

**Table S1:** Overview of species ID's, sampling localities, and NCBI Accession numbers used for the present study. For the phylogeny *Coryphagrion grandis*, *Mecistogaster linearis* and *Mecistogaster lucretia* were used as outgroups.

<sup>1</sup> Sampling localities from north to south are: RBLT (Biosphere Reserve Los Tuxtlas, Veracruz, Mexico), HN (Cusuco National Park, Honduras), NI (El Jaguar reserve, Nicaragua), NI-b Biological Reserve Indio Maíz "Bartola Reserve", Nicaragua, LS (Biological Research Station La Selva, Costa Rica), CNP (Corcovado National Park "Sirena Field Station", Costa Rica), BCI (Barro Colorado Island, Panama) and CAN (Rio Canande Reserve, Esmeraldas Province, Ecuador).

<sup>2</sup> Because 16S rDNA was obtained directly as a sequence file from Fincke et al. and the sequences are not published in NCBI only presence can be described.

<sup>3</sup> Ingroup: Sequences originate from Fincke et al. 2018; Comparison group: Sequences originate from Feindt et al. 2014 and are partly unpublished.

<sup>4</sup> NI-b: According to our in-house barcodes this individual belongs to the Bartola Region.

Species ID	Sampling locality <sup>1</sup>	Species	CO1		16S rRNA	
			NCBI accession number	Comments	Available (yes / no) <sup>2</sup> NCBI accession number	Comments
Ingroup <sup>3</sup> = Study A						
RU_615	BCI	<i>M. caerulatus</i>	MH998528	Removed due to short sequence length	yes	Removed due to low quality
RU_616	BCI	<i>M. caerulatus</i>	MH998529		yes	Removed due to low quality
RU_617	BCI	<i>M. caerulatus</i>	MH998530	Removed due to short sequence length	yes	
RU_628	BCI	<i>M. caerulatus</i>	MH998531	Removed due to short sequence length	yes	
RU_633	BCI	<i>M. caerulatus</i>	MH998532	Removed due to short sequence length	yes	
RU_679	BCI	<i>M. caerulatus</i>	MH998533		no	
RU_680	BCI	<i>M. caerulatus</i>	MH998534	Removed due to low quality	no	
RU_681	BCI	<i>M. caerulatus</i>	MH998535	Removed due to low quality	no	
RU_683A	BCI	<i>M. caerulatus</i>	MH998536	Removed due to low quality	no	
RU_683b	BCI	<i>M. caerulatus</i>	MH998537	Removed due to low quality	yes	
RU_684	BCI	<i>M. caerulatus</i>	MH998538		no	
RU_687	CNP	<i>M. caerulatus</i>	MH998539		no	
RU_688	CNP	<i>M. caerulatus</i>	MH998540	Removed due to low quality	no	
RU_689	CNP	<i>M. caerulatus</i>	MH998541	Removed due to low quality	no	
RU_703	CNP	<i>M. caerulatus</i>	MH998542		no	
RU_704	CNP	<i>M. caerulatus</i>	MH998543	Removed due to low quality	no	
RU_706	CNP	<i>M. caerulatus</i>	MH998544	Removed due to low quality	no	

RU_707	CNP	<i>M. caerulatus</i>	MH998545	Removed due to low quality	no	
RU_708	CNP	<i>M. caerulatus</i>	MH998546		no	
RU_709	CNP	<i>M. caerulatus</i>	MH998547		no	
RU_710	CNP	<i>M. caerulatus</i>	MH998548		no	
RU_711	CNP	<i>M. caerulatus</i>	MH998549		no	
RU_735	RBLT	<i>M. caerulatus</i>	MH998550	Removed due to low quality	yes	
RU_739	RBLT	<i>M. caerulatus</i>	MH998551	Removed due to low quality	yes	
RU_740	RBLT	<i>M. caerulatus</i>	MH998552		yes	
RU_741	RBLT	<i>M. caerulatus</i>	MH998553	Removed due to low quality	yes	
RU_833	LS	<i>M. caerulatus</i>	MH998554		yes	
RU_835	LS	<i>M. caerulatus</i>	MH998555	Removed due to low quality	yes	
RU_836	LS	<i>M. caerulatus</i>	MH998556	Removed due to low quality	yes	
RU_837	LS	<i>M. caerulatus</i>	MH998557	Removed due to low quality	yes	Removed due to low quality
RU_840	LS	<i>M. caerulatus</i>	MH998558		yes	
RU_842	LS	<i>M. caerulatus</i>	MH998559	Removed due to low quality	yes	
RU_843	LS	<i>M. caerulatus</i>	MH998560	Removed due to low quality	yes	
RU_844	LS	<i>M. caerulatus</i>	MH998561	Removed due to low quality	yes	
RU_845	LS	<i>M. caerulatus</i>	MH998562	Removed due to low quality	yes	Removed due to uncertain base calling
RU_846	LS	<i>M. caerulatus</i>	MH998563	Removed due to low quality	yes	
RU_847	LS	<i>M. caerulatus</i>	MH998564	Removed due to low quality	yes	Removed due to uncertain base calling
RU_848	LS	<i>M. caerulatus</i>	MH998565	Removed due to low quality	yes	
RU_849	LS	<i>M. caerulatus</i>	MH998566		yes	
RU_851	LS	<i>M. caerulatus</i>	MH998567	Removed due to low quality	yes	
RU_852	LS	<i>M. caerulatus</i>	MH998568	Removed due to low quality	yes	
RU_861	LS	<i>M. caerulatus</i>	MH998569	Removed due to low quality	yes	
RU_862	LS	<i>M. caerulatus</i>	MH998570	Removed due to low quality	yes	
RU_866	CAN	<i>M. caerulatus</i>	MH998571	Removed due to low quality	yes	
RU_874	CAN	<i>M. caerulatus</i>	MH998572		yes	Removed due to uncertain base calling
RU_875	LS	<i>M. caerulatus</i>	MH998573		yes	

RU_631	HN	<i>M. caerulatus</i>	MH998574	Removed due to short sequence length	yes	Removed due to internal gaps and short sequence length
RU_632	BCI	<i>M. caerulatus</i>	MH998575	Removed due to short sequence length	yes	Removed due to internal gaps and short sequence length
RU_718	LS	<i>M. caerulatus</i>	MH998576		no	
RU_719	LS	<i>M. caerulatus</i>	MH998577		no	
RU_803	RBLT	<i>M. caerulatus</i>	MH998578	Removed due to low quality	yes	Removed due to internal gaps and short sequence length
RU_831	LS	<i>M. caerulatus</i>	MH998579	Removed due to low quality	yes	
519_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998580		yes	
520_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998581		yes	
531_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998582	Removed due to low quality	yes	
532_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998583	Removed due to low quality	yes	
534_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998584		yes	
533_MC_Nicaragua	NI	<i>M. caerulatus</i>	MH998585	Removed due to low quality	yes	Removed due to short sequence length
523_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998587		yes	
513_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998588		yes	
522_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998589		yes	
518_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998590		yes	
521_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998591		yes	
527_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998592		yes	

528_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998593	yes	Sequences were not included, because they are not listed in Study-A species list nor on NCBI.
525_mc_Nicaragua	NI	<i>M. caerulatus</i>	MH998594	yes	
200_MC_Nicaragua	NI-b <sup>4</sup>	<i>M. caerulatus</i>	MH998586	Removed due to low quality	
OF_137_Nicaragua	NI-b <sup>4</sup>	<i>M. caerulatus</i>	MH998595	yes	
RU_621	n.a.	?	n.a.	yes	
RU_828	n.a.	?	n.a.	yes	
RU_829	n.a.	?	n.a.	yes	
RU_613_Honduras	n.a.	?	n.a.	yes	
530_MC_Nicaragua	n.a.	?	n.a.	yes	
529_MC_Nicaragua	n.a.	?	n.a.	yes	
Comparison group <sup>3</sup> = Study B					
BCI1	BCI	<i>M. caerulatus</i>	MH939693	KF895130	
BCI2	BCI	<i>M. caerulatus</i>	MH939694	KF895131	
BCI3	BCI	<i>M. caerulatus</i>	MH939695	KF895132	
BCI4	BCI	<i>M. caerulatus</i>	MH939696	KF895133	
BCI5	BCI	<i>M. caerulatus</i>	MH939697	KF895134	
BCI6	BCI	<i>M. caerulatus</i>	MH939698	KF895135	
BCI7	BCI	<i>M. caerulatus</i>	MH939699	KF895136	
BCI8	BCI	<i>M. caerulatus</i>	MH939700	KF895137	
BCI9	BCI	<i>M. caerulatus</i>	MH939701	KF895138	
BCI10	BCI	<i>M. caerulatus</i>	MH939702	KF895139	
BCI11	BCI	<i>M. caerulatus</i>	MH939703	KF895140	
BCI12	BCI	<i>M. caerulatus</i>	MH939704	KF895141	
BCI12_2	BCI	<i>M. caerulatus</i>	MH939705	KF895142	
BCI14	BCI	<i>M. caerulatus</i>	MH939706	KF895143	
BCI15	BCI	<i>M. caerulatus</i>	MH939707	KF895144	

BCI16	BCI	<i>M. caerulatus</i>	MH939708	KF895145
BCI17	BCI	<i>M. caerulatus</i>	MH939709	KF895146
BCI19	BCI	<i>M. caerulatus</i>	MH939710	KF895148
BCI20	BCI	<i>M. caerulatus</i>	MH939711	KF895149
BCI22w	BCI	<i>M. caerulatus</i>	MH939713	KF895150
BCI23	BCI	<i>M. caerulatus</i>	MH939714	KF895151
BCI24	BCI	<i>M. caerulatus</i>	MH939715	KF895152
BCI25	BCI	<i>M. caerulatus</i>	MH939716	KF895153
BCI26	BCI	<i>M. caerulatus</i>	MH939717	KF895154
BCI27	BCI	<i>M. caerulatus</i>	MH939718	KF895155
BCI28	BCI	<i>M. caerulatus</i>	MH939719	KF895156
BCI29	BCI	<i>M. caerulatus</i>	MH939720	KF895157
BCI30	BCI	<i>M. caerulatus</i>	MH939721	KF895158
BCI31	BCI	<i>M. caerulatus</i>	MH939722	KF895159
CNP3	CNP	<i>M. caerulatus</i>	MH939658	KF895162
CNP13_1	CNP	<i>M. caerulatus</i>	MH939659	KF895164
CNP13_2	CNP	<i>M. caerulatus</i>	MH939660	KF895165
CNP14	CNP	<i>M. caerulatus</i>	MH939661	KF895166
CNP18	CNP	<i>M. caerulatus</i>	MH939667	KF895167
CNP20	CNP	<i>M. caerulatus</i>	MH939668	KF895168
CNP25	CNP	<i>M. caerulatus</i>	MH939669	KF895169
CNP29	CNP	<i>M. caerulatus</i>	MH939670	KF895170
CNP30	CNP	<i>M. caerulatus</i>	MH939671	KF895171
CNP31	CNP	<i>M. caerulatus</i>	MH939672	KF895172
CNP32	CNP	<i>M. caerulatus</i>	MH939673	KF895173
CNP36	CNP	<i>M. caerulatus</i>	MH939674	KF895174
CNP45	CNP	<i>M. caerulatus</i>	MH939675	KF895175
CNP48	CNP	<i>M. caerulatus</i>	MH939676	KF895176
CNP48_1	CNP	<i>M. caerulatus</i>	MH939677	KF895177
CNP51_1	CNP	<i>M. caerulatus</i>	MH939678	KF895178
CNP51_2	CNP	<i>M. caerulatus</i>	MH939679	KF895179

CNP51_3	CNP	<i>M. caerulatus</i>	MH939680	KF895180
CrCNPL3	CNP	<i>M. caerulatus</i>	MH939688	KF895181
CrCNPL14	CNP	<i>M. caerulatus</i>	MH939689	KF895182
CrCNPL15	CNP	<i>M. caerulatus</i>	MH939690	KF895183
CrCNPL19	CNP	<i>M. caerulatus</i>	MH939691	KF895184
CrCNPL20	CNP	<i>M. caerulatus</i>	MH939692	KF895185
CNPMC5	CNP	<i>M. caerulatus</i>	MH939681	KF895186
CNPMC7	CNP	<i>M. caerulatus</i>	MH939682	KF895187
CNPMC9	CNP	<i>M. caerulatus</i>	MH939683	KF895188
CNPMC10	CNP	<i>M. caerulatus</i>	MH939684	KF895189
CNPMC11	CNP	<i>M. caerulatus</i>	MH939685	KF895190
CNPMC13	CNP	<i>M. caerulatus</i>	MH939687	KF895191
LS1	LS	<i>M. caerulatus</i>	MH939624	KF895193
LS2	LS	<i>M. caerulatus</i>	MH939625	KF895194
LS3	LS	<i>M. caerulatus</i>	MH939626	KF895195
LS4	LS	<i>M. caerulatus</i>	MH939627	KF895196
LS5	LS	<i>M. caerulatus</i>	MH939628	KF895197
LS6	LS	<i>M. caerulatus</i>	MH939629	KF895198
LS7	LS	<i>M. caerulatus</i>	MH939630	KF895199
LS8	LS	<i>M. caerulatus</i>	MH939631	KF895200
LS9	LS	<i>M. caerulatus</i>	MH939738	KF895201
LS10	LS	<i>M. caerulatus</i>	MH939632	KF895202
LS11	LS	<i>M. caerulatus</i>	MH939633	KF895203
LS12	LS	<i>M. caerulatus</i>	MH939634	KF895204
LS13	LS	<i>M. caerulatus</i>	MH939635	KF895205
LS15	LS	<i>M. caerulatus</i>	MH939637	KF895206
LS16	LS	<i>M. caerulatus</i>	MH939638	KF895207
LS17	LS	<i>M. caerulatus</i>	MH939639	KF895208
LS18	LS	<i>M. caerulatus</i>	MH939640	KF895209
LS19	LS	<i>M. caerulatus</i>	MH939641	KF895210
LS20	LS	<i>M. caerulatus</i>	MH939642	KF895211

LS21	LS	<i>M. caerulatus</i>	MH939643	KF895212
LS22	LS	<i>M. caerulatus</i>	MH939644	KF895213
LS23	LS	<i>M. caerulatus</i>	MH939645	KF895214
LS24	LS	<i>M. caerulatus</i>	MH939646	KF895215
LS25	LS	<i>M. caerulatus</i>	MH939647	KF895216
LS26	LS	<i>M. caerulatus</i>	MH939648	KF895217
LS27	LS	<i>M. caerulatus</i>	MH939649	KF895218
LS28	LS	<i>M. caerulatus</i>	MH939650	KF895219
LS29	LS	<i>M. caerulatus</i>	MH939651	KF895220
LS30	LS	<i>M. caerulatus</i>	MH939652	KF895221
LS31	LS	<i>M. caerulatus</i>	MH939653	KF895222
LT1	RBLT	<i>M. caerulatus</i>	MH939548	KF895223
LT2	RBLT	<i>M. caerulatus</i>	MH939549	KF895224
LT3	RBLT	<i>M. caerulatus</i>	MH939550	KF895225
LT4	RBLT	<i>M. caerulatus</i>	MH939551	KF895226
LT6	RBLT	<i>M. caerulatus</i>	MH939552	KF895227
LT7	RBLT	<i>M. caerulatus</i>	MH939553	KF895228
LT10	RBLT	<i>M. caerulatus</i>	MH939554	KF895229
LT13	RBLT	<i>M. caerulatus</i>	MH939555	KF895230
LT14	RBLT	<i>M. caerulatus</i>	MH939556	KF895231
LT15	RBLT	<i>M. caerulatus</i>	MH939557	KF895232
LT16	RBLT	<i>M. caerulatus</i>	MH939558	KF895233
LT17	RBLT	<i>M. caerulatus</i>	MH939559	KF895234
LT18	RBLT	<i>M. caerulatus</i>	MH939560	KF895235
LT19	RBLT	<i>M. caerulatus</i>	MH939561	KF895236
LT20	RBLT	<i>M. caerulatus</i>	MH939562	KF895237
LT21	RBLT	<i>M. caerulatus</i>	MH939563	KF895238
MeLtL11	RBLT	<i>M. caerulatus</i>	MH939566	KF895239
MeLtL17	RBLT	<i>M. caerulatus</i>	MH939570	KF895240
Outgroup				
CG84D & CG84E	n.a.	<i>C. grandis</i>	KC912402	DQ642981

RMNH.INS.50 1850	n.a.	<i>M. linearis</i>	KF369435	KF369773
RMNH.INS.50 1805	n.a.	<i>M. lucretia</i>	KF369436	KF369774