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Supplementary Information for

Functionally-distinct Purkinje cell types show temporal precision in encoding locomotion

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Other supplementary materials for this manuscript include the following:

Movies S1

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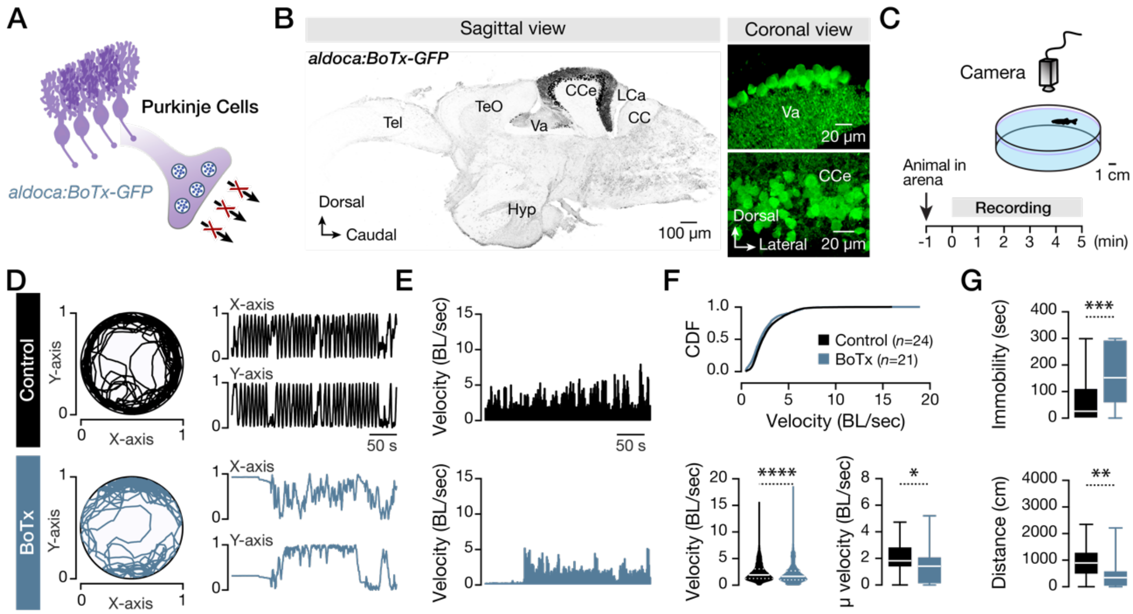

Fig. S1. Adult zebrafish Purkinje cell silencing disrupts locomotor performance. (*A*) A transgenic animal line in which all and only the Purkinje cells encode Botulinum toxin (BoTx) was used. (*B*) Sagittal view of the adult zebrafish brain showing the specificity of the transgenic zebrafish line. Microphotographs acquired from the adult zebrafish valvula (Va) and corpus (CCe) cerebelli showing the expression of the BoTx (GFP+; green) in the Purkinje cell population. (*C*) Experimental setup for recording and evaluating the adult zebrafish locomotor behavior under an open field test. (*D*) Sample traces of recorded movements of control (WT; black) and BoTx (*aldoca:BoTx-GFP*; Cyan) zebrafish, followed by an analysis of the body displacement with respect to X and Y axis during the open field test (duration 5 min). The BoTx animals exhibited erratic locomotion compared to the smooth movements observed in the control animals. (*E, F*) Traces and analysis of normalized velocity show that silencing Purkinje cells in *aldoca:BoTx-GFP* (Cyan) causes slow locomotion (velocity: *P*<0.0001, unpaired *t*-test; average velocity: *P*=0.045, unpaired *t*-test) during the open field test. (*G*) Quantification of the swimming parameters showing that the immobility time (*P*=0.001, unpaired *t*-test), and the total distance traveled (*P*=0.007, unpaired *t*-test), were significantly different between the control (black) and the *aldoca:BoTx-GFP* (Cyan) animals. BoTx, Botulinum toxin; CC, crista cerebellaris; CCe, corpus cerebelli; CDF, cumulative distribution frequencies; Hyp, hypothalamus; LCa, lobus caudalis cerebelli; Tel, telencephalon; TeO, tectum opticum; Va, valvular cerebelli; μ, mean. Data are presented as box or violin plots showing the median with 25/75 percentile (box and line) and minimum–maximum (whiskers). **P*<0.05; ***P*<0.01; ****P*<0.001; *****P*<0.0001; ns, not significant. For detailed statistics, see *SI Appendix*, Table S1.

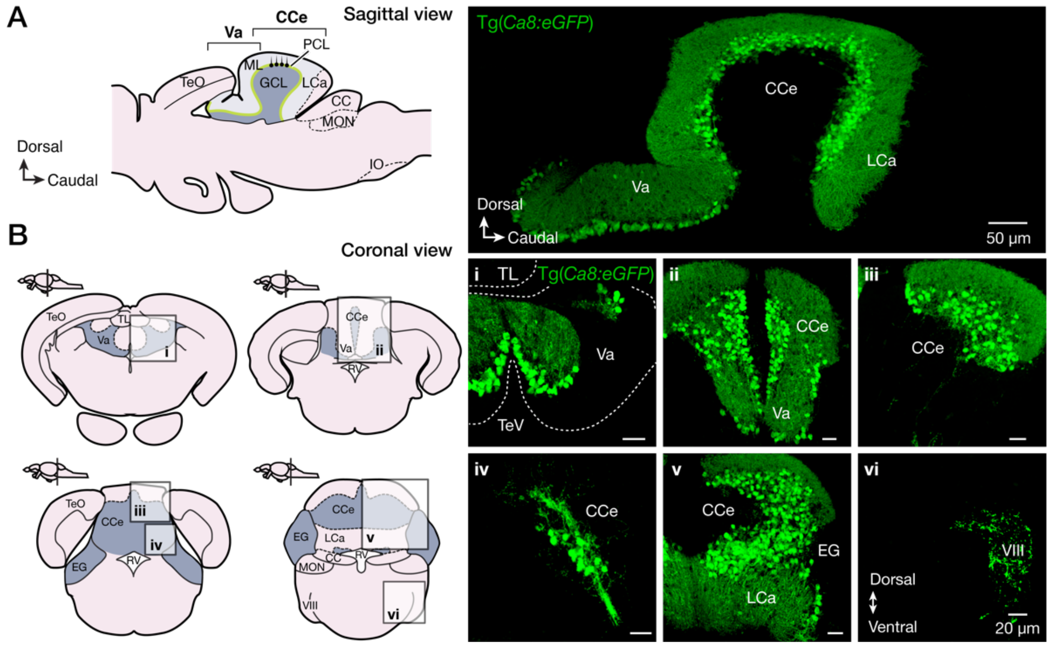

Fig. S2. Expression pattern of *Ca8:eGFP* in the adult zebrafish brain. (*A-B*) Sagittal and coronal sections are showing the specificity of the eGFP expression in all Purkinje cells (green) of the adult zebrafish cerebellum. CC, crista cerebellaris, CCe, corpus cerebelli; EG, eminentia granularis; GCL, granule cell layer; IO, oliva inferior; LCa, lobus caudalis cerebelli; ML, molecular layer; MON, medial octavolateralis nucleus; PCL, Purkinje cell layer; RV, rhombencephalic ventricle; TeO, tectum opticum; Tev, tectal ventricle; Va, valvular cerebelli; VIII, octaval nerve.

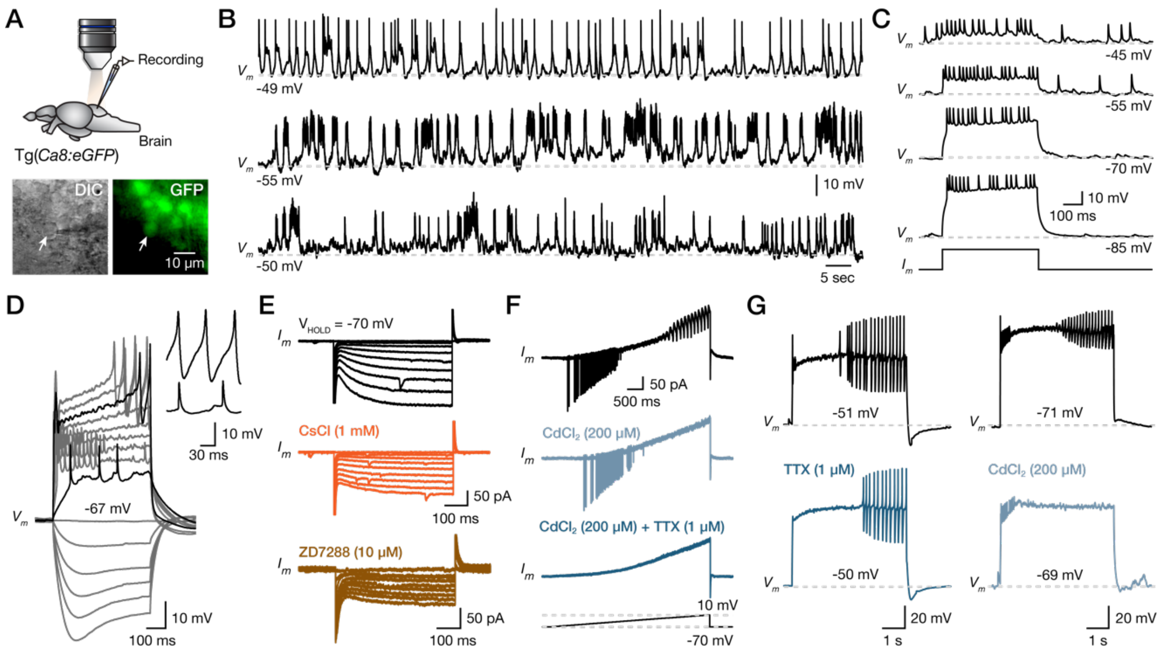

Fig. S3. Common physiological properties of the Purkinje cells. (*A*) *Ex-vivo* setup of an isolated intact brain from the Tg(*Ca8:eGFP*) line allows whole-cell patch-clamp recordings of Purkinje cells. Arrows indicate the recorded cell. (*B*) Sample traces showing the intense and variable spontaneous activity of three different Purkinje cells recorded in the adult zebrafish cerebellum. (*C*) Application of a bias hyperpolarization current eliminates the spontaneous activity without affecting the Purkinje cell firing pattern induced by a depolarized current step injection. (*D*) Step current injections reveal the common Purkinje cell properties (sag potential, sodium spikes, calcium spikes). Magnification of the calcium-based (top) and sodium-based (bottom) spikes showing noticeable differences in the amplitude and duration. (*E*) Voltage-clamp recordings show inward current reduced by *Ih* blockers (CsCl, ZD7288). (*F*) Voltage-clamp ramp recordings show sodium (blocked by TTX) and calcium (blocked by $CdCl_2$) spikes. (*G*) Current-clamp recordings show the elimination of the sodium spikes after the application of TTX and the calcium spikes with $CdCl_2$. $CdCl_2$, calcium chloride; CsCl, cesium chloride; DIC, differential interference contrast; GFP, green fluorescent protein; TTX, tetrodotoxin.

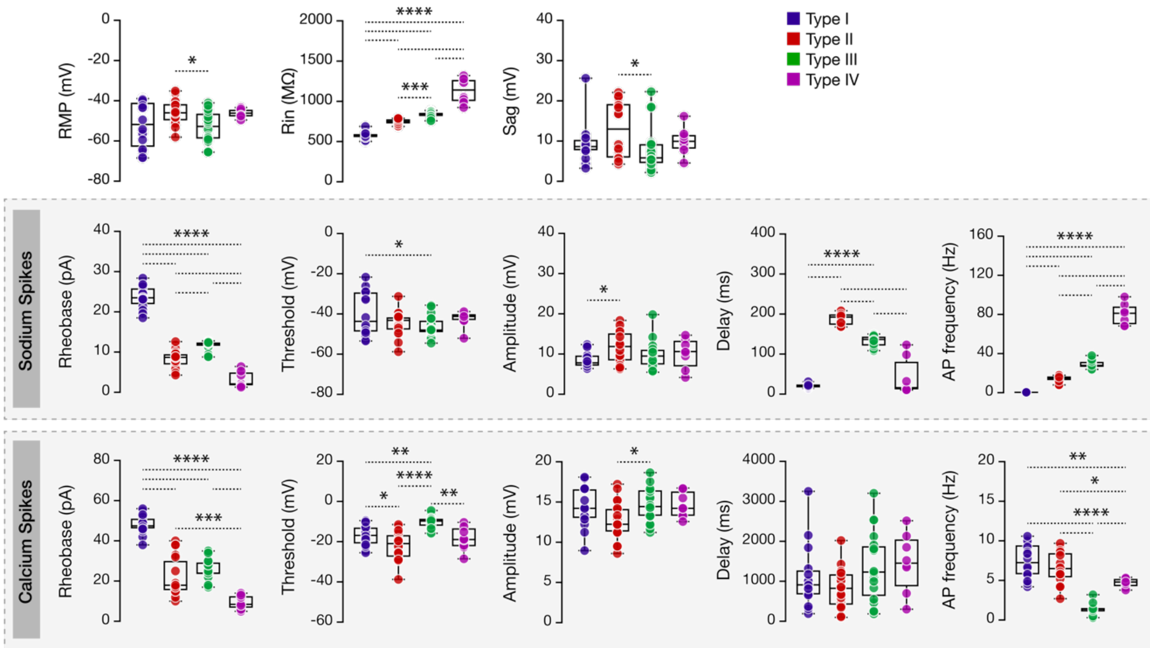

Fig. S4. Physiological features of the adult zebrafish Purkinje cells based on the firing pattern types that are categorized. Detailed analysis of the cellular and electrical properties of all Purkinje cell types. (Top panel) General properties. (Middle panel) Features of the sodium-based spikes. (Bottom panel) Properties obtained from calcium-based spikes. AP, action potential; RMP, resting membrane potential; Rin, input resistance. Data are presented as means ± s.e.m. and as box plots showing the median with 25/75 percentile (box and line) and minimum–maximum (whiskers). **P*<0.05; ***P*<0.01; ****P*<0.001; *****P*<0.0001. For detailed statistics, see *SI Appendix*, Table S1.

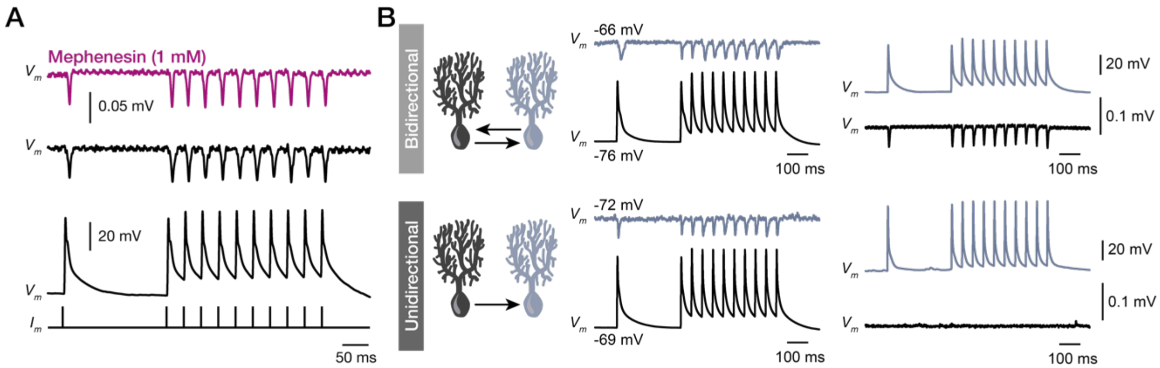

Fig. S5. Purkinje cell synaptic connections. (*A*) IPSPs induced between connected Purkinje cells do not attenuate in the presence of the polysynaptic blocker mephenesin (1 mM), suggesting that are monosynaptically connected. (*B*) Sample traces of paired recordings show bidirectional and unidirectional connections between Purkinje cells.

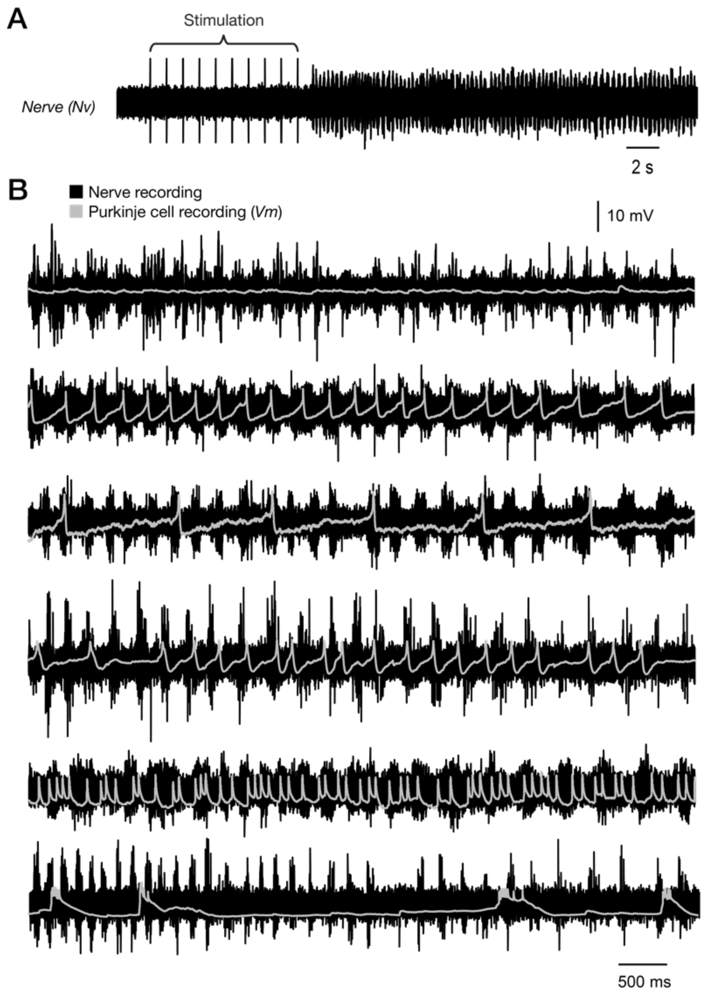

Fig. S6. Purkinje cell firing during the execution of the spinal motor program. (*A*) Electrical stimulation pulses (10 pulses at 1 Hz) in the *ex-vivo* adult zebrafish preparation (Fig. 3*A*) induce a long-lasting swimming episode. (*B*) Sample traces recordings obtained from six different Purkinje cells showing a locomotor related activity (current-clamp) of the Purkinje cell (gray traces) superimposed with the corresponding motor nerve recording (black traces).

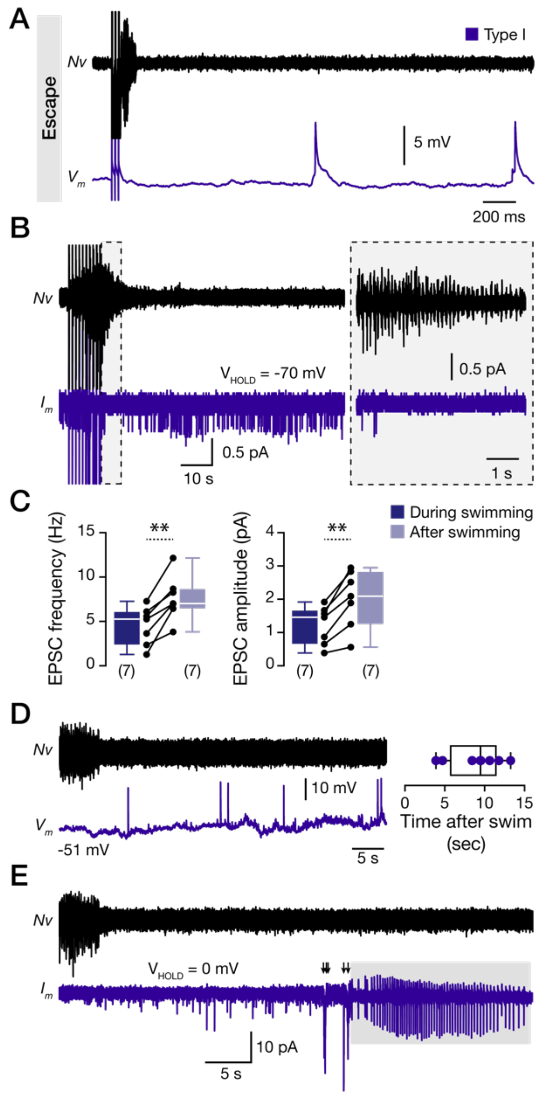

Fig. S7. Type I Purkinje cells are inactive during locomotion and escape. (*A*) Strong electrical stimulation pulses induced an escape response, but no firing observed from the type I Purkinje cell. (*B*) Voltage-clamp recordings show a significant reduction of excitatory inputs (EPSCs) in type I Purkinje cells during locomotion. (*C*) Quantification shows that after locomotion, the EPSC frequencies (P=0.0014, paired Student's t-test) and the EPSC amplitudes (P=0.0014, paired Student's t-test) increase significantly. (*D*) current-clamp recordings show a lack of firing from type I Purkinje cells during locomotion. All type I Purkinje cells discharge after fictive locomotion has ended. Plot of the first action potential after locomotion (n=7 cells). (*E*) Voltage-clamp recordings show the reduction of the EPSCs during locomotion, the increased activity observed after locomotion generating few sodium spikes (black arrows), and numerous calcium-based spikes (shaded gray area). EPSC, excitatory postsynaptic current. Data are presented as box plots showing the median with 25/75 percentile (box and line) and minimum–maximum (whiskers). **P<0.01. For detailed statistics, see *SI Appendix*, Table S1.

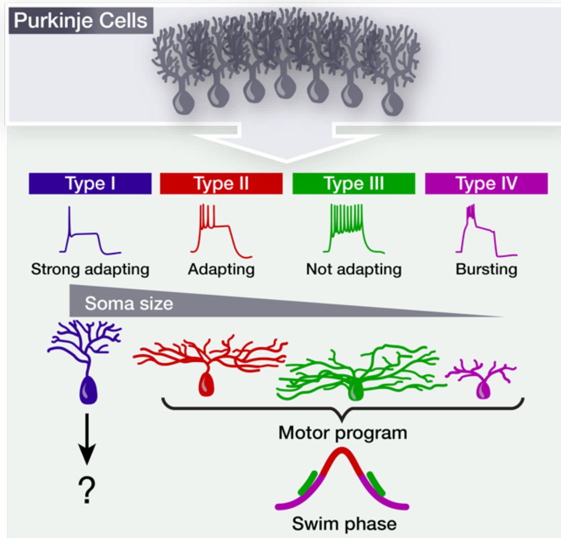

Fig. S8. Schematic summary of the significant findings and the proposed model for the Purkinje contribution in locomotion. Purkinje cells in the adult zebrafish cerebellum constitute four physiological and morphological distinct types, where the soma size can predict their type. Type II, III, and IV of Purkinje cells have a unique phase-locked activity during the locomotor cycle. Type I Purkinje cells are not active during locomotion, and they may encode the overall motor performance and might be necessary for motor learning.

Movie S1. 3-D Purkinje cell morphology. Reconstructed neurobiotin-filled Purkinje cell showing a 3-dimensional morphology.

Table S1. Detailed statistics.

Figure	Statistics	Result	Post-hoc Test	Comparison	Significance	*P* value
1*B*	Descriptive	Soma sizes: 54.34 ± 0.723 (*n* = 707 Purkinje cells)				
1*F*	*One-way* ANOVA	$F_{(3, 60)}$ = 56.89, *P* < 0.0001	Tukey's test	Type I-Type II	****	P_{adj} <0.0001
				Type I-Type III	****	P_{adj} <0.0001
				Type I-Type IV	****	P_{adj} <0.0001
				Type II-Type III	ns	P_{adj} = 0.2818
				Type II-Type IV	****	P_{adj} <0.0001
				Type III-Type IV	**	P_{adj} = 0.005
	Descriptive	Type I (*n* = 16 Purkinje): 11.33 ± 0.4527 Type II (*n* = 20 Purkinje): 7.74 ± 0.2521 Type III (*n* = 20 Purkinje): 7.04 ± 0.174 Type IV (*n* = 8 Purkinje): 5.25 ± 0.3145				
1*N* Dendritic terminals	*One-way* ANOVA	$F_{(3, 19)}$ = 0.0411			ns	*P* = 0.9885
	Descriptive	Type I (*n* = 6 Purkinje): 13.83 ± 1.701 Type II (*n* = 5 Purkinje): 14 ± 1.483 Type III (*n* = 9 Purkinje): 14.22 ± 1.011 Type IV (*n* = 3 Purkinje): 14.67 ± 2.404				
1*N* Dendritic area	*One-way* ANOVA	$F_{(3, 19)}$ = 9.733, *P* = 0.0004	Tukey's test	Type I-Type II	ns	P_{adj} = 0.3046
				Type I-Type III	***	P_{adj} = 0.0006
				Type I-Type IV	ns	P_{adj} = 0.9993
				Type II-Type III	ns	P_{adj} = 0.0688
				Type II-Type IV	ns	P_{adj} = 0.5300
				Type III-Type IV	**	P_{adj} = 0.0072
	Descriptive	Type I (*n* = 6 Purkinje): 1218 ± 414.8 Type II (*n* = 5 Purkinje): 3060 ± 598.5 Type III (*n* = 9 Purkinje): 5560 ± 762.4 Type IV (*n* = 3 Purkinje): 1363 ± 160.7				
1*N* Dendritic length	*One-way* ANOVA	$F_{(3, 19)}$ = 21.18, *P* < 0.0001	Tukey's test	Type I-Type II	*	P_{adj} = 0.0201
				Type I-Type III	****	P_{adj} < 0.0001
				Type I-Type IV	ns	P_{adj} = 0.9834
				Type II-Type III	*	P_{adj} = 0.0312
				Type II-Type IV	*	P_{adj} = 0.0311
				Type III-Type IV	****	P_{adj} < 0.0001
	Descriptive	Type I (*n* = 6 Purkinje): 309.4 ± 55.51 Type II (*n* = 5 Purkinje): 536 ± 49.33 Type III (*n* = 9 Purkinje): 731.3 ± 39.09 Type IV (*n* = 3 Purkinje): 280 ± 10.95				
2*C* Connectivity	Descriptive	Within types (*n* = 20): 70% Between types (*n* = 21): 80.95%				
2*C* Amplitude	Unpaired *t*-test	t = 1.335, df = 29 (Two-tailed)		Within types - Between types	ns	*P* = 0.1924
	Descriptive	Within types (*n* = 14): 0.042 ± 0.0019 Between types (*n* = 17): 0.038 ± 0.0023				
2*C* Distance	*Two-way* ANOVA	**Connectivity factor:** Connected vs not-connected: $F_{(1, 37)}$ = 3.941			ns	*P* = 0.0546
		Types factor: Within vs between types: $F_{(1, 37)}$ = 0.568			ns	*P* = 0.4555
		Interaction: $F_{(1, 37)}$ = 0.0034			ns	*P* = 0.9533
	Descriptive	**Connected:** Within types (*n* = 14): 30.73 ± 3.840 Between types (*n* = 17): 27.86 ± 1.903				
		Not-Connected: Within types (*n* = 6): 39.15 ± 4.186 Between types (*n* = 4): 35.8 ± 5.764				
2G	Descriptive	Within types (*n* = 14): 28.57% Between types (*n* = 17): 0%				

3*C*	*One-way* ANOVA	$F_{(3, 33)} = 8.563$, $P = 0.0002$	Tukey's test	Type I-Type II	**	$P_{adj} = 0.0038$
				Type I-Type III	**	$P_{adj} = 0.0073$
				Type I-Type IV	***	$P_{adj} = 0.0001$
				Type II-Type III	ns	$P_{adj} = 0.9914$
				Type II-Type IV	ns	$P_{adj} = 0.2589$
				Type III-Type IV	ns	$P_{adj} = 0.1713$
	Descriptive	Type I (*n* = 7 Purkinje): 0.00 ± 0.00 Type II (*n* = 12 Purkinje): 0.9021 ± 0.1458 Type III (*n* = 12 Purkinje): 0.8422 ± 0.1725 Type IV (*n* = 6 Purkinje): 1.378 ± 0.2432				
3*D*	*One-way* ANOVA	$F_{(3, 33)} = 19.57$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} < 0.0001$
				Type I-Type III	****	$P_{adj} < 0.0001$
				Type I-Type IV	ns	$P_{adj} = 0.9656$
				Type II-Type III	ns	$P_{adj} = 0.5751$
				Type II-Type IV	****	$P_{adj} < 0.0001$
				Type III-Type IV	***	$P_{adj} = 0.0006$
	Descriptive	Type I (*n* = 7 Purkinje): 0.044 ± 0.223 Type II (*n* = 12 Purkinje): 4.878 ± 0.669 Type III (*n* = 12 Purkinje): 4.023 ± 0.425 Type IV (*n* = 6 Purkinje): 0.466 ± 0.234				
Supplementary Figures						
S1*F* Velocity	Unpaired *t*-test	t = 7.432, df = 8685 (Two-tailed)		Control - BoTx	****	$P < 0.0001$
	Descriptive	Control (*n* = 24 zebrafish): 2.389 ± 0.0215 BoTx (*n* = 21 zebrafish): 2.111 ± 0.0309				
S1*F* μ velocity	Unpaired *t*-test	t = 2.112, df = 43 (Two-tailed)		Control - BoTx	*	$P = 0.0405$
	Descriptive	Control (*n* = 24 zebrafish): 2.222 ± 0.2446 BoTx (*n* = 21 zebrafish): 1.438 ± 0.2815				
S1*G* Immobility	Unpaired *t*-test	t = 3.543, df = 43 (Two-tailed)		Control - BoTx	***	$P = 0.001$
	Descriptive	Control (*n* = 24 zebrafish): 59.13 ± 15.76 BoTx (*n* = 21 zebrafish): 160.6 ± 24.77				
S1*G* Distance	Unpaired *t*-test	t = 2.818, df = 43 (Two-tailed)		Control - BoTx	**	$P = 0.0073$
	Descriptive	Control (*n* = 24 zebrafish): 910 ± 113.3 BoTx (*n* = 21 zebrafish): 453.1 ± 115.2				
S4 RMP	*One-way* ANOVA	$F_{(3, 60)} = 4.109$, $P = 0.0102$	Tukey's test	Type I-Type II	ns	$P_{adj} = 0.1172$
				Type I-Type III	ns	$P_{adj} = 0.9105$
				Type I-Type IV	ns	$P_{adj} = 0.3721$
				Type II-Type III	*	$P_{adj} = 0.0148$
				Type II-Type IV	ns	$P_{adj} = 0.9991$
				Type III-Type IV	ns	$P_{adj} = 0.1310$
	Descriptive	Type I (*n* = 16 Purkinje): -51.76 ± 2.759 Type II (*n* = 20 Purkinje): -45.82 ± 1.299 Type III (*n* = 20 Purkinje): -53.50 ± 1.746 Type IV (*n* = 8 Purkinje): -46.26 ± 0.7845				
S4 Rin	*One-way* ANOVA	$F_{(3, 60)} = 150.9$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} < 0.0001$
				Type I-Type III	****	$P_{adj} < 0.0001$
				Type I-Type IV	****	$P_{adj} < 0.0001$
				Type II-Type III	***	$P_{adj} = 0.0002$
				Type II-Type IV	****	$P_{adj} < 0.0001$
				Type III-Type IV	****	$P_{adj} < 0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 576.0 ± 10.54 Type II (*n* = 20 Purkinje): 747.7 ± 7.095 Type III (*n* = 20 Purkinje): 835.7 ± 7.799 Type IV (*n* = 8 Purkinje): 1134 ± 54.03				

S4 Sag	*One-way* ANOVA	$F_{(3, 60)} = 2.576$, $P = 0.0621$	Tukey's test	Type I-Type II	ns	$P_{adj} = 0.2553$
				Type I-Type III	ns	$P_{adj} = 0.9037$
				Type I-Type IV	ns	$P_{adj} = 0.9903$
				Type II-Type III	*	$P_{adj} = 0.0437$
				Type II-Type IV	ns	$P_{adj} = 0.6416$
				Type III-Type IV	ns	$P_{adj} = 0.8257$
	Descriptive	Type I (*n* = 16 Purkinje): 9.28 ± 1.225 Type II (*n* = 20 Purkinje): 12.84 ± 1.552 Type III (*n* = 20 Purkinje): 7.979 ± 1.245 Type IV (*n* = 8 Purkinje): 10.03 ± 1.189				
S4 Sodium APs rheobase	*One-way* ANOVA	$F_{(3, 60)} = 230.6$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} < 0.0001$
				Type I-Type III	****	$P_{adj} < 0.0001$
				Type I-Type IV	****	$P_{adj} < 0.0001$
				Type II-Type III	****	$P_{adj} < 0.0001$
				Type II-Type IV	****	$P_{adj} < 0.0001$
				Type III-Type IV	****	$P_{adj} < 0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 23.69 ± 0.6862 Type II (*n* = 20 Purkinje): 8.315 ± 0.5075 Type III (*n* = 20 Purkinje): 11.73 ± 0.276 Type IV (*n* = 8 Purkinje): 3.088 ± 0.6932				
S4 Sodium APs threshold	*One-way* ANOVA	$F_{(3, 60)} = 2.789$, $P = 0.0482$	Tukey's test	Type I-Type II	ns	$P_{adj} = 0.1844$
				Type I-Type III	*	$P_{adj} = 0.0354$
				Type I-Type IV	ns	$P_{adj} = 0.8149$
				Type II-Type III	ns	$P_{adj} = 0.8609$
				Type II-Type IV	ns	$P_{adj} = 0.8865$
				Type III-Type IV	ns	$P_{adj} = 0.5546$
	Descriptive	Type I (*n* = 16 Purkinje): -39.76 ± 2.724 Type II (*n* = 20 Purkinje): -44.62 ± 1.304 Type III (*n* = 20 Purkinje): -46.38 ± 1.109 Type IV (*n* = 8 Purkinje): -42.46 ± 1.483				
S4 Sodium APs amplitude	*One-way* ANOVA	$F_{(3, 60)} = 2.863$, $P = 0.0442$	Tukey's test	Type I-Type II	*	$P_{adj} = 0.0295$
				Type I-Type III	ns	$P_{adj} = 0.7314$
				Type I-Type IV	ns	$P_{adj} = 0.6509$
				Type II-Type III	ns	$P_{adj} = 0.2264$
				Type II-Type IV	ns	$P_{adj} = 0.7025$
				Type III-Type IV	ns	$P_{adj} = 0.9813$
	Descriptive	Type I (*n* = 16 Purkinje): 8.575 ± 0.4988 Type II (*n* = 20 Purkinje): 11.68 ± 0.842 Type III (*n* = 20 Purkinje): 9.699 ± 0.7432 Type IV (*n* = 8 Purkinje): 10.21 ± 1.289				
S4 Sodium APs delay	*One-way* ANOVA	$F_{(3, 60)} = 276.6$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} < 0.0001$
				Type I-Type III	****	$P_{adj} < 0.0001$
				Type I-Type IV	ns	$P_{adj} = 0.1050$
				Type II-Type III	****	$P_{adj} < 0.0001$
				Type II-Type IV	****	$P_{adj} < 0.0001$
				Type III-Type IV	****	$P_{adj} < 0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 20.75 ± 0.9598 Type II (*n* = 20 Purkinje): 188.3 ± 3.184 Type III (*n* = 20 Purkinje): 133.0 ± 3.054 Type IV (*n* = 8 Purkinje): 39.85 ± 15.86				
S4 Sodium APs frequency	*One-way* ANOVA	$F_{(3, 60)} = 562.9$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} < 0.0001$
				Type I-Type III	****	$P_{adj} < 0.0001$
				Type I-Type IV	****	$P_{adj} < 0.0001$
				Type II-Type III	****	$P_{adj} < 0.0001$
				Type II-Type IV	****	$P_{adj} < 0.0001$
				Type III-Type IV	****	$P_{adj} < 0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 0.5 ± 0.0 Type II (*n* = 20 Purkinje): 14.30 ± 0.7578 Type III (*n* = 20 Purkinje): 29.20 ± 0.9222 Type IV (*n* = 8 Purkinje): 80.50 ± 3.698				

S4 Calcium spikes rheobase	*One-way* ANOVA	$F_{(3, 60)} = 78.09$, $P < 0.0001$	Tukey's test	Type I-Type II	****	$P_{adj} <0.0001$
				Type I-Type III	****	$P_{adj} <0.0001$
				Type I-Type IV	****	$P_{adj} <0.0001$
				Type II-Type III	ns	$P_{adj} = 0.2080$
				Type II-Type IV	***	$P_{adj} = 0.0003$
				Type III-Type IV	****	$P_{adj} <0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 47.88 ± 1.151 Type II (*n* = 20 Purkinje): 21.45 ± 2.091 Type III (*n* = 20 Purkinje): 25.55 ± 1.175 Type IV (*n* = 8 Purkinje): 9.375 ± 1.164				
S4 Calcium spikes threshold	*One-way* ANOVA	$F_{(3, 60)} = 17.57$, $P < 0.0001$	Tukey's test	Type I-Type II	*	$P_{adj} = 0.0303$
				Type I-Type III	**	$P_{adj} = 0.0014$
				Type I-Type IV	ns	$P_{adj} = 0.9045$
				Type II-Type III	****	$P_{adj} <0.0001$
				Type II-Type IV	ns	$P_{adj} = 0.4001$
				Type III-Type IV	**	$P_{adj} = 0.0017$
	Descriptive	Type I (*n* = 16 Purkinje): -17.04 ± 1.225 Type II (*n* = 20 Purkinje): -22.07 ± 1.526 Type III (*n* = 20 Purkinje): -10.14 ± 0.6916 Type IV (*n* = 8 Purkinje): -18.59 ± 2.084				
S4 Calcium spikes amplitude	*One-way* ANOVA	$F_{(3, 60)} = 3.605$, $P = 0.0184$	Tukey's test	Type I-Type II	ns	$P_{adj} = 0.1047$
				Type I-Type III	ns	$P_{adj} = 0.9513$
				Type I-Type IV	ns	$P_{adj} = 0.9970$
				Type II-Type III	*	$P_{adj} = 0.0187$
				Type II-Type IV	ns	$P_{adj} = 0.1748$
				Type III-Type IV	ns	$P_{adj} = 0.9964$
	Descriptive	Type I (*n* = 16 Purkinje): 14.37 ± 0.6165 Type II (*n* = 20 Purkinje): 12.66 ± 0.5126 Type III (*n* = 20 Purkinje): 14.76 ± 0.4585 Type IV (*n* = 8 Purkinje): 14.56 ± 0.5618				
S4 Calcium spikes delay	*One-way* ANOVA	$F_{(3, 60)} = 2.710$			ns	$P = 0.053$
	Descriptive	Type I (*n* = 16 Purkinje): 1085 ± 193.4 Type II (*n* = 20 Purkinje): 825.9 ± 107.5 Type III (*n* = 20 Purkinje): 1391 ± 189.5 Type IV (*n* = 8 Purkinje): 1471 ± 255.9				
S4 Calcium spikes frequency	*One-way* ANOVA	$F_{(3, 60)} = 55.61$, $P < 0.0001$	Tukey's test	Type I-Type II	ns	$P_{adj} = 0.3629$
				Type I-Type III	****	$P_{adj} <0.0001$
				Type I-Type IV	**	$P_{adj} = 0.0013$
				Type II-Type III	****	$P_{adj} <0.0001$
				Type II-Type IV	*	$P_{adj} = 0.0388$
				Type III-Type IV	****	$P_{adj} <0.0001$
	Descriptive	Type I (*n* = 16 Purkinje): 7.421 ± 0.5361 Type II (*n* = 20 Purkinje): 6.555 ± 0.4249 Type III (*n* = 20 Purkinje): 1.325 ± 0.1488 Type IV (*n* = 8 Purkinje): 4.750 ± 0.2018				
S7*C* Frequency	Paired *t*-test	t = 5.596, df = 6 (Two-tailed)		During - After swimming	**	$P = 0.0014$
	Descriptive	During swimming (*n* = 7 Purkinje): 4.508 ± 0.811 After swimming (*n* = 7 Purkinje): 7.624 ± 0.9576				
S7*C* Amplitude	Paired *t*-test	t = 5.576, df = 6 (Two-tailed)		During - After swimming	**	$P = 0.0014$
	Descriptive	During swimming (*n* = 4 Purkinje): 1.217 ± 0.218 After swimming (*n* = 4 Purkinje): 2.014 ± 0.327				
S7*D*	Descriptive	8.968 ± 1.149				