Supplementary materials

Table S1. Scan parameters for T1-weighted images of *H. portusjacksoni*. TR: repetition time; TE: echo time; NEX: number of excitations (or averages).

ID code	TR (ms)	TE (ms)	Flip angle (°)	NEX	Resolution (μm)	Scan time
02A	60	8.76	63	4	70	15h, 12 min
07A	60	7.30	65	3	90	5h, 39 min
10A	60	8.68	66	5	75	14h, 30 min
03E	60	8.60	68	5	60	14h, 19 min
07E	60	7.00	66	3	90	5h, 20 min
09E	60	7.24	68	3	80	5h, 41 min

Table S2. Results of the best-fit model for each PNS region. Two different candidate models of peripheral nervous system volume were tested, using the variables of region volume ~ body weight (model 1) and $\log_{10}$ region volume ~ $\log_{10}$ body weight (model 2). The best-fit model for each PNS region, as determined by AICc score, is shown in bold. AICc, corrected Akaike information criterion; OR, olfactory rosette.

	Eyes	**OR**
region volume ~ body weight		
AICc	79.1	78.6
ΔAICc	89.64	79.14
Weight	0	0
$\log_{10}$ region volume ~ $\log_{10}$ body weight		
AICc	-10.6	-0.6
ΔAICc	0	0
Weight	**1**	**1**

Table S3. Results of the best-fit model for the total brain. Two different candidate models of total brain mass were tested, using the variables of region volume ~ body weight (model 1) and $\log_{10}$ region volume ~ $\log_{10}$ body weight (model 2). The best-fit model for total brain weight, as determined by AICc score, is shown in bold. AICc, corrected Akaike information criterion.

	Total brain
brain weight ~ body weight	
AICc	-66.4
ΔAICc	27
Weight	0
$\log_{10}$ brain weight ~ $\log_{10}$ body weight	
AICc	-39.4
ΔAICc	0
Weight	**1**

Table S4. Results of the best-fit model for each brain region. Two different candidate models of brain region mass were tested, using the variables of brain region weight ~ total brain weight (model 1) and $\log_{10}$ brain region weight ~ $\log_{10}$ total brain weight (model 2). The best-fit model for each region, as determined by AICc score, is shown in bold. AICc, corrected Akaike information criterion; CER, cerebellum; DI, diencephalon; MED, medulla oblongata; OB, olfactory bulb; OT, optic tectum; TE, telencephalon; TEG, tegmentum.

	OB	**TE**	**DI**	**OT**	**TEG**	**CER**	**MED**
brain region weight ~ total brain weight							
AICc	-117.6	-119.3	-159.7	-159.5	-143.2	-159.8	-133.8
ΔAICc	0	0	0	0	0	0	0
Weight	**1**	**0.90**	**1**	**1**	**1**	**1**	**1**
$\log_{10}$ brain region weight ~ $\log_{10}$ total brain weight							
AICc	-35.9	-114.9	-83.3	-55.4	-36.2	-94.5	-87.3
ΔAICc	81.66	4.44	76.43	104.05	106.95	65.25	46.49
Weight	0	0.10	0	0	0	0	0