

Bulletin of Insectology Supplemental Material

Title: ***Wolbachia* prevalence and diversity in selected riverine predatory beetles (Bembidiini and Paederini)**

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Table S1. Accession numbers of Cytochrome Oxidase gene subunit 1 (*COXI*), Arginine Kinase gene (*ArgK*) and *Wolbachia* genes from Multilocus Sequence Typing genotyping system (*gatB*, *coxA*, *hcpA*, *ftsZ*, *fbpA*) generated from selected rove and ground beetles deposited in GenBank (<https://www.ncbi.nlm.nih.gov/genbank/>) and used in the study.

Table S2. Results of comparison of *Wolbachia* genes and genotypes (based on 5 genes of Multilocus Sequence Typing) with GenBank and *Wolbachia* MLST databases with use of Basic Alignment Search tool (BLAST). Host species in which most similar genes or strains were found are presented. GB acc.no. - GenBank accession numbers.

Table S3. Basic statistics of genetic diversity (Cytochrome Oxidase gene subunit I, *COXI* and Arginine Kinase gene, *ArgK*) calculated for all sampled sites (river catchments) with populations of selected riverine beetle species. Hn - haplotype number, P - number of polymorphic sites, Hdiv - haplotype diversity, π div - nucleotide diversity, SD - standard deviation.

Table S1. Accession numbers of Cytochrome Oxidase gene subunit 1 (*COXI*), Arginine Kinase gene (*ArgK*) and Wolbachia genes from Multilocus Sequence Typing genotyping system (*gatB*, *coxA*, *hcpA*, *ftsZ*, *fbpA*) generated from selected rove and ground beetles deposited in GenBank (<https://www.ncbi.nlm.nih.gov/genbank/>) and used in the study.

Species	Gene	GenBank numbers
<i>Paederus limnophilus</i>	<i>COXI</i>	MF170697 - MF170700
	<i>ArgK</i>	MF170730 - MF170733
	<i>gatB</i>	MF170752 - MF170753
	<i>coxA</i>	MF170766 - MF170767
	<i>hcpA</i>	MF170780 - MF170781
	<i>ftsZ</i>	MF170794 - MF170795
	<i>fbpA</i>	MF170808 - MF170809
<i>Paederidus ruficollis</i>	<i>COXI</i>	MF170701 - MF170707
	<i>ArgK</i>	MF170734 - MF170737
	<i>gatB</i>	MF170754 - MF170755
	<i>coxA</i>	MF170768 - MF170769
	<i>hcpA</i>	MF170782 - MF170783
	<i>ftsZ</i>	MF170796 - MF170797
	<i>fbpA</i>	MF170810 - MF170811
<i>Paederidus rubrothoracicus</i>	<i>COXI</i>	MF170708 - MF170712
	<i>ArgK</i>	MF170738 - MF170741
	<i>gatB</i>	-
	<i>coxA</i>	-
	<i>hcpA</i>	-
	<i>ftsZ</i>	-
	<i>fbpA</i>	-
<i>Bembidion varicolor</i>	<i>COXI</i>	MF170678 - MF170681
	<i>ArgK</i>	MF170713 - MF170716
	<i>gatB</i>	MF170742 - MF170747
	<i>coxA</i>	MF170756 - MF170761
	<i>hcpA</i>	MF170770 - MF170775
	<i>ftsZ</i>	MF170784 - MF170789
	<i>fbpA</i>	MF170798 - MF170803
<i>Bembidion decorum</i>	<i>COXI</i>	MF170682 - MF170685
	<i>ArgK</i>	MF170717 - MF170721
	<i>gatB</i>	-
	<i>coxA</i>	-
	<i>hcpA</i>	-
	<i>ftsZ</i>	-
	<i>fbpA</i>	-
<i>Bembidion modestum</i>	<i>COXI</i>	MF170686 - MF170690
	<i>ArgK</i>	MF170722 - MF170725
	<i>gatB</i>	-
	<i>coxA</i>	-
	<i>hcpA</i>	-
	<i>ftsZ</i>	-
	<i>fbpA</i>	-
<i>Bembidion punctulatum</i>	<i>COXI</i>	MF170691 - MF170696
	<i>ArgK</i>	MF170726 - MF170729
	<i>gatB</i>	MF170748 - MF170751
	<i>coxA</i>	MF170762 - MF170765
	<i>hcpA</i>	MF170776 - MF170779
	<i>ftsZ</i>	MF170790 - MF170793
	<i>fbpA</i>	MF170804 - MF170807

Table S2. Results of comparison of *Wolbachia* genes and genotypes (based on 5 genes of Multilocus Sequence Typing) with GenBank and *Wolbachia* MLST databases with use of Basic Alignment Search tool (BLAST). Host species in which most similar genes or strains were found are presented. GB acc.no. - GenBank accession numbers.

Strain	BLAST search against GenBank					
	<i>gatB</i>	GB acc.no.	<i>coxA</i>	GB acc.no.	<i>hcpA</i>	GB acc.no.
<i>Bembidion varicolor</i> strain1	<i>Diabrotica barberi</i> leaf beetle	KC578126	<i>Rhinusa rara</i> weevil	KJ620006	<i>Ochthebius meridionalis</i> Hydraenidae	KT199227
<i>Bembidion varicolor</i> strain2	<i>Leptopilina clavipes</i> wasp	HM999655	<i>Rhinusa rara</i> weevil	KJ620006	<i>Hylaeus styriacus</i> bee	KP183322
<i>Bembidion varicolor</i> strain3	<i>Diabrotica barberi</i> leaf beetle	KC578126	<i>Ceutorhynchus obstrictus</i> weevil	HM640236	<i>Ochthebius meridionalis</i> Hydraenidae	KT199227
<i>Bembidion punctulatum</i> strain4	<i>Leptopilina clavipes</i> wasp	HM999655	<i>Rhinusa rara</i> weevil	KJ620006	<i>Hylaeus styriacus</i> bee	KP183322
<i>Paederus limnophilus</i> strain5	<i>Megastigmus bipunctatus</i> wasp	KJ535731	<i>Neoscona nautica</i> spider	KX169176	<i>Hydraena morio</i> Hydraenidae	KT199221
<i>Paederidus ruficollis</i> strain6	<i>Diabrotica barberi</i> leaf beetle	KC578126	<i>Ceutorhynchus obstrictus</i> weevil	HM640236	<i>Oreina liturata</i> leaf beetle	HG970636
Strain	BLAST search against GenBank			BLAST search against <i>Wolbachia</i> MLST database		
	<i>ftsZ</i>	GB acc.no.	<i>fbpA</i>	GB acc.no.	species	no loci identified
<i>Bembidion varicolor</i> strain1	<i>Camponotus sayi</i> ant	DQ266387	<i>Diabrotica barberi</i> leaf beetle	KC578023	<i>Aphantopus yperanthus</i> butterfly	3
<i>Bembidion varicolor</i> strain2	<i>Camponotus sayi</i> ant	DQ266387	<i>Hylaeus punctulatus</i> Hydraenid	KP183276	-	1
<i>Bembidion varicolor</i> strain3	<i>Camponotus sayi</i> ant	DQ266387	<i>Diabrotica barberi</i> leaf beetle	KC578023	<i>Aphantopus yperanthus</i> butterfly	3
<i>Bembidion punctulatum</i> strain4	<i>Camponotus sayi</i> ant	DQ266387	<i>Hylaeus punctulatus</i> Hydraenid	KP183276	<i>Lycaeides idas</i> butterfly	3
<i>Paederus limnophilus</i> strain5	<i>Altica impressicollis</i> leaf beetle	KF163368	<i>Lutzomyia stewarti</i> fly	KJ174698	<i>Anoplolepis gracillipes</i> ant	2
<i>Paederidus ruficollis</i> strain6	<i>Altica impressicollis</i> leaf beetle	KF163368	<i>Lutzomyia stewarti</i> fly	KJ174698	<i>Evagetes parvus</i> wasp	3

Table S3. Basic statistics of genetic diversity (Cytochrome Oxidase gene subunit I, *COXI* and Arginine Kinase gene, *ArgK*) calculated for all sampled sites (river catchments) with populations of selected riverine beetle species. Hn - haplotype number, P - number of polymorphic sites, Hdiv - haplotype diversity, π div - nucleotide diversity, SD - standard deviation.

Gene	<i>COXI</i>					<i>ArgK</i>				
Site (catchment)	Hnum	Hpriv	Seg	Hdiv \pm SD	π div \pm SD	Hnum	Hpriv	Seg	Hdiv \pm SD	π div \pm SD
<i>Paederus limnophilus</i>										
Raba	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Wiar	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	4	-	12	0.75 \pm 0.04	0.007 \pm 0.002	4	-	8	0.75 \pm 0.04	0.004 \pm 0.001
<i>Paederidus ruficollis</i>										
Raba	2	1	1	0.53 \pm 0.1	0.001 \pm 0.00	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Wiar	2	2	1	0.6 \pm 0.18	0.001 \pm 0.001	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	2	2	1	0.6 \pm 0.18	0.001 \pm 0.001	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	6	-	4	0.69 \pm 0.08	0.002 \pm 0.001	3	-	3	0.52 \pm 0.09	0.001 \pm 0.001
<i>Paederidus rubrothoracicus</i>										
Raba	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Wiar	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	2	2	7	0.6 \pm 0.18	0.007 \pm 0.003	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	4	-	8	0.53 \pm 0.1	0.003 \pm 0.002	3	-	4	0.52 \pm 0.09	0.002 \pm 0.001
<i>Bembidion varicolor</i>										
Raba	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Topľa	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	3	-	4	0.52 \pm 0.09	0.003 \pm 0.001	2	-	1	0.29 \pm 0.09	0.000 \pm 0.000
<i>Bembidion decorum</i>										
Raba	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	2	1	1	0.36 \pm 0.16	0.001 \pm 0.001
Dunajec	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	2	0	0.00 \pm 0.00	0.000 \pm 0.000
Topľa	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	4	-	4	0.75 \pm 0.04	0.003 \pm 0.001	5	-	4	0.78 \pm 0.04	0.002 \pm 0.001
<i>Bembidion modestum</i>										
Raba	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Oder	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	2	2	1	0.6 \pm 0.18	0.001 \pm 0.001	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000
All sites	5	-	7	0.76 \pm 0.04	0.003 \pm 0.001	4	-	4	0.75 \pm 0.04	0.002 \pm 0.001
<i>Bembidion punctulatum</i>										
Raba	2	0	2	0.53 \pm 0.1	0.001 \pm 0.001	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Dunajec	1	1	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Oder	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
Moldova	2	1	1	0.6 \pm 0.18	0.001 \pm 0.001	1	0	0	0.00 \pm 0.00	0.000 \pm 0.000
all sites	4	-	4	0.49 \pm 0.1	0.001 \pm 0.001	1	-	0	0.00 \pm 0.00	0.000 \pm 0.000