

Table S1. Ancestral chromosomal positions, according to the zebra finch genome structure, of sex-linked (non-recombining) genomic regions detected in previous studies across the Sylvioidea clade. Group numbers correspond to those in Figure 1. Two outermost edges are defined for each coherent non-recombining region (“NRR edges”), the proximal edge being the one closer to the beginning of the chromosome (0 Mb) and the distal edge being the one closer to the distal part of the chromosome. In each of the groups V-VII, there are two separate sex-linked regions (“R1” and “R2”) on chromosome 3, and they have therefore one set of NRR edges for each region and group. The asterisks (*) and **) mark the previously known fusion point between chromosomes Z and 4A (between the distal end of chromosome Z, position 72.9 Mb, and the distal NRR edge on chromosome 4A, position 9.6 Mb).

Chromosome		NRR (Mb)	NRR edges (Mb)		NRR present (X) or absent (-) in Group nr.						
ID	Length (Mb)		Proximal	Distal	I	II	III	IV	V	VI	VII
Z	72.9	0.0–72.9	0.0	72.9*	X	X	X	X	X	X	X
4A	20.7	0.0–9.6	0.0	9.6**	-	X	X	-	X	X	X
4A	20.7	5.3–9.6	5.3	9.6**	-	-	-	X	-	-	-
4	69.8	13.8–49.1	13.8	49.1	-	-	X	-	-	-	-
8	28.0	7.3–21.8	7.3	21.8	-	-	-	X	-	-	-
3	112.6	8.4–10.4 (R1); 18.1–24.1 (R2)	8.4 (R1); 18.1 (R2)	10.4 (R1); 24.1 (R2)	-	-	-	-	X	-	-
3	112.6	8.4–14.0 (R1); 18.1–24.1 (R2)	8.4 (R1); 18.1 (R2)	14.0 (R1); 24.1 (R2)	-	-	-	-	-	X	-
3	112.6	8.4–24.1 (R1); 29.8–88.0 (R2)	8.4 (R1); 29.8 (R2)	24.1 (R1); 88.0 (R2)	-	-	-	-	-	-	X
5	62.4	9.1–45.4	9.1	45.4	-	-	-	-	-	-	X

Table S2. Songbird PAR genes identified in the zebra finch annotation. The column “Gene name” corresponds to the gene names given in the Main text.

Gene name	Zebra finch gene ID (bTaeGut2.pat.W.v2)	Transcript ID	Scaffold	Start (bp)	End (bp)	protein coding
uncharacterized1	LOC116806781	XR_004365834.1	NC_045027.1	11005	11912	no
LMAN1	LOC100220399	XM_030258642.2	NC_045027.1	33731	58078	yes
uncharacterized2	LOC116806731	XR_004365759.1	NC_045027.1	52211	71108	no
RAX	RAX	NM_001243734.2	NC_045027.1	64707	66358	yes
GRP	LOC105760884	XM_030258647.2	NC_045027.1	71706	76475	yes
SEC11C	LOC116806596	XM_030257196.2	NC_045027.1	79268	84487	yes
ZNF532	LOC116806602	XM_032744080.1	NC_045027.1	90198	124057	yes
MALT1	LOC116806749	XM_032744259.1	NC_045027.1	135069	153662	yes
ALPK2	LOC116806817	XM_032744489.1	NC_045027.1	153718	182131	yes
uncharacterized3	LOC116806818	XR_004365896.1	NC_045027.1	182242	185760	no
MIR122	MIR122	NR_049051.1	NC_045027.1	182594	182665	no
NEDD4L	LOC116806603	XM_032744495.1	NC_045027.1	203780	290722	yes
uncharacterized4	LOC115491286	XR_003957248.2	NC_045027.1	209240	211463	no
uncharacterized5	LOC116806819	XR_004365897.1	NC_045027.1	215304	221401	no
ATP8B1	LOC116806743	XM_032744197.1	NC_045027.1	304375	325804	yes
NARS1	NARS1	XM_030259060.2	NC_045027.1	325874	333111	yes
FECH	LOC116806605	XM_030259064.2	NC_045027.1	334740	346420	yes
ONECUT2	LOC100226718	XR_003957244.2	NC_045027.1	350233	367344	yes
ST8SIA3	LOC116806742	XM_032744196.1	NC_045027.1	370724	378119	yes
uncharacterized6	LOC115491263	XR_003957222.2	NC_045027.1	379525	398137	no
WDR7	LOC116806851	XM_032744613.1	NC_045027.1	400103	447553	yes
TXNL1	LOC100218989	XM_032744615.1	NC_045027.1	444330	457645	yes
uncharacterized7	LOC116806852	XR_004365928.1	NC_045027.1	484714	493199	no

Table S3. Samples used for analyses. All samples were sequenced by us except for collared flycatcher (indicated with asterisks), which was downloaded from NCBI. All data are available on NCBI.

Species	Common name	Female: Sample name	Male: Sample name	Female: NCBI accession (SRA)	Male: NCBI accession (SRA)	BioProject
<i>Aegithalos caudatus</i>	Long-tailed tit	QF-1504-CP59475_S11_L004	QF-1504-BL37630_S12_L004	SRX7707624	SRX7707625	PRJNA579268
<i>Alauda arvensis</i>	Eurasian skylark	QL-1681-19_S46_L006	QL-1681-21_S47_L006	SRX7050286	SRX7050287	PRJNA579268
<i>Cecropis daurica</i>	Red-rumped swallow	QF-1504-P182141_S2_L001	QF-1504-P182142_S1_L001	SRX7707630	SRX7707631	PRJNA579268
<i>Cettia cetti</i>	Cetti's warbler	QF-1504-P182137_S9_L003	QF-1504-2L18122_S4_L002	SRX7707626	SRX7707627	PRJNA579268
<i>Cisticola juncidis</i>	Zitting cisticola	QF-1504-CISJUN-2_S6_L002	QF-1504-RA5680_S5_L002	SRX7707628	SRX7707629	PRJNA579268
<i>Eremophila alpestris</i>	Horned lark	QF-1504-H-19_S8_L003	QF-1504-H-88_S7_L003	SRX7050288	SRX7050289	PRJNA579268
<i>Locustella luscinioides</i>	Savi's warbler	QF-1504-LOCLUS-43_S1_L001	QF-1504-LOCLUS-24_S3_L001	SRX7707618	SRX7707619	PRJNA579268
<i>Panurus biarmicus</i>	Bearded reedling	QF-1504-2KR32024_S2_L001	QF-1504-1ET92164_S3_L001	SRX7050290	SRX7050291	PRJNA579268
<i>Phylloscopus collybita</i>	Common chiffchaff	QF-1504-R86159_S5_L002	QF-1504-Z81303_S4_L002	SRX7707620	SRX7707621	PRJNA579268
<i>Sylvia atricapilla</i>	Eurasian blackcap	1EL38952_S2_L001	1EV02922_S4_L002	SRX7707622	SRX7707623	PRJNA579268
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	QF-1504-CT90325_S17_L006	QF-1504-CT90312_S18_L006	SRX7707616	SRX7707617	PRJNA578893
<i>Argya altirostris</i>	Iraq babbler	SJ-2333-IB-2b_S32_L002	SJ-2333-IB-1a_S31_L002	SRX16766677	SRX16766676	PRJNA578893
<i>Pycnonotus barbatus</i>	Common bulbul	SJ-2333-Pbar-197_S24_L002	SJ-2333-Pbar-421_S22_L002	SRX16766680	SRX16766681	PRJNA578893
<i>Sylvietta brachyura</i>	Northern crombec	SJ-2333-Sbra-553_S28_L002	SJ-2333-Sbra-878_S26_L002	SRX16766678	SRX16766679	PRJNA578893
<i>Ficedula albicollis</i>	Collared flycatcher	OC_HB10_450 *	OC_I_450 *	ERR637378	ERR637360	PRJEB7359

Table S4. Published reference genomes used in the study to identify fusion points and novel PARs, and what samples (from Table S3) was aligned to each reference genome (see Methods).

Species	Reference genomes (downloaded)				Analysed with (Table S3)	
	Common name	Assembly name	NCBI assembly accession	Sex	Female	Male
<i>Alauda arvensis</i>	Eurasian skylark	skylark_genome	GCA_902810485.1	male	QL-1681-19_S46_L006	QL-1681-21_S47_L006
<i>Alauda arvensis</i>	Eurasian skylark	skylark_genome	GCA_902810485.1	male	QL-1681-95694_S52_L008	QL-1681-246_S51_L008
<i>Cisticola juncidis</i>	zitting cisticola	ASM1340021v1	GCA_013400215.1	male	QF-1504-CISJUN-2_S6_L002	QF-1504-RA5680_S5_L002
<i>Eremophila alpestris</i>	horned lark	CLO_EAlp_1.0	GCA_009792885.1	male	QF-1504-H-19_S8_L003	QF-1504-H-88_S7_L003
<i>Sylvietta virens</i>	green crombec	ASM1339951v1	GCA_013399515.1	male	SJ-2333-Sbra-553_S28_L002	SJ-2333-Sbra-878_S26_L002

Table S5. Interspecies pairwise distances between sexes, per species.

Species	N genes	Median pairwise distance	SD (of pairwise distance)	IQR (of pairwise distance)	Median value higher than <i>T. guttata</i>	<i>W</i> -statistic [#]	<i>P</i> -value	Bonferroni corrected <i>P</i> -value [§]	<i>P</i> -value formatted	Bonferroni corrected <i>P</i> -value [§] , formatted
<i>Ficedula albicollis</i>	17	0.00125	0.00174	0.00179	FALSE	62	8.09E-03	1.21E-01	0.0081	0.1213
<i>Cettia cetti</i>	17	0.00000	0.00019	0.00024	FALSE	0	8.85E-07	1.33E-05	0.0000	0.0000
<i>Aegithalos caudatus</i>	17	0.00108	0.00136	0.00142	FALSE	53	2.96E-03	4.44E-02	0.0030	0.0444
<i>Phylloscopus collybita</i>	17	0.00047	0.00255	0.00422	FALSE	84	6.28E-02	9.42E-01	0.0628	0.9421
<i>Pycnonotus barbatus</i>	16	0.00096	0.00116	0.00134	FALSE	42	7.70E-04	1.15E-02	0.0008	0.0115
<i>Sylvia atricapilla</i>	17	0.00569	0.00261	0.00369	TRUE	185	8.05E-02	1.00E+00	0.0805	1.0000
<i>Argya altirostris</i>	17	0.00000	0.00080	0.00076	FALSE	17	1.86E-05	2.79E-04	0.0000	0.0003
<i>Cecropis daurica</i>	17	0.00240	0.00199	0.00203	FALSE	96	1.55E-01	1.00E+00	0.1547	1.0000
<i>Acrocephalus schoenobaenus</i>	17	0.00381	0.00411	0.00530	TRUE	188	6.30E-02	9.45E-01	0.0630	0.9450
<i>Locustella luscinioides</i>	17	0.00095	0.00149	0.00176	FALSE	53	2.94E-03	4.40E-02	0.0029	0.0440
<i>Cisticola juncidis</i>	17	0.05870	0.01754	0.02255	TRUE	272	1.71E-09	2.57E-08	0.0000	0.0000
<i>Sylvietta brachyura</i>	17	0.02553	0.00670	0.01014	TRUE	272	1.71E-09	2.57E-08	0.0000	0.0000
<i>Panurus biarmicus</i>	16	0.00071	0.00105	0.00137	FALSE	40	5.53E-04	8.30E-03	0.0006	0.0083
<i>Eremophila alpestris</i>	17	0.00309	0.00198	0.00184	TRUE	143	8.17E-01	1.00E+00	0.8173	1.0000
<i>Alauda arvensis</i>	16	0.01500	0.00429	0.00387	TRUE	252	3.99E-08	5.99E-07	0.0000	0.0000
<i>Taeniopygia guttata</i>	16	0.00243	0.00282	0.00453						

[#] Two-sided Wilcoxon sign-rank tests (species against *T. guttata*)[§] Bonferroni correction for testing all 15 species

Table S6. Female-to-male private allele counts per PAR gene.

Species	N genes	Median private alleles female	SD (private alleles female)	IQR (private alleles female)	Median private alleles male	SD (private alleles male)	IQR (private alleles male)	Proportion of genes with value higher in female	W-statistic [#]	P-value	Bonferroni corrected P-value [§]	P-value formatted	Bonferroni corrected P-value [§] , formatted
<i>Ficedula albicollis</i>	17	2	4.07	2	3	5.99	4	0.12	8	1.61E-02	2.42E-01	0.0161	0.2416
<i>Cettia cetti</i>	17	0	1.17	1	0	0.59	0	0.29	24	4.30E-01	1.00E+00	0.4297	1.0000
<i>Aegithalos caudatus</i>	17	3	3.74	4	2	3.59	3	0.41	46	1.00E+00	1.00E+00	1.0000	1.0000
<i>Phylloscopus collybita</i>	17	1	5.16	5	1	5.54	8	0.18	17.5	3.29E-01	1.00E+00	0.3288	1.0000
<i>Pycnonotus barbatus</i>	17	2	3.68	3	3	3.63	5	0.41	51	6.27E-01	1.00E+00	0.6271	1.0000
<i>Sylvia atricapilla</i>	17	8	8.47	11	10	5.89	8	0.59	81.5	5.01E-01	1.00E+00	0.5007	1.0000
<i>Argya altirostris</i>	17	1	8.80	3	0	1.23	1	0.59	65.5	3.98E-02	5.97E-01	0.0398	0.5975
<i>Cecropis daurica</i>	17	4	4.84	6	3	4.10	5	0.53	73	4.76E-01	1.00E+00	0.4760	1.0000
<i>Locustella luscinioides</i>	17	1	8.96	5	1	3.08	1	0.41	52	6.73E-01	1.00E+00	0.6726	1.0000
<i>Acrocephalus schoenobaenus</i>	17	11	11.41	15	9	9.01	11	0.59	87.5	1.24E-01	1.00E+00	0.1239	1.0000
<i>Cisticola juncidis</i>	17	125	96.55	103	0	0.00	0	1.00	153	3.20E-04	4.81E-03	0.0003	0.0048
<i>Sylvietta brachyura</i>	17	62	49.14	51	1	1.94	2	1.00	153	3.20E-04	4.81E-03	0.0003	0.0048
<i>Panurus biarmicus</i>	17	2	3.27	3	1	2.65	4	0.53	71	5.45E-01	1.00E+00	0.5455	1.0000
<i>Eremophila alpestris</i>	17	5	13.81	9	4	4.45	5	0.53	90.5	2.54E-01	1.00E+00	0.2540	1.0000
<i>Alauda arvensis</i>	17	32	25.10	32	5	9.54	12	0.94	136	4.81E-04	7.22E-03	0.0005	0.0072

[#] Two-sided paired Wilcoxon sign-rank tests (males against females)[§] Bonferroni correction for testing all 15 species

Table S7. Scaffolds suggestive of fusion points between chromosome 4A and chromosome 3.

Species	Description	Scaffold ID	Scaffold range (bp)	Zebra finch range (bp)	Sex-linked
<i>Eremophila alpestris</i>	Fusion scaffold (Z;4A;3)	WMCF01000024.1	0-3269374	Z:69365659-72860660	sex-linked
<i>Eremophila alpestris</i>	Fusion scaffold (Z;4A;3)	WMCF01000024.1	3277173-12546504	4A:4588-9605363	sex-linked
<i>Eremophila alpestris</i>	Fusion scaffold (Z;4A;3)	WMCF01000024.1	12550475-12555560	3:12208-18513	sex-linked
<i>Eremophila alpestris</i>	Fusion scaffold (Z;4A;3)	WMCF01000024.1	12558560-12560541	3:24098751-24103322	sex-linked
<i>Alauda arvensis</i>	Fusion scaffold (4A;3)	CADDXX010000006.1	15000-5830000	4A:23654-5995271	sex-linked
<i>Alauda arvensis</i>	Fusion scaffold (4A;3)	CADDXX010000006.1	5000-15000	3:14664-16406	unsure
<i>Alauda arvensis</i>	Fusion scaffold (4A;3)	CADDXX010000006.1	0-5000	3:24099520-24099841	sex-linked

Table S8. Suggested chromosome structure for Groups II-VII (see Figure 4 and Main Text).

Group II	PARZZ:0.0-0.5(+)-NRRZZ:0.5-73.4(+)-NRR4A4A:9.6-0.0(-)
Group III	PAR44:69.8-49.1(-)-NRR44:49.1-13.8(-)-NRRZZ:0.0-73.4(+)-NRR4A4A:9.6-0.0(-)
Group IV	PAR88:28.0-21.8(-)-NRR88:21.8-7.3(-)-NRRZZ:0.0-73.4(+)-NRR4A4A:9.6-5.3(-)-PAR4A4A:5.3-00(-)
Group V	PARZZ:0.0-0.5(+)-NRRZZ:0.5-73.4(+)-NRR4A4A:9.6-0.0(-)-NRR33:unsure-PAR33:unsure,
Group VI	PAR55:62.4-0.0(-)-PARZZ:0.0-0.5(+)-NRRZZ:0.5-73.4(+)-NRR4A4A:9.6-0.0(-)-NRR33:unsure-PAR33:unsure
Group VII	PAR55:62.4-45.4(-)-NRR55:45.1-9.1(-)-NRRZZ:0.0-73.4(+)-NRR4A4A:9.6-0.0(-)-NRR33:unsure-PAR33:unsure

Table S9. Songbird PAR-scaffolds from reference genomes (in Table S4) used to generate Figure S10.

Species	Chromosome copy	ID
<i>Taeniopygia guttata</i> (3.2.4)	PAR-Z	Z_random
<i>Taeniopygia guttata</i> (bTaeGut2.pat.W.v2)	PAR-Z	NC_045027.1
<i>Taeniopygia guttata</i> (bTaeGut2.pat.W.v2)	PAR-W	NW_022611471.1
<i>Ficedula albicollis</i>	PAR-Z	N00298
<i>Ficedula albicollis</i>	PAR-Z	N00378
<i>Ficedula albicollis</i>	PAR-Z	N02597
<i>Sylvietta virens</i>	PAR-Z	scaffold_394
<i>Alauda arvensis</i>	PAR-Z	CADDXX010000025.1

Table S10. Male-to-female pairwise distance and chromosome position on the ancestral PAR (PAB at 468 kb).

Gene	Species	Chr position (bp)	Pairwise distance	Sex-linked chromosomes	Species tag
LMAN1	AcrSch	33731	0.0014070765	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
LMAN1	SylBra	33731	0.0210087301	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
LMAN1	AlaArv	33731	0.0110081251	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
LMAN1	EreAlp	33731	0.0018688122	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
LMAN1	PanBia	33731	0.0004615825	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
LMAN1	TaeGut	33731	0.001412144	Z	Taeniopygia guttata (Group I: Z)
LMAN1	FicAlb	33731	0.0009615472	Z	Ficedula albicollis (Group I: Z)
LMAN1	AegCau	33731	0.0004692959	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
LMAN1	CetCet	33731	0.0004695628	Z + 4A	Cettia cetti (Group II: Z, 4A)
LMAN1	CisJun	33731	0.0586995891	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
LMAN1	PhyCol	33731	0.0004693591	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
LMAN1	LocLus	33731	0.0000002	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
LMAN1	CecDau	33731	0.0004692175	Z + 4A	Cecropis daurica (Group II: Z, 4A)
LMAN1	SylAtr	33731	0.0018955782	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
LMAN1	ArgAlt	33731	0.0018770349	Z + 4A	Argya altirostris (Group II: Z, 4A)
LMAN1	PycBar	33731	0.0009388012	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
uncharacterized2	AcrSch	52211	0.0061705948	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
uncharacterized2	CisJun	52211	0.0058865065	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
uncharacterized2	CecDau	52211	0.0009509805	Z + 4A	Cecropis daurica (Group II: Z, 4A)
uncharacterized2	PycBar	52211	0.001320548	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
uncharacterized2	SylAtr	52211	0.0094304065	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
uncharacterized2	ArgAlt	52211	0.0013109477	Z + 4A	Argya altirostris (Group II: Z, 4A)
uncharacterized2	CetCet	52211	0.0004370515	Z + 4A	Cettia cetti (Group II: Z, 4A)
uncharacterized2	AegCau	52211	0.0013140925	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
uncharacterized2	PhyCol	52211	0.0030741171	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
uncharacterized2	AlaArv	52211	0.021208303	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
uncharacterized2	EreAlp	52211	0.0020507803	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
uncharacterized2	PanBia	52211	0.0004383029	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
uncharacterized2	TaeGut	52211	0.0013504926	Z	Taeniopygia guttata (Group I: Z)
uncharacterized2	FicAlb	52211	0.0027225919	Z	Ficedula albicollis (Group I: Z)
uncharacterized2	SylBra	52211	0.0333288232	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
uncharacterized2	LocLus	52211	0.0000002	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
RAX	AcrSch	64707	0.0023287903	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
RAX	PanBia	64707	0.0025157847	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
RAX	AlaArv	64707	0.0147867108	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
RAX	EreAlp	64707	0.0012005432	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
RAX	FicAlb	64707	0.0017472759	Z	Ficedula albicollis (Group I: Z)
RAX	TaeGut	64707	0.0022934478	Z	Taeniopygia guttata (Group I: Z)
RAX	SylBra	64707	0.0182230984	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
RAX	SylAtr	64707	0.0082787602	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
RAX	ArgAlt	64707	0.0000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
RAX	AegCau	64707	0.0000002	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
RAX	CetCet	64707	0.0000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
RAX	PhyCol	64707	0.002314514	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
RAX	PycBar	64707	0.001170177	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
RAX	CisJun	64707	0.0556019294	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
RAX	CecDau	64707	0.0000002	Z + 4A	Cecropis daurica (Group II: Z, 4A)
RAX	LocLus	64707	0.0000002	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
GRP	AcrSch	71706	0.0031701198	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
GRP	AegCau	71706	0.0009889739	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
GRP	PhyCol	71706	0.0000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
GRP	CetCet	71706	0.0000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
GRP	ArgAlt	71706	0.0000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
GRP	CisJun	71706	0.0456092108	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
GRP	PanBia	71706	0.0000002	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
GRP	SylAtr	71706	0.000494682	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
GRP	CecDau	71706	0.0000002	Z + 4A	Cecropis daurica (Group II: Z, 4A)
GRP	PycBar	71706	0.000987303	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
GRP	SylBra	71706	0.020464237	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
GRP	TaeGut	71706	0.0024446304	Z	Taeniopygia guttata (Group I: Z)
GRP	LocLus	71706	0.0019947497	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
GRP	AlaArv	71706	0.0129704336	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
GRP	EreAlp	71706	0.0039287308	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
GRP	FicAlb	71706	0.0000002	Z	Ficedula albicollis (Group I: Z)
SEC11C	AcrSch	79268	0.0026048871	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
SEC11C	SylBra	79268	0.0226380493	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
SEC11C	TaeGut	79268	0.0016068679	Z	Taeniopygia guttata (Group I: Z)
SEC11C	CisJun	79268	0.0520238326	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
SEC11C	LocLus	79268	0.0016015775	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
SEC11C	CetCet	79268	0.0000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
SEC11C	AegCau	79268	0.0010571072	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
SEC11C	PhyCol	79268	0.0000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
SEC11C	FicAlb	79268	0.0015580525	Z	Ficedula albicollis (Group I: Z)
SEC11C	PanBia	79268	0.000510046	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
SEC11C	SylAtr	79268	0.0062621867	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
SEC11C	ArgAlt	79268	0.0000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
SEC11C	CecDau	79268	0.0020932002	Z + 4A	Cecropis daurica (Group II: Z, 4A)
SEC11C	PycBar	79268	0.0015701069	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
SEC11C	AlaArv	79268	0.0127567831	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
SEC11C	EreAlp	79268	0.0020921379	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
ZNF532	AcrSch	90198	0.0023649611	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
ZNF532	AegCau	90198	0.0008415302	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
ZNF532	CetCet	90198	0.0000020006	Z + 4A	Cettia cetti (Group II: Z, 4A)
ZNF532	PhyCol	90198	0.0000020006	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
ZNF532	CecDau	90198	0.0008405369	Z + 4A	Cecropis daurica (Group II: Z, 4A)
ZNF532	PycBar	90198	0.0003353654	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
ZNF532	SylAtr	90198	0.0023723783	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
ZNF532	ArgAlt	90198	0.0000020006	Z + 4A	Argya altirostris (Group II: Z, 4A)
ZNF532	SylBra	90198	0.0168781796	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*

ZNF532	TaeGut	90198	0.0013510925	Z	Taeniopygia guttata (Group I: Z)
ZNF532	FicAlb	90198	0.00274703	Z	Ficedula albicollis (Group I: Z)
ZNF532	PanBia	90198	0.0006744973	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
ZNF532	AlaArv	90198	0.0107186996	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
ZNF532	EreAlp	90198	0.00387791	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
ZNF532	LocLus	90198	0.0006771989	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
ZNF532	CisJun	90198	0.00447219572	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
MALT1	AcrSch	135069	0.0028223549	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
MALT1	AegCau	135069	0.0010761979	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
MALT1	CetCet	135069	0.000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
MALT1	PhyCol	135069	0.000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
MALT1	PycBar	135069	0.000532237	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
MALT1	ArgAlt	135069	0.000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
MALT1	SylAtr	135069	0.0058985936	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
MALT1	LocLus	135069	0.0018704248	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
MALT1	CecDau	135069	0.0024020859	Z + 4A	Cecropis daurica (Group II: Z, 4A)
MALT1	CisJun	135069	0.0317744631	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
MALT1	SylBra	135069	0.0255346685	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
MALT1	AlaArv	135069	0.0159285027	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
MALT1	EreAlp	135069	0.0029444552	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
MALT1	PanBia	135069	0.0008500664	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
MALT1	TaeGut	135069	0.0027061101	Z	Taeniopygia guttata (Group I: Z)
MALT1	FicAlb	135069	0.0025261198	Z	Ficedula albicollis (Group I: Z)
ALPK2	AcrSch	153718	0.0064952134	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
ALPK2	AegCau	153718	0.0007596336	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
ALPK2	CetCet	153718	0.000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
ALPK2	PhyCol	153718	0.000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
ALPK2	SylAtr	153718	0.0071043222	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
ALPK2	ArgAlt	153718	0.0007626425	Z + 4A	Argya altirostris (Group II: Z, 4A)
ALPK2	PycBar	153718	0.0006318618	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
ALPK2	CecDau	153718	0.0026576561	Z + 4A	Cecropis daurica (Group II: Z, 4A)
ALPK2	LocLus	153718	0.0006469784	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
ALPK2	CisJun	153718	0.0682066603	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
ALPK2	SylBra	153718	0.0281372681	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
ALPK2	TaeGut	153718	0.0024183492	Z	Taeniopygia guttata (Group I: Z)
ALPK2	FicAlb	153718	0.0063511101	Z	Ficedula albicollis (Group I: Z)
ALPK2	AlaArv	153718	0.0152118505	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
ALPK2	EreAlp	153718	0.0081676091	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
ALPK2	PanBia	153718	0.0006281179	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
uncharacterized3	AcrSch	182242	0.0035109448	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
uncharacterized3	CisJun	182242	0.0620317914	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
uncharacterized3	LocLus	182242	0.000002	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
uncharacterized3	CetCet	182242	0.000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
uncharacterized3	AegCau	182242	0.000002	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
uncharacterized3	PycBar	182242	0.000002	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
uncharacterized3	CecDau	182242	0.0070571753	Z + 4A	Cecropis daurica (Group II: Z, 4A)
uncharacterized3	PhyCol	182242	0.000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
uncharacterized3	TaeGut	182242	0.0017839065	Z	Taeniopygia guttata (Group I: Z)
uncharacterized3	SylAtr	182242	0.0105718958	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
uncharacterized3	ArgAlt	182242	0.0017716496	Z + 4A	Argya altirostris (Group II: Z, 4A)
uncharacterized3	SylBra	182242	0.0344260317	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
uncharacterized3	FicAlb	182242	0.000002	Z	Ficedula albicollis (Group I: Z)
uncharacterized3	AlaArv	182242	0.0159472102	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
uncharacterized3	EreAlp	182242	0.0052722968	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
NEDD4L	AcrSch	203780	0.0028685673	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
NEDD4L	AegCau	203780	0.0004488415	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
NEDD4L	CetCet	203780	0.0004760711	Z + 4A	Cettia cetti (Group II: Z, 4A)
NEDD4L	PhyCol	203780	0.0002362324	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
NEDD4L	CecDau	203780	0.0004765458	Z + 4A	Cecropis daurica (Group II: Z, 4A)
NEDD4L	SylAtr	203780	0.0030991665	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
NEDD4L	ArgAlt	203780	0.0007099892	Z + 4A	Argya altirostris (Group II: Z, 4A)
NEDD4L	PycBar	203780	0.0000019988	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
NEDD4L	SylBra	203780	0.0193169231	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
NEDD4L	AlaArv	203780	0.0110420561	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
NEDD4L	EreAlp	203780	0.0007019526	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
NEDD4L	PanBia	203780	0.0006380483	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
NEDD4L	FicAlb	203780	0.0011784995	Z	Ficedula albicollis (Group I: Z)
NEDD4L	CisJun	203780	0.0456536637	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
NEDD4L	TaeGut	203780	0.0021612819	Z	Taeniopygia guttata (Group I: Z)
NEDD4L	LocLus	203780	0.000237648	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
uncharacterized4	AcrSch	209240	0.0118869066	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
uncharacterized4	AegCau	209240	0.001606439	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
uncharacterized4	CetCet	209240	0.000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
uncharacterized4	CecDau	209240	0.0047931229	Z + 4A	Cecropis daurica (Group II: Z, 4A)
uncharacterized4	LocLus	209240	0.0031883366	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
uncharacterized4	PhyCol	209240	0.000002	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
uncharacterized4	TaeGut	209240	0.00410639	Z	Taeniopygia guttata (Group I: Z)
uncharacterized4	PanBia	209240	0.0024304769	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
uncharacterized4	FicAlb	209240	0.000002	Z	Ficedula albicollis (Group I: Z)
uncharacterized4	EreAlp	209240	0.0057282604	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
uncharacterized4	CisJun	209240	0.0743370638	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
uncharacterized4	ArgAlt	209240	0.0024293961	Z + 4A	Argya altirostris (Group II: Z, 4A)
uncharacterized4	SylAtr	209240	0.0056899608	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
uncharacterized4	SylBra	209240	0.0331045598	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
ATP8B1	AcrSch	304375	0.008124007	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
ATP8B1	SylBra	304375	0.0245641702	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
ATP8B1	PanBia	304375	0.0016762459	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
ATP8B1	AlaArv	304375	0.0072683875	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
ATP8B1	EreAlp	304375	0.0029470798	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
ATP8B1	TaeGut	304375	0.007852089	Z	Taeniopygia guttata (Group I: Z)
ATP8B1	FicAlb	304375	0.0009642333	Z	Ficedula albicollis (Group I: Z)
ATP8B1	CecDau	304375	0.0043786556	Z + 4A	Cecropis daurica (Group II: Z, 4A)

ATP8B1	ArgAlt	304375	0.0004825198	Z + 4A	Argya altirostris (Group II: Z, 4A)
ATP8B1	SylAtr	304375	0.0038862546	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
ATP8B1	PycBar	304375	0.0007243062	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
ATP8B1	AegCau	304375	0.0021821069	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
ATP8B1	PhyCol	304375	0.0048252636	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
ATP8B1	CetCet	304375	0.0002432966	Z + 4A	Cettia cetti (Group II: Z, 4A)
ATP8B1	CisJun	304375	0.0670780551	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
ATP8B1	LocLus	304375	0.0029233521	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
NARS1	AcrSch	325874	0.0107903223	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
NARS1	FicAlb	325874	0.0007351254	Z	Ficedula albicollis (Group I: Z)
NARS1	TaeGut	325874	0.0079603928	Z	Taeniopygia guttata (Group I: Z)
NARS1	SylBra	325874	0.0306031243	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
NARS1	PanBia	325874	0.0007363987	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
NARS1	AlaArv	325874	0.0229171568	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
NARS1	EreAlp	325874	0.0068416192	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
NARS1	CecDau	325874	0.0028466172	Z + 4A	Cecropis daurica (Group II: Z, 4A)
NARS1	ArgAlt	325874	0.000002021	Z + 4A	Argya altirostris (Group II: Z, 4A)
NARS1	SylAtr	325874	0.0067863904	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
NARS1	PycBar	325874	0.0003576931	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
NARS1	CisJun	325874	0.0716598278	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
NARS1	PhyCol	325874	0.0067545453	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
NARS1	AegCau	325874	0.0028417192	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
NARS1	CetCet	325874	0.000002021	Z + 4A	Cettia cetti (Group II: Z, 4A)
NARS1	LocLus	325874	0.0010619864	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
FECH	AcrSch	334740	0.0038078002	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
FECH	AegCau	334740	0.0038157581	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
FECH	PhyCol	334740	0.0056918878	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
FECH	CetCet	334740	0.0000020054	Z + 4A	Cettia cetti (Group II: Z, 4A)
FECH	LocLus	334740	0.0009511806	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
FECH	PycBar	334740	0.0028737255	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
FECH	EreAlp	334740	0.0028089374	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
FECH	AlaArv	334740	0.0126205913	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
FECH	PanBia	334740	0.0000020054	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
FECH	SylBra	334740	0.0158045777	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
FECH	FicAlb	334740	0.0000020054	Z	Ficedula albicollis (Group I: Z)
FECH	TaeGut	334740	0.0057407383	Z	Taeniopygia guttata (Group I: Z)
FECH	SylAtr	334740	0.0019107906	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
FECH	ArgAlt	334740	0.0000020054	Z + 4A	Argya altirostris (Group II: Z, 4A)
FECH	CecDau	334740	0.0009484517	Z + 4A	Cecropis daurica (Group II: Z, 4A)
FECH	CisJun	334740	0.0656723655	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
ST8SIA3	AcrSch	370724	0.0143212729	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
ST8SIA3	AegCau	370724	0.0045649002	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
ST8SIA3	PycBar	370724	0.0036322286	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
ST8SIA3	SylAtr	370724	0.0027422057	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
ST8SIA3	ArgAlt	370724	0.000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
ST8SIA3	CetCet	370724	0.0002785822	Z + 4A	Cettia cetti (Group II: Z, 4A)
ST8SIA3	CecDau	370724	0.004756795	Z + 4A	Cecropis daurica (Group II: Z, 4A)
ST8SIA3	SylBra	370724	0.0297862984	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
ST8SIA3	AlaArv	370724	0.0159106175	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
ST8SIA3	EreAlp	370724	0.0031051955	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
ST8SIA3	PanBia	370724	0.0026306523	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
ST8SIA3	FicAlb	370724	0.0012495794	Z	Ficedula albicollis (Group I: Z)
ST8SIA3	TaeGut	370724	0.0081982165	Z	Taeniopygia guttata (Group I: Z)
ST8SIA3	CisJun	370724	0.0403147399	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
ST8SIA3	LocLus	370724	0.005500914	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
ST8SIA3	PhyCol	370724	0.0061747505	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
uncharacterized6	AcrSch	379525	0.0122472544	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
uncharacterized6	CetCet	379525	0.000002	Z + 4A	Cettia cetti (Group II: Z, 4A)
uncharacterized6	PhyCol	379525	0.0042180356	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
uncharacterized6	AegCau	379525	0.0014168485	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
uncharacterized6	PycBar	379525	0.0032272329	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
uncharacterized6	SylAtr	379525	0.005685083	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
uncharacterized6	ArgAlt	379525	0.000002	Z + 4A	Argya altirostris (Group II: Z, 4A)
uncharacterized6	PanBia	379525	0.0034871935	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
uncharacterized6	FicAlb	379525	0.0048815513	Z	Ficedula albicollis (Group I: Z)
uncharacterized6	AlaArv	379525	0.0217284161	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*
uncharacterized6	EreAlp	379525	0.0035368974	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
uncharacterized6	SylBra	379525	0.0371697866	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
uncharacterized6	CisJun	379525	0.0514221897	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
uncharacterized6	LocLus	379525	0.0007412627	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
uncharacterized6	CecDau	379525	0.0027459299	Z + 4A	Cecropis daurica (Group II: Z, 4A)
WDR7	AcrSch	400103	0.0047302744	Z + 4A	Acrocephalus schoenobaenus (Group II: Z, 4A)
WDR7	CecDau	400103	0.0028699843	Z + 4A	Cecropis daurica (Group II: Z, 4A)
WDR7	AegCau	400103	0.0036410535	Z + 4A	Aegithalos caudatus (Group II: Z, 4A)
WDR7	PycBar	400103	0.0026219508	Z + 4A	Pycnonotus barbatus (Group II: Z, 4A)
WDR7	SylAtr	400103	0.0036620225	Z + 4A	Sylvia atricapilla (Group II: Z, 4A)
WDR7	ArgAlt	400103	0.0006273122	Z + 4A	Argya altirostris (Group II: Z, 4A)
WDR7	PhyCol	400103	0.0038635312	Z + 4A	Phylloscopus collybita (Group II: Z, 4A)
WDR7	LocLus	400103	0.0026302344	Z + 4A	Locustella luscinioides (Group II: Z, 4A)
WDR7	SylBra	400103	0.029997181	Z + 4A + 8	Sylvietta brachyura (Group IV: Z, 4A, 8)*
WDR7	TaeGut	400103	0.0088934489	Z	Taeniopygia guttata (Group I: Z)
WDR7	FicAlb	400103	0.0014651643	Z	Ficedula albicollis (Group I: Z)
WDR7	CetCet	400103	0.0002023396	Z + 4A	Cettia cetti (Group II: Z, 4A)
WDR7	CisJun	400103	0.1020574347	Z + 4A + 4	Cisticola juncidis (Group III: Z, 4A, 4)*
WDR7	PanBia	400103	0.0012561149	Z + 4A + 3	Panurus biarmicus (Group V: Z, 4A, 3, 5)
WDR7	EreAlp	400103	0.0030857384	Z + 4A + 3	Eremophila alpestris (Group VI: Z, 4A, 3, (5))
WDR7	AlaArv	400103	0.0165255871	Z + 4A + 3 + 5	Alauda arvensis (Group VII: Z, 4A, 3, 5)*

Table S11. Spearman rank statistics (same as Figure 5 and Figure S11).

Species	Rho	<i>P</i> -value	<i>P</i> -value	N genes	Species_tag	Figure
AcrSch	0.71323529	0.001	1.31E-03	17	Acrocephalus schoenobaenus (Group II: Z, 4A)	Figure 5
SylBra	0.33333333	0.191	1.91E-01	17	Sylvietta brachyura (Group IV: Z, 4A, 8)*	Figure S11
AlaArv	0.31470588	0.235	2.35E-01	16	Alauda arvensis (Group VII: Z, 4A,3,5)*	Figure S11
EreAlp	0.34803922	0.171	1.71E-01	17	Eremophila alpestris (Group VI: Z, 4A,3, (5))	Figure 5
PanBia	0.51764706	0.040	4.00E-02	16	Panurus biarmicus (Group V: Z, 4A, 3, 5)	Figure 5
TaeGut	0.83823529	0.000	5.01E-05	16	Taeniopygia guttata (Group I: Z)	Figure 5
FicAlb	-0.1007374	0.700	7.00E-01	17	Ficedula albicollis (Group I: Z)	Figure 5
AegCau	0.69160038	0.002	2.10E-03	17	Aegithalos caudatus (Group II: Z, 4A)	Figure 5
CetCet	0.07633987	0.771	7.71E-01	17	Cettia cetti (Group II: Z, 4A)	Figure 5
CisJun	0.16666667	0.523	5.23E-01	17	Cisticola juncidis (Group III: Z, 4A, 4)*	Figure S11
PhyCol	0.52861789	0.029	2.91E-02	17	Phylloscopus collybita (Group II: Z, 4A)	Figure 5
LocLus	0.55364801	0.021	2.11E-02	17	Locustella luscinioides (Group II: Z, 4A)	Figure 5
CecDau	0.64377695	0.005	5.29E-03	17	Cecropis daurica (Group II: Z, 4A)	Figure 5
SylAtr	-0.245098	0.343	3.43E-01	17	Sylvia atricapilla (Group II: Z, 4A)	Figure S11
ArgAlt	-0.0851801	0.745	7.45E-01	17	Argya altirostris (Group II: Z, 4A)	Figure 5
PycBar	0.27352941	0.305	3.05E-01	16	Pycnonotus barbatus (Group II: Z, 4A)	Figure S11