

S1 Table. Non-avian/mammalian vertebrate used in this study and ERVs identified

Species	Abbreviation	Class	Order	Size (Mb)	ERV No.	Consensus Sequence No.
<i>Anguilla anguilla</i>	An_an	Actinopterygii	Anguilliformes	1018.7	42	5
<i>Anguilla japonica</i>	An_ja	Actinopterygii	Anguilliformes	1151.14	55	7
<i>Anguilla rostrata</i>	An_ro	Actinopterygii	Anguilliformes	1413.05	54	7
<i>Oryzias latipes</i>	Or_la	Actinopterygii	Beloniformes	869.818	76	3
<i>Astyanax mexicanus</i>	As_me	Actinopterygii	Characiformes	1191.24	17	2
<i>Clupea harengus</i>	Cl_ha	Actinopterygii	Clupeiformes	807.712	27	4
<i>Cyprinus carpio</i>	Cy_ca	Actinopterygii	Cypriniformes	1713.64	173	7
<i>Danio rerio</i>	Da_re	Actinopterygii	Cypriniformes	1371.72	157	6
<i>Pimephales promelas</i>	Pi_pr	Actinopterygii	Cypriniformes	1219.33	17	2
<i>Sinocyclocheilus anshuiensis</i>	Si_an	Actinopterygii	Cypriniformes	1632.72	45	3
<i>Sinocyclocheilus grahami</i>	Si_gr	Actinopterygii	Cypriniformes	1750.29	49	4
<i>Sinocyclocheilus rhinocerosus</i>	Si_rh	Actinopterygii	Cypriniformes	1655.79	36	1
<i>Squalius pyrenaicus</i>	Sq_py	Actinopterygii	Cypriniformes	48.1393	4	0
<i>Austrofundulus limnaeus</i>	Au_li	Actinopterygii	Cyprinodontiformes	866.963	147	8
<i>Cyprinodon nevadensis</i>	Cy_ne	Actinopterygii	Cyprinodontiformes	1011.85	18	1
<i>Cyprinodon variegatus</i>	Cy_va	Actinopterygii	Cyprinodontiformes	1035.18	61	4
<i>Fundulus heteroclitus</i>	Fu_he	Actinopterygii	Cyprinodontiformes	1021.9	84	6
<i>Kryptolebias marmoratus</i>	Kr_ma	Actinopterygii	Cyprinodontiformes	680.349	20	3
<i>Nothobranchius furzeri</i>	No_fu	Actinopterygii	Cyprinodontiformes	1242.52	86	6
<i>Nothobranchius kuhntae</i>	No_ku	Actinopterygii	Cyprinodontiformes	5.23461	10	2
<i>Poecilia formosa</i>	Po_fo	Actinopterygii	Cyprinodontiformes	748.923	19	1
<i>Poecilia latipinna</i>	Po_la	Actinopterygii	Cyprinodontiformes	815.145	10	1
<i>Poecilia mexicana</i>	Po_me	Actinopterygii	Cyprinodontiformes	801.711	9	0
<i>Poecilia reticulata</i>	Po_re	Actinopterygii	Cyprinodontiformes	731.622	28	2
<i>Xiphophorus couchianus</i>	Xi_co	Actinopterygii	Cyprinodontiformes	708.396	38	1
<i>Xiphophorus hellerii</i>	Xi_he	Actinopterygii	Cyprinodontiformes	733.802	68	5
<i>Xiphophorus maculatus</i>	Xi_ma	Actinopterygii	Cyprinodontiformes	729.664	47	5
<i>Esox lucius</i>	Es_lu	Actinopterygii	Esociformes	904.453	284	5
<i>Gadus morhua</i>	Ga_mo	Actinopterygii	Gadiformes	824.311	31	4
<i>Lepisosteus oculatus</i>	Le_oc	Actinopterygii	Lepisosteiformes	945.878	52	3
<i>Scleropages formosus</i>	Sc_fo	Actinopterygii	Osteoglossiformes	777.343	26	2

<i>Amphilophus citrinellus</i>	Am_ci	Actinopterygii	Perciformes	844.903	119	7
<i>Boleophthalmus pectinirostris</i>	Bo_pe	Actinopterygii	Perciformes	955.735	11	0
<i>Dicentrarchus labrax</i>	Di_la	Actinopterygii	Perciformes	675.917	41	3
<i>Haplochromis burtoni</i>	Ha_bu	Actinopterygii	Perciformes	831.412	56	5
<i>Labeotropheus fuelleborni</i>	La_fu	Actinopterygii	Perciformes	70.8584	16	2
<i>Labrus bergylta</i>	La_be	Actinopterygii	Perciformes	805.481	94	6
<i>Larimichthys crocea</i>	La_cr	Actinopterygii	Perciformes	648.407	34	0
<i>Lates calcarifer</i>	La_ca	Actinopterygii	Perciformes	668.465	47	2
<i>Maylandia zebra</i>	Ma_ze	Actinopterygii	Perciformes	859.842	101	8
<i>Mchenga conophoros</i>	Mc_co	Actinopterygii	Perciformes	73.4256	8	0
<i>Melanochromis auratus</i>	Me_au	Actinopterygii	Perciformes	68.2386	16	0
<i>Neolamprologus brichardi</i>	Ne_br	Actinopterygii	Perciformes	847.91	43	1
<i>Notothenia coriiceps</i>	No_co	Actinopterygii	Perciformes	636.614	2	1
<i>Oreochromis niloticus</i>	Or_ni	Actinopterygii	Perciformes	927.696	147	14
<i>Pampus argenteus</i>	Pa_ar	Actinopterygii	Perciformes	350.449	17	0
<i>Periophthalmodon schlosseri</i>	Pe_sc	Actinopterygii	Perciformes	679.761	49	6
<i>Periophthalmus magnuspinnatus</i>	Pe_ma	Actinopterygii	Perciformes	701.697	22	1
<i>Pundamilia nyererei</i>	Pu_ny	Actinopterygii	Perciformes	830.133	42	3
<i>Rhamphochromis esox</i>	Rh_es	Actinopterygii	Perciformes	71.2951	6	0
<i>Scartelaos histophorus</i>	Sc_hi	Actinopterygii	Perciformes	695.009	27	1
<i>Stegastes partitus</i>	St_pa	Actinopterygii	Perciformes	800.492	29	2
<i>Thunnus orientalis</i>	Th_or	Actinopterygii	Perciformes	684.497	48	4
<i>Miichthys miiuy</i>	Mi_mi	Actinopterygii	Perciformes	619.301	35	4
<i>Morone saxatilis</i>	Mo_sa	Actinopterygii	Perciformes	585.167	8	0
<i>Gasterosteus aculeatus</i>	Ga_ac	Actinopterygii	Gasterosteiformes	446.611	125	6
<i>Anoplopoma fimbria</i>	An_fi	Actinopterygii	Scorpaeniformes	699.326	26	2
<i>Cottus rhenanus</i>	Co_rh	Actinopterygii	Scorpaeniformes	563.609	5	0
<i>Sebastes nigrocinctus</i>	Se_ni	Actinopterygii	Scorpaeniformes	687.55	13	1
<i>Sebastes rubrivinctus</i>	Se_ru	Actinopterygii	Scorpaeniformes	756.297	18	1
<i>Pseudopleuronectes yokohamae</i>	Ps_yo	Actinopterygii	Pleuronectiformes	547.831	18	1
<i>Cynoglossus semilaevis</i>	Cy_se	Actinopterygii	Pleuronectiformes	470.199	28	2
<i>Salmo salar</i>	Sa_sa	Actinopterygii	Salmoniformes	2966.89	79	2
<i>Takifugu flavidus</i>	Ta_fl	Actinopterygii	Tetraodontiformes	378.032	82	4
<i>Takifugu rubripes</i>	Ta_ru	Actinopterygii	Tetraodontiformes	391.485	21	4
<i>Tetraodon nigroviridis</i>	Te_ni	Actinopterygii	Tetraodontiformes	342.403	48	3
<i>Callorhynchus milii</i>	Ca_mi	Chondrichthyes	Chimaeriformes	974.499	176	6

<i>Leucoraja erinacea</i>	Le_er	Chondrichthyes	Batoidea	1555.46	161	5
<i>Rhincodon typus</i>	Rh_ty	Chondrichthyes	Orectolobiformes	2567.63	349	4
<i>Latimeria chalumnae</i>	La_ch	Sarcopterygii	Coelacanthiformes	2860.59	177	5
<i>Petromyzon marinus</i>	Pet_mar	Petromyzontida	Petromyzontiformes	885.535	14	1
<i>Branchiostoma floridae</i>	Br_fl	Leptocardii	Amphioxiformes	N/A	0	0
<i>Lethenteron camtschaticum</i>	Le_ca	Petromyzontida	Petromyzontiformes	1030.66	0	0
<i>Xenopus tropicalis</i>	Xen_tro	Amphibia	Anura	1440.4	43	4
<i>Xenopus laevis</i>	Xen_lae	Amphibia	Anura	2718.43	78	7
<i>Ambystoma mexicanum</i>	Am_me	Amphibia	Urodela	353.835	1	0
<i>Nanorana parkeri</i>	Nan_par	Amphibia	Anura	2053.87	182	10
<i>Crocodylus porosus</i>	Cr_po	Reptilia	Crocodylia	2049.54	399	18
<i>Apalone spinifera</i>	Ap_sp	Reptilia	Testudines	1931.08	215	19
<i>Chelonia mydas</i>	Ch_my	Reptilia	Testudines	2208.41	320	19
<i>Chrysemys picta bellii</i>	Ch_pi	Reptilia	Testudines	2365.77	409	25
<i>Malaclemys terrapin</i>	Ma_te	Reptilia	Testudines	2439.75	704	29
<i>Pelodiscus sinensis</i>	Pe_si	Reptilia	Testudines	2202.48	198	16
<i>Protobothrops mucrosquamatus</i>	Pr_mu	Reptilia	Squamata	1673.88	337	11
<i>Python bivittatus</i>	Py_bi	Reptilia	Squamata	1435.05	65	6
<i>Thamnophis sirtalis</i>	Th_si	Reptilia	Squamata	1424.9	66	6
<i>Vipera berus</i>	Vi_be	Reptilia	Squamata	1532.39	56	6
<i>Anolis carolinensis</i>	An_ca	Reptilia	Squamata	1799.14	241	5
<i>Pantherophis guttatus</i>	Pa_gu	Reptilia	Squamata	1404.22	82	6
<i>Ophiophagus hannah</i>	Op_ha	Reptilia	Squamata	1594.07	49	6
<i>Crotalus mitchellii</i>	Cr_mi	Reptilia	Squamata	N/A	82	11
<i>Crotalus horridus</i>	Cr_ho	Reptilia	Squamata	1520.33	257	14
<i>Gekko japonicus</i>	Ge_ja	Reptilia	Squamata	2490.27	143	7