

SUPPLEMENTARY FILES

Don't lose your head over the unequal regeneration capacity in prolethophoran flatworms

Alexandra L. Grosbsuch¹, Philip Bertemes¹, Bob Kauffmann¹, Clemens Gotsis¹ and Bernhard Egger^{1,*}

Submitted to Biology

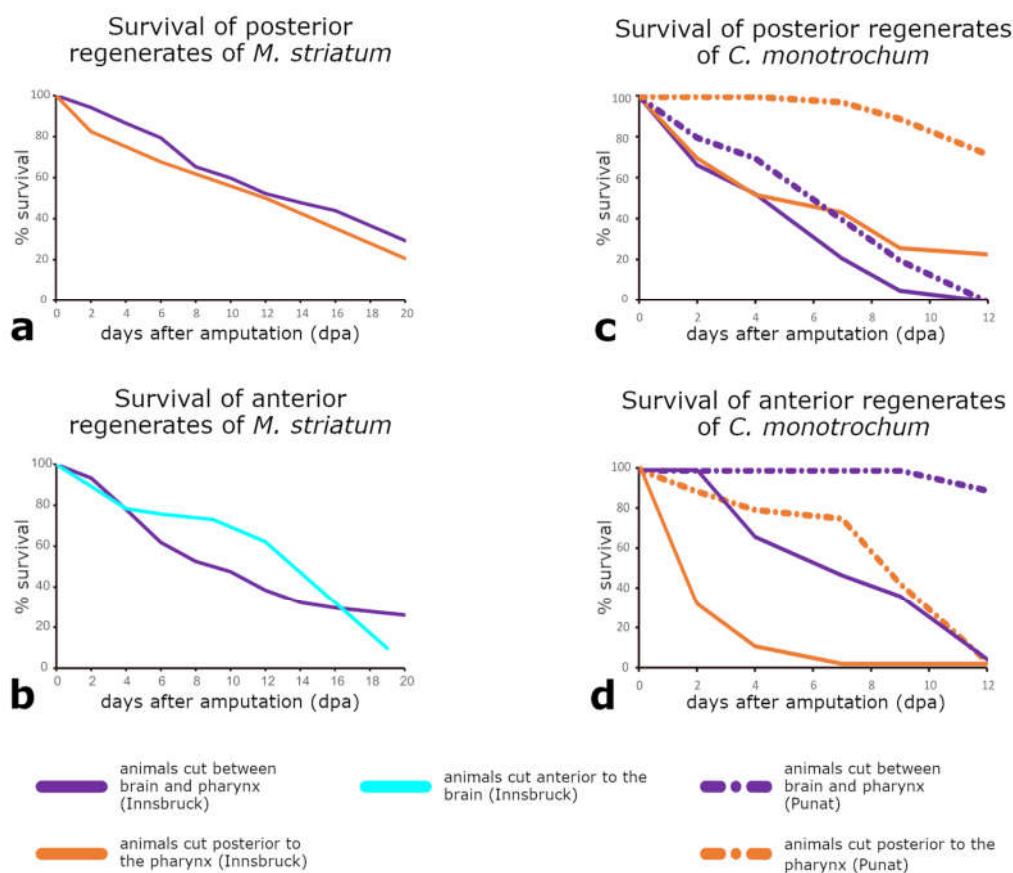


Figure S1: Survival curves of regenerates of *Monoophorum striatum* and *Cylindrostoma monotrochum*. Survival rates of posterior (a) and anterior regenerates (b) of *M. striatum* over the course of 20 days after amputation at their respective amputation level. Survival rates of posterior (c) and anterior regenerates (d) over the course of 12 days after amputation at their respective amputation level. Note that dashed lines were regeneration experiments carried out in the field (animals fresh from the sea and daily fresh sea water vs. animals that had to be transported to the facilities in Austria and were kept in artificial sea water).

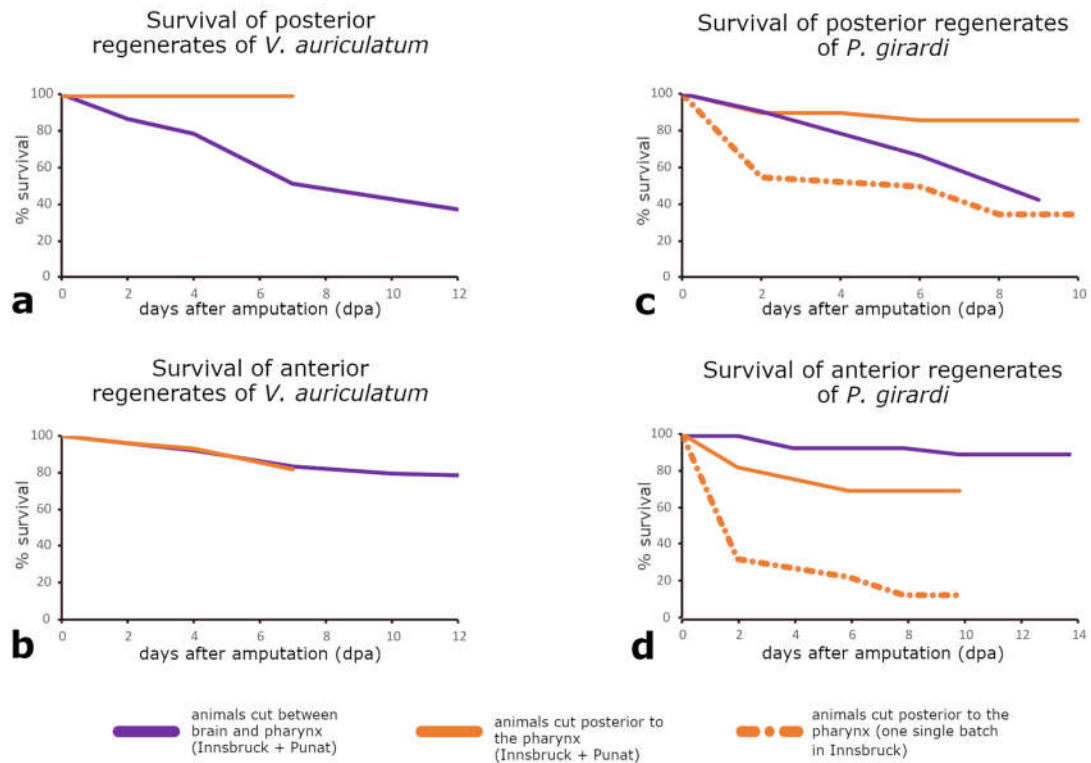


Figure S2: Survival curves of regenerates of *Vorticeros auriculatum* and *Plagiostomum girardi*. Survival rates of posterior (a) and anterior regenerates (b) of *V. auriculatum* over the course of 12 days after amputation at their respective amputation level. Survival rates of posterior (c) and anterior regenerates (d) of *P. girardi* over the course of 10 and 14 days after amputation at their respective amputation level. Dashed lines represent a regeneration experiment carried out in the lab in Innsbruck, where the only deviating survival rates were found.

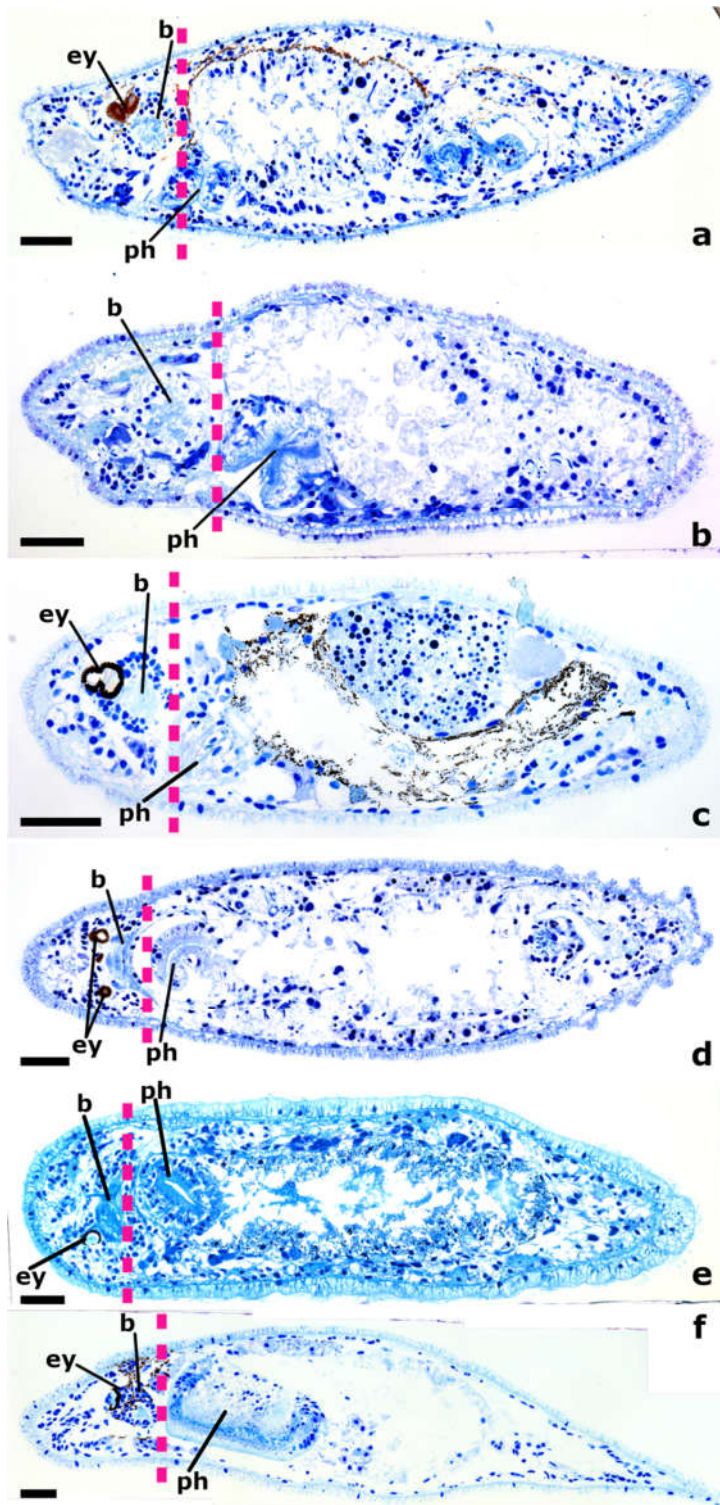


Figure S3: Histological sections of intact animals of all analysed plagiostomid species. Bright field image of histological sections stained with toluidine blue of *V. auriculatum* (a), *P. morgani* (b), *P. chromogastrum* (c), *P. koreni* (d), *P. girardi* (e) and *P. maculatum* (f). a - c and f are lateral views, d - e are dorsal views. Anterior is left for all animals. The pink, dashed lines indicate the amputation level. Abbreviations: b, brain; ey, eyes; ph, pharynx. Scale bar is 50 μ m.

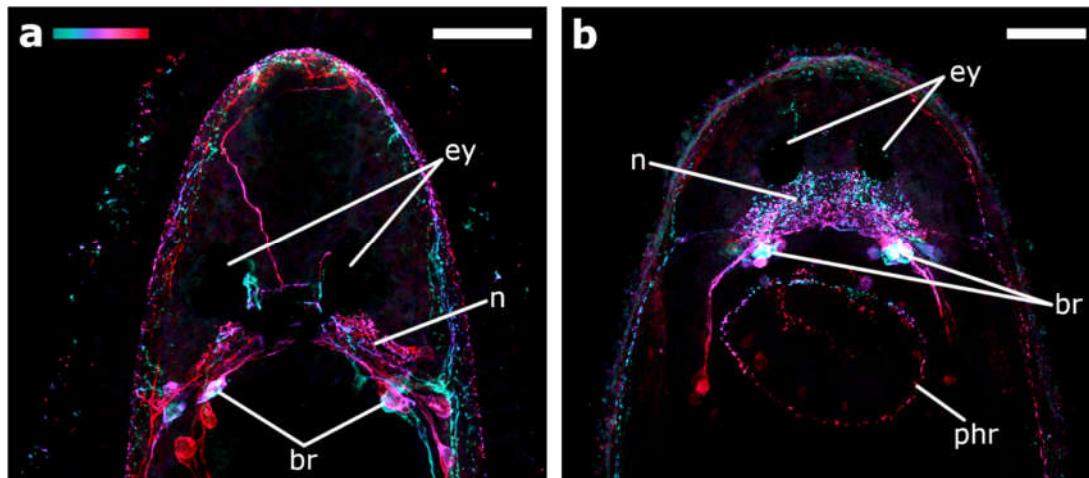


Figure S4: Serotonergic nervous system of intact animals of *P. koreni* and *P. girardi*. Depth colour coded image of a dorsal view of the head region of *P. koreni* (a) and *P. girardi* (b). Turquoise is more dorsal, red more ventral. Anterior is up for all animals. Abbreviations: br, brain roots; ey, eyes; n, neuropile; phr, pharyngeal nerve ring. Scale bar is 50 μm .

Table S1. Sequences used for phylogenetic reconstruction shown in Fig. 14. Bold species names indicate new sequences provided for this publication.

Family	Species name	18S accession number	28S accession number
Dugesiidae	<i>Schmidtea mediterranea</i>	U31084.1	DQ665992.1
Plagiostomidae	<i>Acmostomum dioicum</i>	OP627012	OP626914
	<i>Acmostomum dioicum</i>	AF503516.1	
	<i>Plagiostomum chromogastrum</i>	OP627003	
	<i>Plagiostomum cinctum</i>	AF065418.1	AJ313224.1
	<i>Plagiostomum girardi</i>	OP627009	OP626912
	<i>Plagiostomum koreni</i>	OP627005	OP626904
	<i>Plagiostomum lemani</i>	AF503518.1	
	<i>Plagiostomum maculatum</i>	OP627006	OP626909
	<i>Plagiostomum morgani</i>	OP627007	OP626906
	<i>Plagiostomum ochroleucum</i>	AF065419.1	AJ313225.1
	<i>Plagiostomum</i> sp.	OP627004	OP626905
	<i>Plagiostomum stellatum</i>	KC869819.1	KC869872.1
	<i>Plagiostomum striatum</i>	AF065420.1	AJ313226.1
	<i>Plagiostomum vittatum</i>	AF065421.1	AJ313227.1
	<i>Plagiostomum whitmani</i>	KC869818.1	KC869871.1
	<i>Plicastoma cuticulata</i>	AF065422.1	AY157158.1
	<i>Torgea phuketensis</i>	AF503517.1	
	<i>Vorticeros auriculatum</i>	OP627011	OP626913
	<i>Vorticeros auriculatum</i>	AJ312267.1	AJ313229.1
	<i>Vorticeros iijimai</i>	D85094.1	
Protomonotresidae	<i>Acanthiella</i> sp.	KC869786.1	KC869839.1
	<i>Baicalarctica gula</i>	AJ287483.1	
	<i>Friedmaniella</i> cf <i>rufula</i>	AJ287512.1	
	<i>Friedmaniella karlinigi</i>	AJ287513.1	
	<i>Protomonotresis centrophora</i>	AF167419.1	AJ313218.1
	<i>Protomonotresidae</i> sp.	OP627000	OP626908
	<i>Protomonotresidae</i> sp.	KC869820.1	KC869873.1
Pseudostomidae	<i>Allostoma catinosum</i>	AJ312267.1	MK791299.1
	<i>Allostoma neostiliferum</i>	AF167420.1	
	<i>Allostoma pallidum</i>	AJ312265.1	AJ313214.1
	<i>Cylindrostoma fingsalianum</i>	AF065415.1	AJ313215.1
	<i>Cylindrostoma gracilis</i>	AF065416.1	AJ313216.1
	<i>Cylindrostoma monotrochum</i>	OP627002	OP626907
	<i>Cylindrostoma monotrochum</i>		AJ313217.1
	<i>Cylindrostoma</i> cf <i>paralutheri</i>	AJ312266.1	AJ313223.1
	<i>Cylindrostoma</i> sp.	OP627001	OP626910
	<i>Euxinia baltica</i>	AF167418.1	
	<i>Euxinia</i> sp.		MK791291.1
	<i>Monooporum striatum</i>	OP627008	OP626911
	<i>Monooporum</i> sp.	OP627010	OP626915
	<i>Pseudostomum gracilis</i>	AF065423.1	

	<i>Pseudostomum klostermanni</i>	AF065424.1	AJ313219.1
	<i>Pseudostomum quadrioculatum</i>	AF065425.1	
	<i>Reisingeria hexaoculata</i>	AF065426.1	AJ313220.1
	<i>Ulianinia mollissima</i>	AF065427.1	AJ313222.1
Scleraulophoridae	<i>Scleraulophorus cephalatus</i>	AF167423.1	AJ313221.1