Figure 1B	Double pulse									
	All pairwise multiple comparison procedures (Holm- Sidak method)									
	Test per	Condition group 1	Condition group 2	mean difference	t value	р	Statistical differences	Normality Test (Shapiro-Wilk)	Equal Variance Test (Brown-Forsythe)	Two way repeated measures ANOVA (One factor repetiton, Interval)
	Treatment x Interval=10 ms	wt Vehicle	Ts65Dn vehicle	17 708	0.823	0.415	No	Passed, p =0.06	Passed, p =0.816	F(5,70)=0.471, p =0.797
	Treatment x Interval=20 ms Treatment x Interval=40 ms	wt Vehicle wt Vehicle	Ts65Dn vehicle Ts65Dn vehicle	13 741 4 969	0.638	0.526 0.818	No No			
	Treatment x Interval=100 ms Treatment x Inteval=200 ms	wt Vehicle wt Vehicle	Ts65Dn vehicle Ts65Dn vehicle	11 387 0.747	0.529 0.0347	0.599 0.972	No No			
	Treatment x Inteval=200 ms	wt Vehicle	Ts65Dn vehicle	5 908	0.274	0.785	No			
Figure 1 C-F	LTP Test-evolution									Two way repeated measures
	Test per	Condition group 1	Condition group 2					Normality Test (Shapiro-Wilk)	Equal Variance Test (Brown-Forsythe)	ANOVA (One factor repetiton, Interval)
	Treatments x Time (min) from 15 mi before High Frequency Stimulatio		Wt+a5IA Ts6Dn vehicle					Passed, p =0.08	Passed, p =0.115	F(114,608)=8.452, p <0.001
	(HFS) to 60 min after HFS. 30 mi during the five following days were	n Wt Vehicle	Ts65Dn α5IA				ted individually. seline to Day 6]			
	also recorded. Data are represente	d Wt+a5IA	Ts6Dn vehicle Ts65Dn α5IA	by 6 group	comparisons					
	every 5 min.	Ts65Dn vehicle	Ts65Dn α5IA							
Figure 1 G	LTP Test- groups x days			All nairwise	multiple co	mnarison nro	cedures (Holm-			
	Test per	Condition group 1	Condition group		Sidal	method)	Statistical	Normality Test	Equal Variance Test	
		Wt Vehicle	Wt+a5IA	difference 67.66	t value 8 829	p σ<0.001	differences Yes	(Shapiro-Wilk) Passed, p =0.399	(Brown-Forsythe) Passed, p = 0.130	ANOVA F(3,96)=116.026, p <0.001
		Wt Vehicle	Ts6Dn vehicle	140 994	18 399	p <0.001	Yes	rasseu, p =0.555	Passeu, p =0.130	r(3,30)=110.020, p <0.001
Day 1	Treatment	Wt Vehicle Wt+a5IA	Ts65Dn α5IA Ts6Dn vehicle	88 695 73 334	11 574 9 570	p < 0.001 p < 0.001	Yes Yes			
		Wt+a5IA Ts65Dn vehicle	Ts65Dn α5IA Ts65Dn α5IA	21 035 52 299	2,745 6 825	p =0.007 p <0.001	Yes Yes			
		Wt Vehicle	Wt+a5IA	27 151	4 223	p<0.001	Yes	Passed, p =0.008	Passed, p = 0.711	F(3,96)=79.507, p < 0.001
Day 2	Treatment	Wt Vehicle Wt Vehicle	Ts6Dn vehicle Ts65Dn α5IA	66 717 31 921	10 377 4 965	p <0.001 p <0.001	Yes Yes			
Day 2	rreatment	Wt+a5IA Wt+a5IA	Ts6Dn vehicle Ts65Dn α5IA	93 868 59 072	14.6 9 188	p <0.001 p <0.001	Yes Yes			
		Ts65Dn vehicle	Ts65Dn α5IA	34 796	5 412	p < 0.001	Yes			
		Wt Vehicle Wt Vehicle	Wt+a5IA Ts6Dn vehicle	93 839 21 742	11 142 2 581	p <0.001 p =0.023	Yes Yes	Failed, p < 0.05	Passed, p = 0.435	F(3, 96)=71.018, p < 0.001
Day 3	Treatment	Wt Vehicle Wt+a5IA	Ts65Dn α5IA Ts6Dn vehicle	20 218 115 581	2 401 13 723	p=0.018 p<0.001	Yes Yes			
		Wt+a5IA Ts65Dn vehicle	Ts65Dn α5IA Ts65Dn α5IA	73 621 41,96	8,741 4 982	p <0.001 p <0.001	Yes Yes			
		Wt Vehicle	Wt+a5IA	87 052	8 063	p < 0.001	Yes	Failed, p < 0.05	Passed, p = 0.102	F(3, 96)=36.95, p < 0.001
Day 4	Treatment	Wt Vehicle Wt Vehicle	Ts6Dn vehicle Ts65Dn α5IA	17 797 37 918	1 648 3 512	p=0.103 p=0.001	No Yes			
		Wt+a5IA Wt+a5IA	Ts6Dn vehicle Ts65Dn α5IA	104 849 49 134	9 711 4 551	p <0.001 p <0.001	Yes Yes			
		Ts65Dn vehicle Wt Vehicle	Ts65Dn α5IA Wt+a5IA	55 715 145 338	5.16 15 106	p < 0.001 p < 0.001	Yes Yes	Passed. p =0.089	Passed. p =0.078	F(3, 96)=93.359, p<0.001
		Wt Vehicle Wt Vehicle	Ts6Dn vehicle Ts65Dn α5IA	14 544 52-047	1.37	p=0.174	No Yes	1 03300, p =0.003	1 03500, p =0.070	1(3,30)=33.333, p 10.001
Day 5	Treatment	Wt+a5IA	Ts6Dn vehicle	160 338	15 106	p <0.001 p <0.001	Yes			
		Wt+a5IA Ts65Dn vehicle	Ts65Dn α5IA Ts65Dn α5IA	93 747 66 591	8 832 5 274	p <0.001 p <0.001	Yes Yes			
		Wt Vehicle Wt Vehicle	Wt+a5IA Ts6Dn vehicle	159 562 15 416	15 179 1 466	p<0.001 p=1.466	Yes No	Failed, p<0.05	Passed, p = 0.114	F(3, 96)=114.507, p < 0.001
Day 6	Treatment	Wt Vehicle	Ts65Dn α5IA	64 717	6 156	p < 0.001	Yes			
		Wt+a5IA Wt+a5IA Ts65Dn vehicle	Ts6Dn vehicle Ts65Dn α5IA Ts65Dn α5IA	174 977 94 844 80 133	16 645 9 022 7 623	p <0.001 p <0.001	Yes Yes Yes			
		1303DII Veliicie	ISOSDII USIA	00 133	7 023	p<0.001	res			
Figure 3	Y maze		Condition group	mean	95 CI lower	95 Cl upper	95.0	Normality Test	Equal Variance Test	
Variable Number of arms visited	Test per	Condition group 1	. 2	difference	limit -7.384	limit 4.692	containing 0	(Shapiro-Wilk) Failed, p < 0.050	(Brown-Forsythe)	ANOVA Not Dana
	Treatment	wt Vehicle Ts65Dn vehicle	wt α5IA Ts65Dn α5IA	-5.615	-11.307	0.000	yes yes	ralleu, p < 0.050	Not Done	Not Done
	genotype	wt vehicle wt α5IA	Ts65Dn vehicle Ts65Dn α5IA	2.076 -2.384	-4.307 -7.615	8.230 3.076	yes yes			
% spontaneous alternation	Treatment	wt Vehicle Ts65Dn vehicle	wt α5IA Ts65Dn α5IA	0.957 7.164	-9.112 1.149	11.511 13.029	yes	Passed, p =0.869	Failed <i>p</i> < 0.050	Not Done
	genotype	wt vehicle	Ts65Dn vehicle	-12.691	-20.766	-4.757	no no			
		wt α5IA	Ts65Dn α5IA	-6.485	-15.607	1.934	yes			
Figure 2	Novel object recognition		Condition group	mean	95 CI lower	95 Cl upper	95 CI	Normality Test	Equal Variance Test	
Variable Habituation Mean distance	Test per	Condition group 1		difference	limit	limit	containing 0	(Shapiro-Wilk)	(Brown-Forsythe)	ANOVA
travelled (cm)	Treatment	wt Vehicle	wt α5IA	73.072	-16.627	159.501	yes	Failed, p < 0.050	Not Done	Not Done
	genotype	Ts65Dn vehicle wt vehicle	Ts65Dn α5IA Ts65Dn vehicle	84.237 181.865	-50.003 76.212	226.345 293.642	yes no			
Aquisition Mean distance		wt α5IA	Ts65Dn α5IA	46.287	-57.464	165.232	yes			
travelled (cm)	Treatment	wt Vehicle Ts65Dn vehicle	wt α5IA Ts65Dn α5IA	169.321 117.688	74.158 -6.699	272.476 243.119	no yes	Failed, p < 0.050	Not Done	Not Done
	genotype	wt vehicle	Ts65Dn vehicle	111.592	40.841	189.277	no			
Test Mean distance		wt α5IA	Ts65Dn α5IA	31.854	-50.465	135.625	yes			
travelled (cm)	Treatment	wt Vehicle Ts65Dn vehicle	wt α5IA Ts65Dn α5IA	95.451 62.272	24.270 -31.601	167.624 152.893	<u>no</u> yes	Failed, p < 0.050	Not Done	Not Done
	genotype	wt vehicle	Ts65Dn vehicle	86.411	20.554	160.094	no			
Recognition index	Treatment	wt α5IA wt Vehicle	Ts65Dn α5IA wt α5IA	24.538 -1.293	-52.939 -21.331	131.935 18.353	yes yes	Passed, p =0.869	Passed, p =0.114	F (1,50)=4.548, p =0.038
	genotype	Ts65Dn vehicle wt vehicle	Ts65Dn α5IA Ts65Dn vehicle	23.516 -0.343	4.570 -0.496	44.437 -0.178	no no	Passed, p =0.869	Passed, p =0.114	F (1,50)=10.272, p =0.002
		wt α5IA	Ts65Dn α5IA	-0.0823	-0.285	0.106	yes			
Figure 4	Morris Water Maze									
	Test per	Condition group 1	Condition group	mean difference	95 CI lower	95 Cl upper	95 CI containing 0	Normality Test (Shapiro-Wilk)	Equal Variance Test (Brown-Forsythe)	ANOVA
Variable	•	wt vehicle	Ts65Dn vehicle	umerence	mint	milt	containing 0	Passed, p =0.722	Passed, p =0.828	RM F(1,102)=25.343, p<0.001
Variable Latency (sec)	genotype		Ts65Dn α5IA					Passed, p =0.632	Passed, p =0.643	RM F (1,72)=3.035, p =0.107
	genotype	wt α5IA	1303011 03111							
		wt vehicle	Ts65Dn vehicle						Passed, p = 0.832 Passed, p = 0.346	RM F (1,102)=12.375, p=0.003 RM F (1,72)=3.970, p=0.07
Latency (sec) Distance (m)	genotype genotype genotype	wt vehicle wt α5IA	Ts65Dn vehicle Ts65Dn α5IA					Passed, p =0.819	Passed, p =0.346	RM F(1,72)=3.970, p=0.07
Latency (sec)	genotype genotype genotype genotype	wt vehicle	Ts65Dn vehicle					Passed, p = 0.819 Passed, p = 0.179		
Latency (sec) Distance (m) % distance in thigmotaxis Log 1+% distance in thigmo Mean speed	genotype genotype genotype genotype t genotype genotype	wt vehicle wt α5IA wt vehicle wt α5IA wt vehicle	Ts65Dn vehicle Ts65Dn α5IA Ts65Dn vehicle Ts65Dn α5IA Ts65Dn vehicle					Passed, <i>p</i> =0.819 Passed, <i>p</i> =0.179 Passed, <i>p</i> =0.310 Passed, <i>p</i> =0.065	Passed, p = 0.346 Passed, p = 0.181 Passed, p = 0.990 Passed, p = 0.240	RM $F(1,72)=3.970, p=0.07$ RM $F(1,102)=17.225, p<0.001$ RM $F(1,72)=25,670, p<0.001$ RM $F(1,102)=1.616, p=0.221$
Latency (sec) Distance (m) % distance in thigmotaxis Log 1+% distance in thigmo Mean speed Log 1-Mean speed	genotype genotype genotype t genotype genotype genotype	wt vehicle wt aSIA wt vehicle wt aSIA wt vehicle wt aSIA	Ts65Dn vehicle Ts65Dn αSIA Ts65Dn vehicle Ts65Dn αSIA Ts65Dn vehicle Ts65Dn αSIA	20 ***	20.25	3.500		Passed, <i>p</i> =0.819 Passed, <i>p</i> =0.179 Passed, <i>p</i> =0.310 Passed, <i>p</i> =0.065 Passed, <i>p</i> =0.298	Passed, <i>p</i> =0.346 Passed, <i>p</i> =0.181 Passed, <i>p</i> =0.990 Passed, <i>p</i> =0.240 Passed, <i>p</i> =0.720	RM $F(1,72)$ =3.970, p =0.07 RM $F(1,102)$ =17.225, p <0.001 RM $F(1,72)$ =25,670, p <0.001 RM $F(1,102)$ =1.616, p =0.221 RM $F(1,72)$ =0,148, p =0.707
Latency (sec) Distance (m) % distance in thigmotaxis Log 1+% distance in thigmo Mean speed	genotype genotype genotype genotype t genotype genotype	wt vehicle wt α5IA wt vehicle wt α5IA wt vehicle	Ts65Dn vehicle Ts65Dn α5IA Ts65Dn vehicle Ts65Dn α5IA Ts65Dn vehicle	-20.533 -0.416	-38.255 -10.625	-3.588 12.708	<u>no</u> yes	Passed, p = 0.819 Passed, p = 0.179 Passed, p = 0.310 Passed, p = 0.065 Passed, p = 0.298 Passed, p = 0.243	Passed, p = 0.346 Passed, p = 0.181 Passed, p = 0.990 Passed, p = 0.240	RM $F(1,72)=3.970, p=0.07$ RM $F(1,102)=17.225, p<0.001$ RM $F(1,72)=25,670, p<0.001$ RM $F(1,102)=1.616, p=0.221$