS + Vehicle P=0.6553		
		AAV-SCR + 5 nM ProTx-II vs. AAV-Nav1.7-CRS + 5 nM ProTx-II P=0.9971 AAV-Nav1.7-CRS + Vehicle vs. AAV- Nav1.7-CRS + 5 nM ProTx-II P=0.7396		
Biophysical properties of DRG neurons after treatment with AAV and Pitstop 2	One-Way ANOVA	V1/2 Activation AAV-SCR + DMSO vs. AAV-SCR + 20 µM Pitstop2 P=0.9961 AAV-SCR + DMSO vs. AAV-Na _V 1.7- CRS + DMSO p>0.9999	AAV-SCR + DMSO Activation V1/2 (n=12) K (n=12) Inactivation V1/2 (n=12) K (n=12)	
		AAV-SCR + DMSO vs. AAV-Nav1.7- CRS + 20 μM Pitstop2 P=0.9973 AAV-SCR + 20 μM Pitstop2 vs. AAV-Nav1.7-CRS + DMSO P=0.9995	AAV-SCR + 20 μ M Pitstop2 Activation V1/2 (n=15) K (n=15) Inactivation V1/2 (n=15) K (n=15)	
		AAV-SCR + 20 µM Pitstop2 vs. AAV-Na∨1.7-CRS + 20 µM Pitstop2 P=0.9913 AAV-Na∨1.7-CRS + DMSO vs. AAV- Na∨1.7-CRS +	AAV-NaV1.7-CRS + DMSO Activation V1/2 (n=15) K (n=15)	

20 uM Diteton2	Inactivation
P=0.9974	V 1/2 (n= 15)
	K (n=15)
Inactivation	
AAV-SCR + DMSO vs. AAV-SCR +	
20 µM Pitstop2	AAV-NaV1.7-CRS
P=0.8802	+
1 0.0002	20 uM Diteton2
AAV-SCR + DIVISO VS. AAV-INAVI./-	
CRS + DMSO	Activation
P=0.0517	V1/2 (n=9)
	K (n=9)
AAV-SCR + DMSO vs. AAV-Nav1.7-	Inactivation
CRS +	V1/2 (n=9)
20 uM Pitston2	K(n=9)
	IX (II=5)
AAV-SUK +	
20 µM Pitstop2 vs. AAV-Nav1.7-CRS +	
DMSO	
P=0.0042	
AAV-SCR +	
20 uM Pitston2 vs AAV-Nav1 7-CRS +	
20 µM Ditaton2	
P=0.9378	
AAV-Nav1.7-CRS + DMSO vs. AAV-	
Nav1.7-CRS +	
20 µM Pitstop2	
P=0.0675	
Slope Values	
Activation	
$\Delta \Lambda V_{SCP} + DMSO v_{S} \Delta \Lambda V_{SCP} +$	
20 uM Ditatan2	
P=0.9522	
AAV-SCR + DMSO vs. AAV-Nav1.7-	
CRS + DMSO	
P=0.9973	
AAV-SCR + DMSO vs. AAV-Nav1 7-	
CRS +	
20 uM Piteton2	
AAV-SUK +	
20 µM Pitstop2 vs. AAV-Na _V 1.7-CRS +	
DMSO	
P=0.8693	
AAV-SCR +	
20 µM Pitstop2 vs. AAV-Nav1.7-CRS +	
20 uM Piteton2	
D-0 0265	
AAV-INAVI. $7 - CKS + DIVISO VS. AAV-$	
Nav1./-CRS +	
20 µM Pitstop2	

			P=0.6006		
			Inactivation AAV-SCR + DMSO vs. AAV-SCR + 20 μΜ Pitstop2 P=0.9716		
			AAV-SCR + DMSO vs. AAV-Nav1.7- CRS + DMSO P=0.9428		
			AAV-SCR + DMSO vs. AAV-Nav1.7- CRS + 20 µM Pitstop2 P=0.8158		
			AAV-SCR + 20 µM Pitstop2 vs. AAV-Na∨1.7-CRS + DMSO P=0.9992		
			AAV-SCR + 20 µM Pitstop2 vs. AAV-Na∨1.7-CRS + 20 µM Pitstop2 P=0.9547		
			AAV-Nav1.7-CRS + DMSO vs. AAV- Nav1.7-CRS + 20 µM Pitstop2 P=0.9776		
Fig 6D	Males SNI reversal –	Two-way anova	AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (Pre-SNI,	AAV-CMV-eGFP- Na _v 1.7-CRS (n=5)	
	withdrawal thresholds		AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=0d, p>0.9999)	AAV-CMV-eGFP- SCR (n=6)	
			AAV-CMV-eGFP-SCR (t=4d, p=0.0173)		
			AAV-CMV-eGFP-SCR (t=7d, p=0.0087)		
			AAV-CMV-eGFP-SCR (t=11d, p=0.0152)		
			AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=14d, p=0.0087)		
			AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=20d, p=0.0238)		
			AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=24d, p=0.0866)		

			AAV-CMV-eGFP-Na _v 1.7-CRS vs. AAV-CMV-eGFP-SCR (t=31d,		
			p=0.1212)		
Fig 6E	Males SNI reversal –	Mann-Whitney test	AAV-CMV-eGFP-Nav1.7-CRS vs AAV- CMV-eGFP-SCR (p=0.0043)	AAV-CMV-eGFP- Na∨1.7-CRS (n=5)	
	area under the curve			AAV-CMV-eGFP-	
				SCR (n=6)	
Fig 6F	Males SNI- Reversal	Mann-Whitney test	AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Nav1.7	eGFP-SCR	
	Locomotor activity		p=0.9307	(n=6)	
				AAV9-CMV-	
				eGFP-Nav1.7	
				(n=5)	
Fig 6G	Males SNI-	Multiple Mann-	Time in Peripherv	AAV9-CMV-	
1.900	Reversal	Whitney tests	AAV/9-CMV-eGEP-SCR vs AAV/9-	eGEP-SCR	
	Open field		CMV-eGFP-Nav1.7	(n=6)	
	test		p=0.2786		
			T	AAV9-CMV-	
				eGFP-Nav1.7	
			AAV9-CMV-eGFP-SCR vs. AAV9-	(n=5)	
			CMV-eGFP-Nav1.7		
			p=0.2786		
FIG 6H	Females	Two-way anova	AAV-CMV-eGFP-Na $_{1.7}$ -CRS Vs.	AAV-CMV-eGFP-	
	Sivi reversal		AAV-CIVIV-EGFP-SCR (Pre-SINI,	5CR (N=8)	
	– paw		p>0.9999)		
	throcholdo				
	thresholds			Nav1.7-CRS(II-9)	
			AAV-CIMV-EGFP-SCR (I=70, argument)		
			p=0.3770)		
			AAV-CMV-eGFP-Na _V 1.7-CRS vs.		
			AAV-CMV-eGFP-SCR (t=11d,		
			p=0.0275)		
			AAV-CMV-eGFP-Na _V 1.7-CRS vs.		
			AAV-CMV-eGFP-SCR (t=14d,		
			p=0.021)		
			AAV-CMV-eGFP-Nav1.7-CRS vs		
			AAV-CMV-eGFP-SCR (t=18d		
			p<0.0001)		
			ΔΔ\/_CM\/_ΔGFP_SCR (t=27d		
			n<0.0001)		
			AAV-CMV-eGFP-Nav1.7-CRS vs.		
			AAV-CMV-eGFP-SCR (t=38d,		
			p=0.004)		
Fig 6I	Females	Mann-Whitney	AAV-CMV-eGFP-Nav1.7-CRS vs.	AAV-CMV-eGFP-	
	SNI reversal	test	AAV-CMV-eGFP-SCR (p<0.0001)	SCR (n=8)	
	– area				

	under the			AAV-CMV-eGFP-	
	curve			Nav1.7-CRS (n=9)	
Fig 6J	Females SNI reversal - Locomotor activity	Mann-Whitney test	AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 p=0.1520	AAV9-CMV- eGFP-SCR (n=7) AAV9-CMV- eGFP-Nav1.7	
				(n=8)	
Fig 6K	Females SNI- reversal Open field test	Multiple Mann- Whitney tests	Time in Periphery AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na _V 1.7 p=0.8665 Time in Center AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na _V 1.7 p=0.8665		
Fig 6L	Males SNI prevention – paw withdrawal thresholds	Two-way anova	AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (BL1, p>0.9999) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (BL2, p>0.9999) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=6d, p=0.0424) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=8d, p=0.0002) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=12d, p=0.0005) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=19d, p=0.0005) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=21d, p=0.0015) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=21d, p=0.0015) AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=54d, p=0.0038)	AAV-CMV-eGFP- SCR (n=7) AAV-CMV-eGFP- Nav1.7-CRS (n=9)	
Fig 6M	Males SNI prevention – area under the curve	Mann-Whitney test	AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (p=0.0002)	AAV-CMV-eGFP- SCR (n=7) AAV-CMV-eGFP- Nav1.7-CRS (n=9)	

Fig 6N	Males SNI prevention - Locomotor activity	Mann-Whitney test	AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 p=0.7577	AAV-CMV-eGFP- SCR (n=7) AAV-CMV-eGFP- Na _V 1.7-CRS (n=9)	
Fig 6O	Males SNI- Prevention Open field	Multiple Mann- Whitney tests	Time in Periphery AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 P=0 11/1	AAV-CMV-eGFP- SCR (n=7)	
			Time in Center AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 P=0 1141	Na _v 1.7-CRS (n=9)	
Fig 6P	Females SNI prevention –	Two-way anova	AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (BL1, p>0.9999)	AAV-CMV-eGFP- SCR (n=9)	
	paw withdrawal thresholds		AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (BL2, p=0.2058)	AAV-CMV-eGFP- Na∨1.7-CRS (n=8)	
			AAV-CMV-eGFP-Na _V 1.7-CRS vs. AAV-CMV-eGFP-SCR (t=8d, p=0.0024)		
			AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=12d, p=0.0005)		
			AAV-CMV-eGFP-Na _v 1.7-CRS vs. AAV-CMV-eGFP-SCR (t=16d, p=0.0256)		
			AAV-CMV-eGFP-Na _V 1.7-CRS vs. AAV-CMV-eGFP-SCR (t=20d, p=0.0069)		
			AAV-CMV-eGFP-Nav1.7-CRS vs. AAV-CMV-eGFP-SCR (t=54d, p=0.0107)		
Fig 6Q	Females SNI prevention –	Mann-Whitney test	AAV-CMV-eGFP-Nav1.7-CRS vs AAV- CMV-eGFP-SCR (p<0.0001)	AAV-CMV-eGFP- SCR (n=9)	
	area under the curve			AAV-CMV-eGFP- Nav1.7-CRS (n=8)	
Fig 6R	Females SNI prevention -	Mann-Whitney test	AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 p=0.3704	AAV-CMV-eGFP- SCR (n=9)	
	Locomotor activity			AAV-CMV-eGFP- Nav1.7-CRS (n=8)	
Fig 6S	Females SNI- prevention	Multiple Mann- Whitney tests	Time in Periphery AAV9-CMV-eGFP-SCR vs. AAV9- CMV-eGFP-Na∨1.7 p=0.5414	AAV-CMV-eGFP- SCR (n=9)	

	Open field			AAV-CMV-eGFP-	
	test		Time in Center	Nav1.7-CRS (n=8)	
			AAV9-CMV-eGFP-SCR vs. AAV9-	. ,	
			CMV-eGFP-Nav1.7 p=0.5414		
Fig 7A	Paclitaxel paw withdrawal threshold	Three-way ANOVA	Conveegree-Navi 1.7 p=0.3414Holm-Sidak post-hoc test:Time p<0.0001	Veh + AAV9-CMV- eGFP-SCR (n=8) Veh + AAV9-CMV- eGFP-Nav1.7- CRS (n=8) Pac + AAV9-CMV- eGFP-SCR (n=8) Pac + AAV9-CMV- eGFP-Nav1.7- CRS (n=8)	
Fig 7B	Paclitaxel paw withdrawal threshold – area under the curve	One-way ANOVA	Veh + AAV9-CMV-eGFP-SCR vs. Veh + AAV9-CMV-eGFP-Nav1.7-CRS p=0.4799 Veh + AAV9-CMV-eGFP-SCR vs. Pac + AAV9-CMV-eGFP-SCR p<0.0001 Veh + AAV9-CMV-eGFP-SCR vs. Pac + AAV9-CMV-eGFP-Nav1.7-CRS p=0.1597 Veh + AAV9-CMV-eGFP-Nav1.7-CRS	Veh + AAV9-CMV- eGFP-SCR (n=8) Veh + AAV9-CMV- eGFP-Na∨1.7- CRS (n=8) Pac + AAV9-CMV- eGFP-SCR	
			vs. Pac + AAV9-CMV-eGFP-SCR p<0.0001	(n=8) Pac + AAV9-CMV- eGFP-Na∨1.7- CRS	

			Veh + AAV9-CMV-eGFP-Nav1.7-CRS	(n=8)	
			vs. Pac + AAV9-CMV-eGFP-Nav1.7-	(-)	
			CRS p=0 0062		
			$Pac + \Delta \Lambda / 9 - CM / - 6 GEP - SCR vs Pac$		
			+ $\Delta\Delta/Q_{c}M/L_{e}GEP_N_{a}/1.7_{c}RS$		
Fig 7C	Dealitaval	Three wey	Holm Sidek post has test:	$1/ab \pm AA1/0 CM1/$	
FIG /C	time		Holm-Sluak post-noc test.		
		ANOVA	Time = = <0.0001		
	aversive			(11-0)	
	response		Vince Type 10 0001		
				eGFP-Nav1.7-	
				CRS	
			$\frac{1}{2}$ Time x Virus 1x p<0.0001	(n=8)	
			Treatment Tx x Virus Tx p<0.0001	Pac + AAV9-CMV-	
			Time x Treatment Tx x Virus Tx	eGFP-SCR	
			p<0.0001	(n=8)	
				Pac + AAV9-CMV-	
			8 days: Veh + AAV9-CMV-eGFP-SCR	eGFP-Nav1.7-	
			vs. 8 days: Pac + AAV9-CMV-eGFP-	CRS	
			SCR p=0.0024	(n=8)	
			15 days: Veh + AAV9-CMV-eGFP-		
			SCR vs. 15 days: Pac + AAV9-CMV-		
			eGFP-SCR p=0.0024		
			17 days: Veh + AAV9-CMV-eGFP-		
			SCR vs. 17 days: Pac + AAV9-CMV-		
			eGFP-SCR p=0.0190		
			22 days: Veh + AAV9-CMV-eGFP-		
			SCR vs. 22 davs: Pac + AAV9-CMV-		
			eGFP-SCR p=0.0027		
			8 davs: Veh + AAV9-CMV-eGFP-		
			Nav1.7-CRS vs. 8 davs: Pac + AAV9-		
			CMV-eGFP-Nav1.7-CRS p=0.0033		
			8 days: Pac + AAV9-CMV-eGEP-SCR		
			vs 8 days: Pac + AAV9-CMV-eGEP-		
			Nav1 7-CRS n>0 9999		
			15 days: Pac + AAV9-CMV-eGEP-		
			SCR vg 15 days: Pac + $\Delta \Delta \sqrt{9}$ -CMV/-		
			$aCEP_Na_17_CPS_p=0.0040$		
			17 days: Page + AAVQ CMV oCEP		
			$SCP_{VC} = 17 \text{ days: Pac + AAV9-CMV-eGFF-}$		
			ACED No. 17 CDQ 5-0 0007		
			$\frac{\partial \nabla F - \partial a}{\partial x} = \frac{\partial \nabla F - \partial a}{\partial x} $		
			22 uays. Fac + $AAV3$ -CIVIV-EGFF- SCR ve 22 days. Pac + $AAV/0_{-}CMV/$		
			oCED Nov1 7 CDS n=0 0108		
Fig 7D	Paclitaval		$V_{ab} \pm \Lambda V_{a} CMV = CEP CP va Vab$	$1/ab \pm \Lambda\Lambda1/0 CM1/1$	
	timo				
			- 113/1-0K2		
	aversive			(11-0)	
	area under				
			$\gamma = 2 \nabla A \nabla B \nabla B$		
				(n-2)	
				$\begin{bmatrix} (11-0) \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	
			vs. Pac + AAV9-UNIV-eGFP-SCR	(n=8)	
	1		p<0.0001		1

			Veh + AAV9-CMV-eGFP-Nav1.7-CRS vs. Pac + AAV9-CMV-eGFP-Nav1.7- CRS p=0.0005 Pac + AAV9-CMV-eGFP-SCR vs. Pac + AAV9-CMV-eGFP-Nav1.7-CRS p<0.0001	Pac + AAV9-CMV- eGFP-Na _V 1.7- CRS (n=8)	
Fig 8B	Na∨1.7 pull down from Macaque DRG	Mann-Whitney test	Nav1.7-CRS vs. Scramble p=0.0286	Na∨1.7-CRS (n=4) Scramble (n=4)	
Fig 8E	Macaque DRG whole cell patch clamp electrophysi ology – peak current density	Kruskal-Wallis Test; p<0.0001 Kruskal-Wallis statistic = 22.99	AAV-CMV-SCR vs. AAV-CMV-SCR + Protox, p=0.0154 AAV-CMV-SCR vs. AAV-CMV-Nav1.7, p=0.0010 AAV-CMV-SCR vs. AAV-CMV-Nav1.7 + Protox, p<0.0001 AAV-CMV-SCR + Protox vs. AAV- CMV-Nav1.7, p>0.9999 AAV-CMV-SCR + Protox vs. AAV- CMV-Nav1.7 + Protox, p>0.9999 AAV-CMV-Nav1.7 vs. AAV-CMV- Nav1.7 + Protox, p>0.9999	AAV9-SCR (n=13) AAV9-Na∨1.7- CRS (n=12) AAV9-SCR + 5nM ProTx-II (n=17) AAV9-Na∨1.7- CRS + 5nM ProTx-II (n=16)	
Fig 8I	Macaque DRG whole cell patch clamp electrophysi ology – TTX-R peak current density	Mann-Whitney test	AAV9-Na∨1.7-CRS + 300 nM TTX vs. AAV9-SCR + 300 nM TTX p=0.4865	AAV9-SCR + 300 nM TTX (n=11) AAV9-Na _V 1.7- CRS (n=11)	
Table S4	Macaque DRG whole cell patch clamp electrophysi ology – TTX-R channel kinetics	Mann-Whitney test	AAV9-SCR + TTX vs AAV9-Nav1.7- CRS+ TTX Activation V1/2 P=0.7026 K P=0.5853	AAV9-SCR + TTX Activation V1/2 (n=11) K (n=11) AAV9-NaV1.7- CRS+ TTX Activation V1/2 (n=11) K (n=11)	
	Macaque DRG whole cell patch clamp electrophysi ology – ProTx-II	One-Way ANOVA	<u>V1/2</u> Activation AAV9-SCR + Vehicle vs AAV9-SCR + 5 nM ProTx-II P=0.0037	AAV9-SCR + Vehicle Activation V1/2 (n=13) K (n=13)	

channel	$\Delta \Delta 1/9-SCR +$	$\Delta \Delta V_{9}$ -SCR +
kinetics	Vehicle vs $\Delta\Delta/Q$ -Nav1 7-CRS+	5 nM ProTx-II
Killetics	Vehicle VS ARV 9-Nav 1.7-ONO 1	Activation
	P=0.9790	V 1/2 (11 - 13)
		K (n=13)
	AAV9-SCR +	
	Vehicle vs AAV9-Nav1.7-CRS+	
	5 nM ProTx-II	AAV9-NaV1.7-
	P=0.1558	CRS+ Vehicle
		Activation
	AAV9-SCR +	V1/2 (n=17)
	5 nM ProTx-II vs AAV9-Nav1.7-CRS+	K (n=17)
	Vehicle	
	P=0.0175	
		AAV9-NaV1.7-
	AAV9-SCR +	CBS+
	5 nM ProTy-II vs AAV/9-Nav1 7-CRS+	5 nM ProTy-II
	5 nM ProTy II	Activation
		$\lambda(1/2)$ (n=1.4)
	F-U.2990	V 1/2 (11-14)
		r (n=14)
	AAV9-Nav1.7-CRS+ Vehicle vs AAV9-	
	Na _V 1.7-CRS+	
	5 nM ProTx-II	
	P=0.3917	
	Slope Values	
	AAV9-SCR +	
	Vehicle vs AAV9-SCR +	
	5 nM ProTx-II	
	P=0.7661	
	AAV9-SCR +	
	Vehicle vs AAV9-Nav1 7-CRS+	
	Vehicle	
	P=0 7296	
	1 -0.7230	
	P=0.7412	
	o nivi Proix-ii vs AAV9-Nav1.7-CRS+	
	Vehicle	
	P=0.2656	
	AAV9-SCR +	
	5 nM ProTx-II vs AAV9-Na∨1.7-CRS+	
	5 nM ProTx-II	
	p>0.9999	
	AAV9-Nav1.7-CRS+ Vehicle vs AAV9-	
	Na∨1.7-CRS+	
	5 nM ProTx-II	
	P=0.2151	