

Mann-Whitney Test

Measurement	n-value dorsal/ventral/animals	Median (dorsal/ventral)	p-value	U Statistic	Significant?	K-S normality test			F-test	
						K-S dist.: dorsal/ventral	p-value: dorsal/ventral	norm. dist.?	p-value	equal variance?
V _m (mV)	38/29/43	1.032258065	0.045	393.5	Yes	0.154/0.117	0.024/>0.10	No		
Sag rest (max R _N /steady R _N)	8/10/10	1.02/1.05	0.094	21	No	0.132/0.296	>0.10/0.013	No		
Sag -65 mV (max R _N /steady R _N)	8/13/10	1.01/1.07	0.065	26.5	No	0.323/0.173	0.014/>0.10	No		
Change in V _m (Barium) (mV)	16/10/19	7.5/5.5	0.325	61	No	0.16/0.159	>0.10/>0.10	Yes	0.014	No

Unpaired t-test two-tailed

Measurement	n-value dorsal/ventral/animals	Mean ± SEM (dorsal/ventral)	p-value	t-ratio	df	Significant?	K-S normality test			F-test	
							K-S dist.: dorsal/ventral	p-value: dorsal/ventral	Norm dist.?	p-value	equal variance?
R _N rest (MΩ)	8/10/10	99.00 ± 10.94/140.6 ± 11.33	0.02	2.6	16	Yes	0.219/0.223	>0.10/>0.10	Yes	0.714	Yes
R _N -65 mV (MΩ)	8/13/10	92.01 ± 7.41/129.9 ± 8.40	0.006	3.09	19	Yes	0.199/0.177	>0.10/>0.10	Yes	0.336	Yes
Rebound @ rest (mV/mV)	8/10/10	-0.035 ± 0.021/-0.020 ± 0.015	0.58	0.57	16	No	0.172/0.219	>0.10/>0.10	Yes	0.588	Yes
Rebound -65 mV (mV/mV)	8/13/10	-0.058 ± 0.014/-0.095 ± 0.019	0.18	1.39	19	No	0.2/0.16	>0.10/>0.10	Yes	0.152	Yes
Somato-dendritic length (μm)	7/7/10	462.1 ± 34.13/484.7 ± 13.80	0.53	0.65	11	No	0.201/0.229	>0.10/>0.10	Yes	0.62	Yes
Surface area (mm ²)	7/7/10	17.20 ± 1.357/13.52 ± 1.12	0.058	2.1	12	No	0.183/0.273	>0.10/>0.10	Yes	0.65	Yes
V _{thresh} -65 mV (mV)	15/9/23	-49.41 ± 0.7427/-45.11 ± 1.489	0.009	2.88	22	Yes	0.178/0.117	>0.10/>0.10	Yes	0.143	Yes
G _{K-Total} density (pS / μm ²)	6/7/09	281.6 ± 59.27/216.8 ± 45.76	0.4	0.88	11	No	0.234/0.235	>0.10/>0.10	Yes	0.665	Yes
G _{K-SLOW} density (pS / μm ²)	6/7/09	94.17 ± 16.61/155.6 ± 21.00	0.047	2.24	11	Yes	0.262/0.233	>0.10/>0.10	Yes	0.506	Yes
G _{K-Fast} density (pS / μm ²)	6/7/09	181.3 ± 26.45/110.5 ± 19.30	0.056	2.16	10	No	0.272/0.148	>0.10/>0.10	Yes	0.511	Yes
G _{K-SUST} density (pS / μm ²)	5/5/09	16.88 ± 4.093/15.26 ± 5.083	0.81	0.25	8	No	0.198/0.341	>0.10/>0.10	Yes	0.685	Yes
% I _{K-SLOW}	6/7/09	36.71 ± 3.712/50.94 ± 3.902	0.024	2.61	11	Yes	0.148/0.177	>0.10/>0.10	Yes	0.798	Yes
G _{K-Fast} Activation V _{1/2} (mV)	6/6/09	6.100 ± 4.745/6.550 ± 4.795	0.95	0.07	10	No	0.184/0.198	>0.10/>0.10	Yes	0.982	Yes
G _{K-Slow} Activation V _{1/2} (mV)	6/6/09	-22.12 ± 4.73/-21.12 ± 3.33	0.86	0.173	10	No	0.222/0.161	>0.10/>0.10	Yes	0.46	Yes
Change in R _N (Barium) (MΩ)	16/10/19	27.71 ± 10.44/54.18 ± 11.92	0.116	1.63	24	No	0.205/0.177	0.072/>0.10	Yes	0.778	Yes

Two-way ANOVA

Sholl Analysis Ventral: 7/Dorsal: 7/ Animals: 10

Source of Variation	% of total variation	P value	P value summary	Significant?	Sidak's multiple comparisons test	Mean Diff.	95% CI of diff.	Significant?	
Interaction	4.992	0.0114	*	Yes	dorsal - ventral				
Scaled Distance from soma (μm)	57.02	< 0.0001	****	Yes	Row 1	0	-4.985 to 4.985	No	
Dorsal-Ventral	1.019	0.0006	***	Yes	Row 2	1	-3.985 to 5.985	No	
					Row 3	1.57	-3.414 to 6.557	No	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value	Row 4	2	-2.985 to 6.985	No
Interaction	492.3	35	14.07	F (35, 432) = 1.667	P = 0.0114	Row 5	3.71	-1.271 to 8.700	No
Scaled Distance from soma (μm)	5623	35	160.7	F (35, 432) = 19.04	P < 0.0001	Row 6	3.43	-1.557 to 8.414	No

Dorsal-Ventral	100.4	1	100.4	F (1, 432) = 11.90	P = 0.0006	Row 7	3.14	-1.842 to 8.128	No
Residual	3646	432	8.439			Row 8	0.57	-4.414 to 5.557	No
						Row 9	-0.29	-5.271 to 4.700	No
						Row 10	-2.14	-7.128 to 2.842	No
						Row 11	0	-4.985 to 4.985	No
						Row 12	0.14	-4.842 to 5.128	No
						Row 13	2.14	-2.842 to 7.128	No
						Row 14	1.71	-3.271 to 6.700	No
						Row 15	5.71	0.7290 to 10.70	Yes
						Row 16	4.43	-0.5567 to 9.414	No
						Row 17	2.57	-2.414 to 7.557	No
						Row 18	3.86	-1.128 to 8.842	No
						Row 19	2.43	-2.557 to 7.414	No
						Row 20	2.86	-2.128 to 7.842	No
						Row 21	1.86	-3.128 to 6.842	No
						Row 22	0.71	-4.271 to 5.700	No
						Row 23	0.86	-4.128 to 5.842	No
						Row 24	1.14	-3.842 to 6.128	No
						Row 25	0.14	-4.842 to 5.128	No
						Row 26	0.57	-4.414 to 5.557	No
						Row 27	-0.86	-5.842 to 4.128	No
						Row 28	-1.57	-6.557 to 3.414	No
						Row 29	-1.71	-6.700 to 3.271	No
						Row 30	-2.14	-7.128 to 2.842	No
						Row 31	-1.86	-6.842 to 3.128	No
						Row 32	-2	-6.985 to 2.985	No
						Row 33	-1.14	-6.128 to 3.842	No
						Row 34	-0.43	-5.414 to 4.557	No
						Row 35	-0.29	-5.271 to 4.700	No
						Row 36	0	-4.985 to 4.985	No

F/I (rest) Ventral: 18/ Dorsal: 22/ Animals: 33

Source of Variation	% of total variation	P value	P value summary	Significant?
Interaction	0.09101	0.7491	ns	No
Current (pA)	66.86	< 0.0001	****	Yes
Dorsal-Ventral	0.2584	0.544	ns	No
Subjects (matching)	26.19	< 0.0001	****	Yes

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	21.29	8	2.662	F (8, 304) = 0.6339	P = 0.7491
Current (pA)	15643	8	1955	F (8, 304) = 465.7	P < 0.0001
Dorsal-Ventral	60.47	1	60.47	F (1, 38) = 0.3749	P = 0.5440
Subjects (matching)	6128	38	161.3	F (38, 304) = 38.41	P < 0.0001
Residual	1277	304	4.199		

F/I (-65)					
Ventral: 21/ Dorsal: 22/ Animals: 33					
Source of Variation	% of total variation	P value	P value summary	Significant?	
Interaction	0.06572	0.772	ns	No	
Current (pA)	81.34	< 0.0001	****	Yes	
Dorsal-Ventral	0.3133	0.3404	ns	No	
Subjects (matching)	13.8	< 0.0001	****	Yes	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	17.83	8	2.229	F (8, 328) = 0.6069	P = 0.7720
Current (pA)	22067	8	2758	F (8, 328) = 751.1	P < 0.0001
Dorsal-Ventral	84.98	1	84.98	F (1, 41) = 0.9304	P = 0.3404
Subjects (matching)	3745	41	91.34	F (41, 328) = 24.87	P < 0.0001
Residual	1205	328	3.672		

Resonance					
Ventral: 19/ Dorsal: 18/ Animals: 23					
Source of Variation	% of total variation	P value	P value summary	Significant?	
Interaction	0.2162	0.4887	ns	No	
Voltage (mV)	67.14	< 0.0001	****	Yes	
Dorsal-Ventral	0.0008062	0.9718	ns	No	
Subjects (matching)	22.32	< 0.0001	****	Yes	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	0.3457	2	0.1728	F (2, 70) = 0.7234	P = 0.4887
Voltage (mV)	107.4	2	53.69	F (2, 70) = 224.7	P < 0.0001
Dorsal-Ventral	0.001289	1	0.001289	F (1, 35) = 0.001264	P = 0.9718
Subjects (matching)	35.7	35	1.02	F (35, 70) = 4.269	P < 0.0001
Residual	16.73	70	0.2389		

Summation					
Ventral: 19/ Dorsal: 15/ Animals: 23					
Source of Variation	% of total variation	P value	P value summary	Significant?	
Interaction	3.038	0.0103	*	Yes	
Voltage (mV)	52.48	< 0.0001	****	Yes	
Dorsal-Ventral	0.276	0.569	ns	No	
Subjects (matching)	26.68	0.0004	***	Yes	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	0.3036	2	0.1518	F (2, 64) = 4.923	P = 0.0103
Voltage (mV)	5.245	2	2.622	F (2, 64) = 85.06	P < 0.0001
Dorsal-Ventral	0.02759	1	0.02759	F (1, 32) = 0.3311	P = 0.5690
Subjects (matching)	2.666	32	0.08332	F (32, 64) = 2.702	P = 0.0004
Residual	1.973	64	0.03083		

Tau					
Ventral: 19/ Dorsal: 18/ Animals: 23					
Source of Variation	% of total variation	P value	P value summary	Significant?	

Interaction	2.194	0.0227	*	Yes
Voltage (mV)	42.31	< 0.0001	****	Yes
Dorsal-Ventral	0.6834	0.421	ns	No
Subjects (matching)	36.08	< 0.0001	****	Yes
ANOVA table	SS	DF	MS	F (DFn, DFd) P value
Interaction	424.5	2	212.3	F (2, 70) = 3.997 P = 0.0227
Voltage (mV)	8187	2	4094	F (2, 70) = 77.09 P < 0.0001
Dorsal-Ventral	132.2	1	132.2	F (1, 35) = 0.6630 P = 0.4210
Subjects (matching)	6981	35	199.5	F (35, 70) = 3.756 P < 0.0001
Residual	3717	70	53.1	

Threshold Ventral: 16/ Dorsal: 15/ Animals: 19

Source of Variation	% of total variation	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Mean Diff.	95% CI of diff.	Significant?	Summary
Interaction	0.2057	0.6979	ns	No	Dorsal - Ventral				
Step duration (ms)	3.1	< 0.0001	****	Yes	Row 1	-5.642	-10.09 to -1.192	Yes	**
Dorsal-Ventral	31.61	0.0003	***	Yes	Row 2	-6.197	-10.65 to -1.747	Yes	**
Subjects (matching)	55.76	< 0.0001	****	Yes	Row 3	-7.018	-11.47 to -2.568	Yes	***
ANOVA table	SS	DF	MS	F (DFn, DFd) P value	Row 4	-6.565	-11.01 to -2.114	Yes	***
Interaction (ms)	13.32	6	2.22	F (6, 174) = 0.6402 P = 0.6979	Row 5	-6.058	-10.51 to -1.607	Yes	**
Step duration	200.7	6	33.46	F (6, 174) = 9.650 P < 0.0001	Row 6	-6.118	-10.57 to -1.668	Yes	**
Dorsal-Ventral	2047	1	2047	F (1, 29) = 16.44 P = 0.0003	Row 7	-5.426	-9.876 to -0.9755	Yes	**
Subjects (matching)	3611	29	124.5	F (29, 174) = 35.91 P < 0.0001					
Residual	603.3	174	3.467						

AP Amplitude Ventral: 14/ Dorsal: 13/ Animals: 16

Source of Variation	% of total variation	P value	P value summary	Significant?
Interaction	0.5348	0.1303	ns	No
step duration (ms)	4.021	< 0.0001	****	Yes
Dorsal-Ventral	0.2185	0.8046	ns	No
Subjects (matching)	87.35	< 0.0001	****	Yes
ANOVA table	SS	DF	MS	F (DFn, DFd) P value
Interaction	105.7	6	17.61	F (6, 150) = 1.677 P = 0.1303
step duration (ms)	794.5	6	132.4	F (6, 150) = 12.61 P < 0.0001
Dorsal-Ventral	43.16	1	43.16	F (1, 25) = 0.06252 P = 0.8046
Subjects (matching)	17257	25	690.3	F (25, 150) = 65.74 P < 0.0001
Residual	1575	150	10.5	

AP Width Ventral: 14/ Dorsal: 13/ Animals: 16

Source of Variation	% of total variation	P value	P value summary	Significant?
Interaction	1.259	< 0.0001	****	Yes

step duration (ms)	15.84	< 0.0001	****	Yes	
Dorsal-Ventral	1.56	0.4783	ns	No	
Subjects (matching)	75.27	< 0.0001	****	Yes	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	0.1037	6	0.01728	F (6, 150) = 5.463	P < 0.0001
step duration (ms)	1.304	6	0.2173	F (6, 150) = 68.70	P < 0.0001
Dorsal-Ventral	0.1284	1	0.1284	F (1, 25) = 0.5182	P = 0.4783
Subjects (matching)	6.196	25	0.2478	F (25, 150) = 78.35	P < 0.0001
Residual	0.4745	150	0.003163		

dV/dt Ventral: 14/ Dorsal: 13/ Animals: 16

Source of Variation	% of total variation	P value	P value summary	Significant?	
Interaction	0.1074	0.3398	ns	No	
step duration (ms)	1.349	< 0.0001	****	Yes	
Dorsal-Ventral	0.8095	0.649	ns	No	
Subjects (matching)	95.36	< 0.0001	****	Yes	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Interaction	857.3	6	142.9	F (6, 150) = 1.144	P = 0.3398
step duration (ms)	10765	6	1794	F (6, 150) = 14.36	P < 0.0001
Dorsal-Ventral	6460	1	6460	F (1, 25) = 0.2122	P = 0.6490
Subjects (matching)	760983	25	30439	F (25, 150) = 243.7	P < 0.0001
Residual	18738	150	124.9		

Ventral Threshold Ventral: 10/ Animals: 9

Source of Variation	% of total variation	P value	P value summary	Significant?				
Interaction	3.218	0.3974	ns	No				
Step duration (ms)	14.14	0.0012	**	Yes				
4-AP	15.85	< 0.0001	****	Yes				
Subjects (matching)	34.85	0.3656	ns	No				
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value			
Interaction	68.78	6	11.46	F (6, 63) = 1.058	P = 0.3974			
Step duration (ms)	302.2	6	50.37	F (6, 63) = 4.260	P = 0.0012			
4-AP	338.8	1	338.8	F (1, 63) = 31.26	P < 0.0001			
Subjects (matching)	744.8	63	11.82	F (63, 63) = 1.091	P = 0.3656			
Residual	682.8	63	10.84					

Dorsal Threshold Dorsal: 7/ Animals: 9

Source of Variation	% of total variation	P value	P value summary	Significant?				
Interaction	1.289	0.1231	ns	No				
Step duration (ms)	24.88	0.0307	*	Yes				

Sidak's multiple comparisons test	Mean Diff.	95% CI of diff.	Significant?	Summary
Ventral - Ventral (4AP)				
Row 1	0.535	-3.547 to 4.617	No	ns
Row 2	1.735	-2.347 to 5.817	No	ns
Row 3	3.067	-1.015 to 7.149	No	ns
Row 4	3.399	-0.6837 to 7.481	No	ns
Row 5	3.769	-0.3129 to 7.852	No	ns
Row 6	4.794	0.7118 to 8.876	Yes	*
Row 7	4.481	0.3986 to 8.563	Yes	*
Dorsal - Dorsal (4AP)				
Row 1	-0.5381	-2.241 to 1.164	No	ns

4-AP	2.019	0.0002	***	Yes	Row 2	0.5322	-1.170 to 2.235	No	ns	
Subjects (matching)	66.79	< 0.0001	****	Yes	Row 3	0.7181	-0.9845 to 2.421	No	ns	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value	Row 4	1.002	-0.7004 to 2.705	No	ns
Interaction	13.76	6	2.293	F (6, 42) = 1.797	P = 0.1231	Row 5	1.539	-0.1631 to 3.242	No	ns
Step duration (ms)	265.5	6	44.25	F (6, 42) = 2.607	P = 0.0307	Row 6	1.389	-0.3132 to 3.092	No	ns
4-AP	21.55	1	21.55	F (1, 42) = 16.89	P = 0.0002	Row 7	1.922	0.2198 to 3.625	Yes	*
Subjects (matching)	712.9	42	16.97	F (42, 42) = 13.30	P < 0.0001					
Residual	53.58	42	1.276							
Threshold 4-AP	Ventral: 10/ Dorsal: 7/ Animals: 9									
Source of Variation	% of total variation	P value	P value summary	Significant?						
Interaction	1.746	0.9102	ns	No						
Step duration (ms)	10.56	0.0594	ns	No						
Dorsal-Ventral	0.1612	0.662	ns	No						
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value					
Interaction	19.4	6	3.233	F (6, 105) = 0.3471	P = 0.9102					
Step duration (ms)	117.3	6	19.55	F (6, 105) = 2.099	P = 0.0594					
Dorsal-Ventral	1.79	1	1.79	F (1, 105) = 0.1922	P = 0.6620					
Residual	978.1	105	9.315							
Ventral F/I (4-AP)	Ventral: 9/ Animals: 9									
Source of Variation	% of total variation	P value	P value summary	Significant?	Sidak's multiple comparisons test	Mean Diff.	95% CI of diff.	Significant?	Summary	
Interaction	0.1509	0.3213	ns	No	Ventral - Ventral 4AP					
Current (pA)	56.62	< 0.0001	****	Yes	Row 1	-3	-5.182 to -0.8181	Yes	**	
4AP	2.26	< 0.0001	****	Yes	Row 2	-4.556	-6.737 to -2.374	Yes	****	
Subjects (matching)	39.81	< 0.0001	****	Yes	Row 3	-3.889	-6.071 to -1.707	Yes	****	
ANOVA table	SS	DF	MS	F (DFn, DFd)	P value	Row 4	-3.444	-5.626 to -1.263	Yes	***
Interaction	22.44	7	3.206	F (7, 64) = 1.190	P = 0.3213	Row 5	-2.667	-4.849 to -0.4848	Yes	**
Current (pA)	8419	7	1203	F (7, 64) = 13.00	P < 0.0001	Row 6	-2.333	-4.515 to -0.1514	Yes	*
4AP	336.1	1	336.1	F (1, 64) = 124.7	P < 0.0001	Row 7	-2.333	-4.515 to -0.1514	Yes	*
Subjects (matching)	5920	64	92.49	F (64, 64) = 34.33	P < 0.0001	Row 8	-2.222	-4.404 to -0.04033	Yes	*
Residual	172.4	64	2.694							
Dorsal F/I (4-AP)	Dorsal: 8/ Animals: 9									
Source of Variation	% of total variation	P value	P value summary	Significant?	Sidak's multiple comparisons test	Mean Diff.	95% CI of diff.	Significant?	Summary	
Interaction	0.1895	0.7098	ns	No	Dorsal - Dorsal 4AP					
Current (pA)	78.61	< 0.0001	****	Yes	Row 1	-1.625	-4.848 to 1.598	No	ns	
4-AP	1.04	< 0.0001	****	Yes	Row 2	-3.375	-6.598 to -0.1521	Yes	*	
Subjects (matching)	17.84	< 0.0001	****	Yes	Row 3	-1.875	-5.098 to 1.348	No	ns	

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value	Row 4	-0.125	-3.348 to 3.098	No	ns
Interaction	23.68	7	3.383	F (7, 56) = 0.6537	P = 0.7098	Row 5	-2.25	-5.473 to 0.9729	No	ns
Current (pA)	9822	7	1403	F (7, 56) = 35.25	P < 0.0001	Row 6	-2.375	-5.598 to 0.8479	No	ns
4-AP	130	1	130	F (1, 56) = 25.12	P < 0.0001	Row 7	-2.375	-5.598 to 0.8479	No	ns
Subjects (matching)	2229	56	39.81	F (56, 56) = 7.692	P < 0.0001	Row 8	-2.125	-5.348 to 1.098	No	ns
Residual	289.8	56	5.175							