

Supplementary Materials

Baltic sculpin *Cottus microstomus* as a host for larvae of two species belonging to *Unio crassus*

complex: *Unio crassus* Philipsson, 1788 and *Unio nanus* Lamarck, 1819

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Tab. 1

p-values of pairwise contrasts post-hoc test for performed repeated Measures generalized Linear Model (log, Poisson) of the total number of juveniles collected in each control (aggregated for both species); DPI – days post infestation of fish

DPI	26	29	33	37	40
22	<0.00001	<0.00001	0.052	<0.001	<0.00001
26	-	0.000001	<0.00001	<0.00001	<0.00001
29		-	<0.00001	<0.00001	<0.00001
33			-	<0.0001	<0.00001
37				-	0.278

Tab. 2

Results of pairwise contrasts post-hoc test for performed repeated Measures generalized Linear Model (log, Poisson) of the differences in number of juveniles collected in given control between both host species (*P. phoxinus* and *C. microstomus*); DPI – days post infestation of fish

DPI	22	26	29	33	37	40
F	20.93	0.486	9.29	14.92	1.50	7.29
df1	1	1	1	1	1	1
df2	119	119	119	119	119	119
p	<0.0001	0.487	0.003	<0.001	0.224	0.008

Tab. 3

Estimates of evolutionary divergence between COI sequences of *U. crassus* complex; references: A - Kilikowska et al. 2020, B - Lopes-Lima et al. 2021, C - Lopes-Lima et al. 2024; **the referenced citations are included in the main text of the manuscript, in the "Literature" section**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 <i>Unio</i> sp._population from Warkocz River (GenBank: KJ525912; A)														
2 <i>Unio</i> sp._population from Warkocz River (GenBank: KJ525917; A)	0.028													
3 <i>Unio bruguierianus</i> (GenBank: OR841700; C)	0.028	0.023												
4 <i>Unio carneus</i> (GenBank: OR841723; C)	0.028	0.033	0.034											
5 <i>Unio crassus</i> (GenBank: OR841742; C)	0.028	0.003	0.026	0.036										
6 <i>Unio damascensis</i> (GenBank: MZ512319; B)	0.042	0.031	0.034	0.050	0.034									
7 <i>Unio desectus</i> (GenBank: OR841909; C)	0.046	0.037	0.039	0.050	0.041	0.037								
8 <i>Unio gontierii</i> (GenBank: OR841920; C)	0.031	0.010	0.026	0.039	0.010	0.034	0.044							
9 <i>Unio ionicus</i> (GenBank: OR841937; C)	0.042	0.041	0.037	0.054	0.044	0.042	0.044	0.044						
10 <i>Unio mardinensis</i> (GenBank: MZ512235; B)	0.034	0.028	0.013	0.036	0.031	0.044	0.046	0.034	0.044					
11 <i>Unio nanus</i> (GenBank: OR841968; C)	0.010	0.031	0.031	0.031	0.031	0.042	0.049	0.034	0.042	0.037				
12 <i>Unio sesirmensis</i> (GenBank: MZ512281; B)	0.062	0.057	0.057	0.075	0.057	0.055	0.050	0.060	0.062	0.067	0.062			
13 <i>Unio tumidiformis</i> (GenBank: OR842147; C)	0.083	0.078	0.072	0.093	0.081	0.088	0.075	0.085	0.088	0.072	0.086	0.094		
14 <i>Unio vicarius</i> (GenBank: OR842153; C)	0.023	0.023	0.020	0.033	0.023	0.039	0.042	0.026	0.042	0.023	0.029	0.062	0.080	

Tab. 4

Reference to cited literature on host suitability for larvae *U. crassus* complex (comparisons between *C. gobio* and *P. phoxinus*); A – results obtained from artificial infestation, N – results obtained from natural infestation; DPI – days post infestation; *- only data from a trial performed concurrently with *C. gobio* were considered in the table; where possible, data from the present study were presented in the same format as in the cited studies for comparison; the referenced **citations** are included in the main text of the manuscript, in the "Literature" section

parameter	host species	value	reference
mean prevalence	<i>C. gobio</i> N	30.6% (range 0-73%	Lamand et al. 2016
		in various sites)	
	<i>P. phoxinus</i> N	51.3% (range 15-100%	
		in various sites)	
encapsulated glochidia density per area of stream	<i>C. gobio</i> N	11.9 glochidia*m ⁻² (SD=28.3	Schneider et al. 2018
		glochidia*m ⁻²)	
	<i>P. phoxinus</i> N	14.1 glochidia*m ⁻² (SD=24.6	
		glochidia*m ⁻²)	
mean number of glochidia attached per fish (undetermined phase of encystment)	<i>C. gobio</i> N	2.92 gloch./fish	Lamand et al. 2016
	<i>P. phoxinus</i> N	4.42 gloch./fish	
	<i>C. gobio</i> N	4.8 gloch./fish (SD=8.5	Schneider et al. 2018
		gloch./fish)	

		8.6 gloch./fish	
	<i>P. phoxinus</i> N	(SD=10.8	
		gloch./fish)	
	<i>C. gobio</i> A	365 gloch./fish	Douda et al.
	<i>P. phoxinus</i> A*	204 gloch/fish	2012
		76.5 gloch./fish	
	<i>C. gobio</i> A	(SD=83.4	
		gloch./fish)	Taeubert et al.
mean number of		175 gloch./fish	2012a
glochidia attached per	<i>P. phoxinus</i> A	(SD=43.9	
fish (initial phase of		gloch./fish)	
encystment)	<i>C. gobio</i> A	29.0 gloch/fish	
	<i>P. phoxinus</i> A group1	218.9 gloch/fish	Taeubert et al.
	<i>P. phoxinus</i> A	63.5 gloch/fish	2012b
	group2		
	<i>P. phoxinus</i> A group3	49.0 gloch/fish	
		9.2 gloch./g fish	
	<i>C. gobio</i> A	weight (SD=8.1	
		gloch./g fish	
mean number of		weight)	Taeubert et al.
glochidia attached per g		41.5 gloch./g fish	2012a
fish weight (initial	<i>P. phoxinus</i> A	weight (SD=11.4	
phase of encystment)		gloch./g fish	
		weight)	
	<i>C. gobio</i> A	3.7 gloch./g fish	Taeubert et al.
		weight	2012b

	<i>P. phoxinus</i> A group1	53.0 gloch./g fish weight	
	<i>P. phoxinus</i> A group2	13.7 gloch./g fish weight	
	<i>P. phoxinus</i> A group3	10.3 gloch./g fish weight	
		5.3 gloch./fish	
mean number of glochidia attached per fish, 16 DPI	<i>C. gobio</i> A	(SD=4.4 gloch./fish)	Taeubert et al. 2012a
	<i>P. phoxinus</i> A	87.2 gloch./fish (SD=23.3 gloch./fish)	
mean number of glochidia attached per g fish weight, 16 DPI	<i>C. gobio</i> A	1.0 gloch./g fish weight (SD=1.0 gloch./g fish weight)	Taeubert et al. 2012a
	<i>P. phoxinus</i> A	24.5 gloch./g fish weight (SD=7.4 gloch./g fish weight)	
mean weight-normalized glochidia loss, 16 DPI	<i>C. gobio</i> A	89%	Taeubert et al. 2012a
	<i>P. phoxinus</i> A	41%	
weight-normalized glochidia loss, 22 DPI	<i>C. gobio</i> A	62%	Taeubert et al. 2012b
	<i>P. phoxinus</i> A group1	52%	
	<i>P. phoxinus</i> A group2	65%	

	<i>P. phoxinus</i> A group3	39%	
	<i>C. gobio</i> A	95%	
weight-normalized	<i>P. phoxinus</i> A group1	89%	Taeubert et al.
glochidia loss at the	<i>P. phoxinus</i> A group2	99%	2012b
end of excystation	<i>P. phoxinus</i> A group3	81%	
Transformation rate	<i>C. gobio</i> A	57.3%	
(proportion of			Douda et al.
successfully	<i>P. phoxinus</i> A*	61.4%	2012
transformed glochidia)			
	<i>C. gobio</i> A	~ 209 juv./fish	Douda et al.
	<i>P. phoxinus</i> A*	~ 125 juv./fish	2012
	<i>C. gobio</i> A	1.0 juv./fish	
	<i>P. phoxinus</i> A group1	29.4 juv./fish	Taeubert et al.
	<i>P. phoxinus</i> A	1.5 juv./fish	2012b
mean number of viable	group2		
juveniles per fish	<i>P. phoxinus</i> A group3	11 juv./fish	
	<i>C. microstomus</i> A	82.2 juv./fish (SD=27.3 juv./fish)	
		114.1 juv./fish	this study
	<i>P. phoxinus</i> A	(SD= 63.7 juv./fish)	
	<i>C. gobio</i> A	0.2 juv./g fish	
mean number of viable		weight	Taeubert et al.
juveniles per g fish		5.9 juv./g fish	2012b
weight	<i>P. phoxinus</i> A group1	weight	

	<i>P. phoxinus</i> A	0.2 juv./g fish	
	group2	weight	
		2.0 juv./g fish	
	<i>P. phoxinus</i> A group3	weight	
		21.3 juv./g fish	
	<i>C. microstomus</i> A	weight (SD=15.1	
		juv./g fish weight)	this study
		35.6 juv./g fish	
	<i>P. phoxinus</i> A	weight (SD=24.1	
		juv./g fish weight)	
	<i>C. gobio</i> A	25 DPI	
	<i>P. phoxinus</i> A group		
	1	28 DPI	
			Taeubert et al.
	<i>P. phoxinus</i> A group		
	2	29 DPI	2012b
start point of juvenile			
mussels excystment	<i>P. phoxinus</i> A group		
	3	32 DPI	
	<i>C. microstomus</i> A	between 19 and 22	
		DPI	
			this study
	<i>P. phoxinus</i> A	between 19 and 26	
		DPI	
	<i>C. gobio</i> A	38 DPI	
	<i>P. phoxinus</i> A group		
end point of juvenile		59 DPI	Taeubert et al.
mussels excystment	1		2012b
	<i>P. phoxinus</i> A group		
	2	38 DPI	

	<i>P. phoxinus</i> A group	55 DPI	
	3		
	<i>C. microstomus</i> A	between 33 and 40 DPI	this study
	<i>P. phoxinus</i> A	between 29 and 40 DPI	
parasitism duration (including shed glochidia)	<i>C. gobio</i> A	14.8 days (SD=7.6 days)	Douda et al. 2012
	<i>P. phoxinus</i> A*	16.2 days (SD=9.9 days)	
	<i>C. gobio</i> A	19.9 days (SD=3 days)	Douda et al. 2012
successful parasitism duration (only successfully transformed glochidia)	<i>P. phoxinus</i> A*	23 days (SD=1.8 days)	
	<i>C. microstomus</i> A	26.9 days (SD=3.9 days)	this study
	<i>P. phoxinus</i> A	28.39 days (SD=3.5 days)	
