Supplementary Materials for

Different sources of allelic variation drove repeated color pattern divergence in cichlid fishes

Sabine Urban, Alexander Nater, Axel Meyer, and Claudius F. Kratochwil

Correspondence to: Claudius F. Kratochwil (claudius.kratochwil@uni-konstanz.de) or Axel Meyer (axel.meyer@uni-konstanz.de)

Table S1. Summary of all samples used in this study. The short-read data has been archived in the NCBI SRA database under the bioproject accession number PRJNA 649899.

Species	Current status (Eschmeyer 2020)	Tribus	Accession	raw reads	Source	Type	Lake	Stripes	Coverage	Picture Reference
Neolamprologus brichardi	Neolamprologus pulcher (synonym)	Lamprologini	SRR077332	206086075	Brawand et al., 2014	Genome	Tanganyika	no	32.22	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Oreochromis niloticus	Oreochromis niloticus	oreochromini	ERR2752240	143645232	Joshi et al., 2018	Genome	Riverine	no	23.30	Fishbase 2017
Astatotilapia calliptera	Astatotilapia calliptera	haplochromini	ERR715540	176133092	Malinsky et al., 2018	Genome	Malawi	no	30.33	Fishbase 2017
Astatotilapia tweddlei	Astatotilapia tweddlei	haplochromini	ERR1743779	242274640	Malinsky et al., 2018	Genome	Malawi	no	41.27	Fishbase 2017
Aulonocara sp. 'gold'	Aulonocara korneliae	haplochromini	ERR715499	143977408	Malinsky et al., 2018	Genome	Malawi	no	25.15	Fishbase 2017, https://www.malawi-guru.de
Aulonocara stuartgranti	Aulonocara stuartgranti (synonym)	haplochromini	ERR715528	120051447	Malinsky et al., 2018	Genome	Malawi	yes	20.60	Fishbase 2017, seriously fish
Aulonocara steveni	Aulonocara stuartgranti (synonym)	haplochromini	ERR721676	52957152	Malinsky et al., 2018	Genome	Malawi	no	8.96	Fishbase 2017
Buccochromis nototaenia	Buccochromis nototaenia	haplochromini	ERR1749420	225340100	Malinsky et al., 2018	Genome	Malawi	no	38.58	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Buccochromis rhoadesii	Buccochromis rhoadesii	haplochromini	ERR266492	60924380	Malinsky et al., 2018	Genome	Malawi	no	10.40	Fishbase 2017
Champsochromis caeruleus	Champsochromis caeruleus	haplochromini	ERR715494	143272556	Malinsky et al., 2018	Genome	Malawi	no	24.84	Fishbase 2017
Cheilochromis euchilus	Cheilochromis euchilus	haplochromini	ERR1749533	186444176	Malinsky et al., 2018	Genome	Malawi	yes	31.94	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Chilotilapia rhoadesii	Chilotilapia rhoadesii	haplochromini	ERR715491	133275799	Malinsky et al., 2018	Genome	Malawi	yes	23.20	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pseudotropheus elongatus	Chindongo elongatus	haplochromini	ERR1749537	189654983	Malinsky et al., 2018	Genome	Malawi	no	32.39	pisces.at
Copadichromis borleyi	Copadichromis borleyi	haplochromini	ERR715505	133976018	Malinsky et al., 2018	Genome	Malawi	no	23.10	Fishbase 2017, Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Copadichromis mloto	Copadichromis mloto	haplochromini	ERR266494	38638544	Malinsky et al., 2018	Genome	Malawi	no	6.56	Konings 2008
Copadichromis quadrimaculatus	Copadichromis quadrimaculatus	haplochromini	ERR299203	49755174	Malinsky et al., 2018	Genome	Malawi	no	8.45	Konings 2008
Copadichromis trimaculatus	Copadichromis trimaculatus	haplochromini	ERR715490	126152148	Malinsky et al., 2018	Genome	Malawi	no	21.77	Konings 2008
Copadichromis virginalis	Copadichromis virginalis	haplochromini	ERR1749451	267294778	Malinsky et al., 2018	Genome	Malawi	no	45.83	Fishbase 2017, Konings 2008
Ctenochromis pectoralis	Ctenochromis pectoralis	haplochromini	ERR1743778	200016833	Malinsky et al., 2018	Genome	Malawi	no	34.17	Fishbase 2017
Ctenopharynx intermedius	Ctenopharynx intermedius	haplochromini	ERR715492	131457755	Malinsky et al., 2018	Genome	Malawi	no	22.71	Fishbase 2017
Ctenopharynx nitidus	Ctenopharynx nitidus	haplochromini	ERR715498	137914946	Malinsky et al., 2018	Genome	Malawi	no	23.80	Konings 2008
Cyathochromis obliquidens	Cyathochromis obliquidens	haplochromini	ERR715510	133265540	Malinsky et al., 2018	Genome	Malawi	yes	22.97	Fishbase 2017
Cynotilapia afra	Cynotilapia afra	haplochromini	ERR715504	127148763	Malinsky et al., 2018	Genome	Malawi	no	21.93	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Cynotilapia axelrodi	Cynotilapia axelrodi	haplochromini	ERR715508	129890610	Malinsky et al., 2018	Genome	Malawi	no	22.42	Fishbase 2017
Cyrtocara moorii	Cyrtocara moorii	haplochromini	ERR1757756	225856323	Malinsky et al., 2018	Genome	Malawi	no	38.63	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Dimidiochromis compressiceps	Dimidiochromis compressiceps	haplochromini	ERR715502	144289386	Malinsky et al., 2018	Genome	Malawi	yes	24.97	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Dimidiochromis kiwinge	Dimidiochromis kiwinge	haplochromini	ERR1822249	227835118	Malinsky et al., 2018	Genome	Malawi	yes	39.07	Konings 2008
Dimidiochromis strigatus	Dimidiochromis strigatus	haplochromini	ERR1749428	228756911	Malinsky et al., 2018	Genome	Malawi	yes	39.26	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Diplotaxodon apogon	Diplotaxodon apogon	haplochromini	ERR1749443	211782984	Malinsky et al., 2018	Genome	Malawi	no	36.19	Konings 2008
Diplotaxodon limnothrissa	Diplotaxodon limnothrissa	haplochromini	ERR1749520	278083573	Malinsky et al., 2018	Genome	Malawi	no	47.72	Konings 2008
Diplotaxodon macrops	Diplotaxodon macrops	haplochromini	ERR715517	148707032	Malinsky et al., 2018	Genome	Malawi	no	25.51	Konings 2008
Fossorochromis rostratus	Fossorochromis rostratus	haplochromini	ERR715516	128991046	Malinsky et al., 2018	Genome	Malawi	yes	22.24	Fishbase 2017
Genyochromis mento	Genyochromis mento	haplochromini	ERR715513	129147423	Malinsky et al., 2018	Genome	Malawi	no	22.34	Konings 2008
Gephyrochromis lawsi	Gephyrochromis lawsi	haplochromini	ERR1749534	237089597	Malinsky et al., 2018	Genome	Malawi	no	40.44	Fishbase 2017
Hemitilapia oxyrhyncha	Hemitilapia oxyrhynchus	haplochromini	ERR1081376	135715686	Malinsky et al., 2018	Genome	Malawi	no	22.67	Fishbase 2017
Iodotropheus sprengerae	Iodotropheus sprengerae	haplochromini	ERR715515	137530539	Malinsky et al., 2018	Genome	Malawi	no	23.65	Fishbase 2017
Labeotropheus fuelleborni	Labeotropheus fuelleborni	haplochromini	ERR1749546	227092455	Malinsky et al., 2018	Genome	Malawi	yes	38.91	Fishbase 2017
Labeotropheus trewavasae	Labeotropheus trewavasae	haplochromini	ERR1749540	228874176	Malinsky et al., 2018	Genome	Malawi	no	39.25	Fishbase 2017
Lethrinops albus	Lethrinops albus	haplochromini	ERR271679	33157252	Malinsky et al., 2018	Genome	Malawi	no	5.65	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban, Konings 2008
Lethrinops auritus	Lethrinops auritus	haplochromini	ERR271681	62789337	Malinsky et al., 2018	Genome	Malawi	no	10.69	Konings 2008
Lethrinops gossei	Lethrinops gossei	haplochromini	ERR1757755	196265006	Malinsky et al., 2018	Genome	Malawi	no	33.60	Konings 2008
Lethrinops lethrinus	Lethrinops lethrinus	haplochromini	ERR315230	54355975	Malinsky et al., 2018	Genome	Malawi	yes	9.26	Konings 2008
Lethrinops longimanus 'redhead'	Lethrinops longimanus	haplochromini	ERR299202	52680168	Malinsky et al., 2018	Genome	Malawi	no	8.95	Konings 2008
Lethrinops longipinnis	Lethrinops longipinnis	haplochromini	ERR1749437	251763927	Malinsky et al., 2018	Genome	Malawi	no	43.18	Konings 2008
Maylandia emmiltos	Maylandia emmiltos	haplochromini	ERR1749446	238606766	Malinsky et al., 2018	Genome	Malawi	no	40.89	Konings 2008
Maylandia fainzilberi	Maylandia fainzilberi	haplochromini	ERR1749449	231409461	Malinsky et al., 2018	Genome	Malawi	no	39.67	Konings 2008
Maylandia zebra	Maylandia zebra	haplochromini	ERR1749503	252239523	Malinsky et al., 2018	Genome	Malawi	no	43.16	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Melanochromis auratus	Melanochromis auratus	haplochromini	ERR1749535	208143902	Malinsky et al., 2018	Genome	Malawi	yes	35.67	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Mylochromis anaphyrmus	Mylochromis anaphyrmus	haplochromini	ERR1749431	232323872	Malinsky et al., 2018	Genome	Malawi	no	39.86	Fishbase 2017
Mylochromis ericotaenia	Mylochromis ericotaenia	haplochromini	ERR1081374	114842074	Malinsky et al., 2018	Genome	Malawi	no	19.61	Konings 2008
Mylochromis lateristriga	Mylochromis lateristriga	haplochromini	ERR715522	133689899	Malinsky et al., 2018	Genome	Malawi	no	23.07	Fishbase 2017
Placidochromis subocularis	Mylochromis subocularis	haplochromini	ERR702306	50707187	Malinsky et al., 2018	Genome	Malawi	yes	8.72	Konings 2008
Astatotilapia sp. 'rujewa'	NA	haplochromini	ERR715501	151076487	Malinsky et al., 2018	Genome	Malawi	no	26.11	Fishbase 2017, Alexandra Tyers
Aulonocara sp. 'blue chilumba'	NA	haplochromini	ERR715500	142931810	Malinsky et al., 2018	Genome	Malawi	no	24.72	https://www.malawi-guru.de
Aulonocara sp. 'minutus'	NA	haplochromini	ERR715507	128352738	Malinsky et al., 2018	Genome	Malawi	no	22.16	Schraml 2005
Aulonocara sp. 'yellow'	NA	haplochromini	ERR715506	130822780	Malinsky et al., 2018	Genome	Malawi	no	22.54	Fishbase 2017
Diplotaxodon sp. 'similis'	NA	haplochromini	ERR1749460	199800141	Malinsky et al., 2018	Genome	Malawi	no	34.23	Konings 2008
Lethrinops sp. 'oliveri'	NA	haplochromini	ERR299205	48911041	Malinsky et al., 2018	Genome	Malawi	no	8.31	Konings 2008
Nimbochromis linni	Nimbochromis linni	haplochromini	ERR271657	52998117	Malinsky et al., 2018	Genome	Malawi	no	9.04	Fishbase 2017
Nimbochromis livingstonii	Nimbochromis livingstonii	haplochromini	ERR271654	43859029	Malinsky et al., 2018	Genome	Malawi	yes	7.45	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Nimbochromis polystigma	Nimbochromis polystigma	haplochromini	ERR271658	49760404	Malinsky et al., 2018	Genome	Malawi	yes	8.48	Fishbase 2017
Oreochromis squamipinnis	Oreochromis squamipinnis	oreochromini	ERR1749536	205831754	Malinsky et al., 2018	Genome	Malawi	no	34.02	https://malawicichlids.com/mw10002.htm
Otopharynx brooksi nkhata	Otopharynx brooksi	haplochromini	ERR266468	44545122	Malinsky et al., 2018	Genome	Malawi	yes	7.58	Konings 2008
Otopharynx lithobates	Otopharynx lithobates	haplochromini	ERR1081382	115424314	Malinsky et al., 2018	Genome	Malawi	yes	19.51	Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Otopharynx speciosus	Otopharynx speciosus	haplochromini	ERR715488	138198756	Malinsky et al., 2018	Genome	Malawi	no	23.87	Fishbase 2017
Otopharynx tetrastigma	Otopharynx tetrastigma	haplochromini	ERR271680	53353662	Malinsky et al., 2018	Genome	Malawi	no	9.10	pisces.at
Pallidochromis tokolosh	Pallidochromis tokolosh	haplochromini	ERR1081381	135077335	Malinsky et al., 2018	Genome	Malawi	no	23.10	Konings 2008
Petrotilapia genalutea	Petrotilapia genalutea	haplochromini	ERR1749403	234177446	Malinsky et al., 2018	Genome	Malawi	no	40.04	https://pbil-verlag.de
Pharyngochromis acuticeps	Pharyngochromis acuticeps	haplochromini	ERR1743777	213796796	Malinsky et al., 2018	Genome	Malawi	no	36.38	Fishbase 2017
Placidochromis electra	Placidochromis electra	haplochromini	ERR271653	50188297	Malinsky et al., 2018	Genome	Malawi	no	8.54	Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Placidochromis johnstoni	Placidochromis johnstoni	haplochromini	ERR271656	51816738	Malinsky et al., 2018	Genome	Malawi	yes	8.84	Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Placidochromis longimanus	Placidochromis longimanus	haplochromini	ERR715524	127145145	Malinsky et al., 2018	Genome	Malawi	no	21.88	Konings 2008
Placidochromis milomo	Placidochromis milomo	haplochromini	ERR271652	70336619	Malinsky et al., 2018	Genome	Malawi	no	11.92	Fishbase 2017
Placidochromis vulgaris	Placidochromis vulgaris	haplochromini	ERR266495	54901487	Malinsky et al., 2018	Genome	Malawi	no	9.37	Konings 2008
Protomelas ornatus	Protomelas ornatus	haplochromini	ERR1749476	242161941	Malinsky et al., 2018	Genome	Malawi	yes	41.53	Fishbase 2017
Protomelas similis	Protomelas similis	haplochromini	ERR1749421	216617540	Malinsky et al., 2018	Genome	Malawi	yes	37.11	https://www.malawi-germany.de
Hemitaeniochromis spilopterus	Protomelas spilopterus	haplochromini	ERR715514	141374189	Malinsky et al., 2018	Genome	Malawi	yes	24.52	Michael K. Oliver 2012
Maylandia livingstonii	Pseudotropheus livingstonii	haplochromini	ERR1749538	241865747	Malinsky et al., 2018	Genome	Malawi	yes	41.46	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Rhamphochromis esox	Rhamphochromis esox	haplochromini	ERR1081383	116902020	Malinsky et al., 2018	Genome	Malawi	yes	20.01	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Rhamphochromis longiceps	Rhamphochromis longiceps	haplochromini	ERR1749496	261729437	Malinsky et al., 2018	Genome	Malawi	yes	44.87	Konings 2008
Rhamphochromis woodi	Rhamphochromis woodi	haplochromini	ERR1749444	206553288	Malinsky et al., 2018	Genome	Malawi	no	35.42	Konings 2008
Sciaenochromis benthicola	Sciaenochromis benthicola	haplochromini	ERR1749441	226148291	Malinsky et al., 2018	Genome	Malawi	yes	38.75	Konings 2008
Serranochromis angusticeps	Serranochromis angusticeps	haplochromini	ERR1743776	213813944	Malinsky et al., 2018	Genome	Malawi	no	36.52	http://v3.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxid=256233
Serranochromis robustus	Serranochromis robustus	haplochromini	ERR1743775	200714265	Malinsky et al., 2018	Genome	Malawi	yes	2.03	https://de.wikipedia.org/
Stigmatochromis guttatus	Stigmatochromis macrorhynchos	haplochromini	ERR1081366	114003916	Malinsky et al., 2018	Genome	Malawi	no	19.43	https://www.cichlid-forum.com/
Stigmatochromis modestus	Stigmatochromis modestus	haplochromini	ERR1081375	122216839	Malinsky et al., 2018	Genome	Malawi	no	20.81	Konings 2008
Taeniochromis holotaenia	Taeniochromis holotaenia	haplochromini	ERR1081369	117653714	Malinsky et al., 2018	Genome	Malawi	yes	20.13	Fishbase 2017
Taeniolethrinops furcicauda	Taeniolethrinops furcicauda	haplochromini	ERR1749434	207169822	Malinsky et al., 2018	Genome	Malawi	no	35.44	Fishbase 2017
Taeniolethrinops praeorbitalis	Taeniolethrinops praeorbitalis	haplochromini	ERR1749433	228060474	Malinsky et al., 2018	Genome	Malawi	no	39.10	Konings 2008
Tramitichromis brevis	Tramitichromis brevis	haplochromini	ERR1749439	215820162	Malinsky et al., 2018	Genome	Malawi	no	36.92	pisces.at
Trematocranus placodon	Trematocranus placodon	haplochromini	ERR1749411	227270423	Malinsky et al., 2018	Genome	Malawi	no	38.94	Fishbase 2017
Tropheops tropheops orangechest	Tropheops tropheops	tropheini	ERR715519	120113923	Malinsky et al., 2018	Genome	Malawi	no	20.66	pisces.at
Tyrannochromis macrostoma	Tyrannochromis macrostoma	haplochromini	ERR1757757	217816513	Malinsky et al., 2018	Genome	Malawi	yes	37.22	Konings 2008
Tyrannochromis nigriventer	Tyrannochromis nigriventer	haplochromini	ERR1749547	231122425	Malinsky et al., 2018	Genome	Malawi	yes	39.68	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis flavus	Haplochromis flavus	haplochromini	SRR2886825	129280487	McGee et al., 2016	Genome	Victoria	yes	21.80	McGee et al. 2016
Haplochromis paucidens	Haplochromis paucidens	haplochromini	SRR2886827	132897800	McGee et al., 2016	Genome	Kivu	no	22.72	Seehausen et al. 2002
Haplochromis vittatus	Haplochromis vittatus	haplochromini	SRR2886826	132705755	McGee et al., 2016	Genome	Kivu	yes	22.70	Fishbase 2018
Haplochromis sp. 'checkmate'	NA	haplochromini	SRR2886828	105382330	McGee et al., 2016	Genome	Victoria	yes	17.45	McGee et al. 2016

Species	Current status (Eschmeyer 2020)	Tribus	Accession	raw reads	Source	Type	Lake	Stripes	Coverage	Picture Reference
Orthochromis sp. 'redcheek'	NA	orthochromini	SRR2886830	129162341	McGee et al., 2016	Genome	Victoria	yes	21.90	McGee et al. 2016
Serranochromis sp. 'checkerboard'	NA	haplochromini	SRR2886829	104061280	McGee et al., 2016	Genome	Victoria	yes	17.67	McGee et al. 2016
Pundamilia nyererei	Pundamilia nyererei	haplochromini	SRR4169621	156356385	Meier et al., 2017a	Genome	Victoria	no	26.49	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia nyererei 'Python'	Pundamilia nyererei	haplochromini	SRR4169626	215282545	Meier et al., 2017a	Genome	Victoria	no	36.47	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia pundamilia	Pundamilia pundamilia	haplochromini	SRR4169618	152302017	Meier et al., 2017a	Genome	Victoria	no	25.53	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia pundamilia 'Python'	Pundamilia pundamilia	haplochromini	SRR4169630	143049451	Meier et al., 2017a	Genome	Victoria	no	24.24	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Astatotilapia stappersii	Astatotilapia stappersii	haplochromini	SRR5099812	81770745	Meier et al., 2017b	Genome	Riverine	yes	13.82	Fishbase 2017
Haplochromis gracilior	Haplochromis gracilior	haplochromini	SRR5099858	126687230	Meier et al., 2017b	Genome	Kivu	no	21.57	Snoeks et al. 2012
Haplochromis pharyngalis	Haplochromis pharyngalis	haplochromini	SRR5099819	122386791	Meier et al., 2017b	Genome	Victoria	no	20.76	Fishbase 2017, http://www.african-cichlid.com/Phytophagus.htm
Astatotilapia stappersii	Astatotilapia stappersii	haplochromini	SRS3641288	139408467	NA	Genome	Riverine	yes	23.96	Fishbase 2017
Astatotilapia stappersii	Astatotilapia stappersii	haplochromini	SRS3641317	130750083	NA	Genome	Riverine	yes	22.40	Fishbase 2017
Haplochromis latifasciatus	Haplochromis latifasciatus	haplochromini	SRR5221056	405772473	NA	Genome	Victoria	no	67.41	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Abactochromis labrosus	Abactochromis labrosus	haplochromini	this study	884717	SRR1294599	Target enrichment	Malawi	yes	56.53	Schraml 1998, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Altolamprologus calvus	Altolamprologus calvus	haplochromini	this study	2465437	SRR1294620	Target enrichment	Tanganyika	no	163.27	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus fasciatus	Altolamprologus fasciatus	lamprologini	this study	582161	SRR1294606	Target enrichment	Tanganyika	no	42.62	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Aristochromis christyi	Aristochromis christyi	haplochromini	this study	761915	SRR1294570	Target enrichment	Malawi	no	60.21	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Astatoreochromis alluaudi	Astatoreochromis alluaudi	haplochromini	this study	2231308	SRR1294560	Target enrichment	Victoria	no	177.60	Fishbase 2017
Astatotilapia burtoni	Astatotilapia burtoni	haplochromini	this study	1331496	SRR1294551	Target enrichment	Tanganyika	yes	97.84	Genner et al. 2015
Astatotilapia calliptera	Astatotilapia calliptera	haplochromini	this study	2837277	SRR1294612	Target enrichment	Malawi	no	190.66	Fishbase 2017
Astatotilapia stappersii	Astatotilapia stappersii	haplochromini	this study	1940153	SRR1294542	Target enrichment	Riverine	yes	126.97	Fishbase 2017
Aulonocara jacobfreibergi	Aulonocara jacobfreibergi	haplochromini	this study	1748491	SRR1294584	Target enrichment	Malawi	yes	124.83	Schraml 2005
Buccochromis nototaenia	Buccochromis nototaenia	haplochromini	this study	556220	SRR1294611	Target enrichment	Malawi	no	47.57	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Cheilochromis euchilus	Cheilochromis euchilus	haplochromini	this study	2069090	SRR1294609	Target enrichment	Malawi	yes	157.15	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Chilotilapia rhoadesii	Chilotilapia rhoadesii	haplochromini	this study	1920619	SRR1294608	Target enrichment	Malawi	yes	104.41	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pseudotropheus demasoni	Chindongo demasoni	haplochromini	this study	415936295	SRR1294616	Genome	Malawi	no	71.43	Fishbase 2017, pisces.at
Pseudotropheus demasoni	Chindongo demasoni	haplochromini	this study	7330094	SRR1294540	Target enrichment	Malawi	no	323.50	Fishbase 2017, pisces.at
Pseudotropheus flavus	Chindongo flavus	haplochromini	this study	1327964	SRR1294539	Target enrichment	Malawi	no	90.61	Van Steenberge et al. 2015
Copadichromis borleyi	Copadichromis borleyi	haplochromini	this study	SRR192529	SRR1294628	Genome	Malawi	no	101.25	Fishbase 2017, Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Copadichromis borleyi	Copadichromis borleyi	haplochromini	this study	767736	SRR1294607	Target enrichment	Malawi	no	52.16	Fishbase 2017, Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Cyathochromis obliquidens	Cyathochromis obliquidens	haplochromini	this study	1328172	SRR1294604	Target enrichment	Malawi	yes	113.65	Fishbase 2017
Cynotilapia afra	Cynotilapia afra	haplochromini	this study	2378369	SRR1294603	Target enrichment	Malawi	no	178.97	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Cyprichromis leptosoma	Cyprichromis leptosoma	cyprichromini	this study	1896044	SRR1294621	Target enrichment	Tanganyika	no	142.56	Fishbase 2017
Cyrtocara moorii	Cyrtocara moorii	haplochromini	this study	1605648	SRR1294602	Target enrichment	Malawi	no	126.98	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Dimidiochromis compressiceps	Dimidiochromis compressiceps	haplochromini	this study	1703250	SRR1294601	Target enrichment	Malawi	yes	115.88	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Dimidiochromis strigatus	Dimidiochromis strigatus	haplochromini	this study	1599911	SRR1294600	Target enrichment	Malawi	yes	128.36	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Eretmodus marksmithi	Eretmodus marksmithi	eretmodini	this study	2277147	SRR1294598	Target enrichment	Tanganyika	no	172.80	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Exochochromis anagenys	Exochochromis anagenys	haplochromini	this study	1327193	SRR1294597	Target enrichment	Malawi	no	107.50	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Fossorochromis rostratus	Fossorochromis rostratus	haplochromini	this study	2862726	SRR1294596	Target enrichment	Malawi	yes	191.23	Fishbase 2017
Genyochromis mento	Genyochromis mento	haplochromini	this study	1226323	SRR1294595	Target enrichment	Malawi	no	14.71	Konings 2008
Haplochromis aeneocolor	Haplochromis aeneocolor	haplochromini	this study	1743617	SRR1294614	Target enrichment	Victoria	yes	172.02	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis chilotes	Haplochromis chilotes	haplochromini	this study	378805861	SRR1294623	Genome	Victoria	yes	64.67	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis ishmaeli	Haplochromis ishmaeli	haplochromini	this study	130804732	SRR1294561	Genome	Victoria	yes	22.53	http://www.african-cichlid.com/ishmaeli.htm
Haplochromis melanopterus	Haplochromis melanopterus	haplochromini	this study	1826735	SRR1294592	Target enrichment	Victoria	no	127.36	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis paropius	Haplochromis paropius	haplochromini	this study	2422015	SRR1294593	Target enrichment	Victoria	yes	41.40	McGee et al. 2016, Snoeks et al. 2012
Haplochromis paropius	Haplochromis paropius	haplochromini	this study	301777843	SRR1294624	Genome	Victoria	yes	51.77	McGee et al. 2016, Snoeks et al. 2012
Haplochromis phytophagus not-striped	Haplochromis phytophagus	haplochromini	this study	1251320	SRR1294617	Target enrichment	Victoria	no	75.72	Fishbase 2017, http://www.african-cichlid.com/Phytophagus.htm
Haplochromis phytophagus striped	Haplochromis phytophagus	haplochromini	this study	652076	SRR1294613	Target enrichment	Victoria	yes	73.28	Fishbase 2017, http://www.african-cichlid.com/Phytophagus.htm
Haplochromis sauvagei	Haplochromis sauvagei	haplochromini	this study	498308643	SRR1294583	Genome	Victoria	yes	84.82	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis sauvagei	Haplochromis sauvagei	haplochromini	this study	2866584	SRR1294588	Target enrichment	Victoria	yes	102.06	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis serranus	Haplochromis serranus	haplochromini	this study	1356935	SRR1294622	Target enrichment	Victoria	yes	17.79	Schedel et al. 2010, https://www.aquaportail.com/fiche-poisson-2042-haplochromis-snoeksi.html
Haplochromis serranus	Haplochromis serranus	haplochromini	this study	126188301	SRR1294587	Genome	Victoria	yes	21.39	Schedel et al. 2010, https://www.aquaportail.com/fiche-poisson-2042-haplochromis-snoeksi.html
Haplochromis thereuterion	Haplochromis thereuterion	haplochromini	this study	1633840	SRR1294586	Target enrichment	Victoria	yes	21.89	McGee et al. 2016, Snoeks et al. 2012
Haplochromis thereuterion	Haplochromis thereuterion	haplochromini	this study	155804079	SRR1294552	Genome	Victoria	yes	26.47	McGee et al. 2016, Snoeks et al. 2012
Haplochromis vonlinnei	Haplochromis vonlinnei	haplochromini	this study	3953691	SRR1294585	Target enrichment	Victoria	yes	47.67	https://www.aquaimfo.org/article/haplotaxodon-trifasciatus/
Julidochromis dickfeldi	Julidochromis dickfeldi	lamprologini	this study	1647472	SRR1294582	Target enrichment	Tanganyika	yes	126.62	Fishbase 2017
Julidochromis marlieri	Julidochromis marlieri	lamprologini	this study	1629014	SRR1294580	Target enrichment	Tanganyika	yes	504.90	Fishbase 2017
Julidochromis ornatus	Julidochromis ornatus	lamprologini	this study	7445325	SRR1294581	Target enrichment	Tanganyika	yes	309.43	Fishbase 2017
Julidochromis transcriptus	Julidochromis transcriptus	lamprologini	this study	523264	SRR1294579	Target enrichment	Tanganyika	yes	37.76	Fishbase 2017
Labeotropheus fuelleborni	Labeotropheus fuelleborni	haplochromini	this study	1395219	SRR1294578	Target enrichment	Malawi	yes	106.76	Fishbase 2017
Labidochromis caeruleus	Labidochromis caeruleus	haplochromini	this study	674482	SRR1294577	Target enrichment	Malawi	no	37.02	Fishbase 2017
Neolamprologus multifasciatus	Lamprologus multifasciatus	lamprologini	this study	792870	SRR1294557	Target enrichment	Tanganyika	no	48.76	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Lamprologus meleagris	Lamprologus stappersi	lamprologini	this study	1559713	SRR1294576	Target enrichment	Tanganyika	yes	80.80	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Lepidiolamprologus kendalli	Lepidiolamprologus kendalli	lamprologini	this study	183196	SRR1294574	Target enrichment	Tanganyika	yes	13.62	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban,Fishbase 2017
Lethrinops albus	Lethrinops albus	haplochromini	this study	1220604	SRR1294573	Target enrichment	Malawi	no	81.62	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban, Konings 2008
Pseudotropheus lombardoi	Maylandia lombardoi	haplochromini	this study	1502827	SRR1294538	Target enrichment	Malawi	no	106.06	Fishbase 2017
Maylandia zebra	Maylandia zebra	haplochromini	this study	144741889	SRR1294625	Genome	Malawi	no	24.82	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Melanochromis auratus	Melanochromis auratus	haplochromini	this study	397167060	SRR1294572	Genome	Malawi	yes	68.21	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Melanochromis auratus	Melanochromis auratus	haplochromini	this study	1361355	SRR1294571	Target enrichment	Malawi	yes	74.48	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Melanochromis kaskazini	Melanochromis kaskazini	haplochromini	this study	3897367	SRR1294567	Target enrichment	Malawi	yes	248.31	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Mylochromis lateristriga	Mylochromis lateristriga	haplochromini	this study	133689899	SRR1294566	Target enrichment	Malawi	no	70.91	Fishbase 2017
Mylochromis mola	Mylochromis mola	haplochromini	this study	403811405	SRR1294626	Genome	Malawi	no	69.56	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Mylochromis mola	Mylochromis mola	haplochromini	this study	2118459	SRR1294565	Target enrichment	Malawi	no	140.23	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Haplochromis sp. 'orange rock hunter'	NA	haplochromini	this study	2744398	SRR1294615	Target enrichment	Victoria	yes	22.39	Fishbase 2017
Haplochromis sp. 'orange rock hunter'	NA	haplochromini	this study	151487703	SRR1294627	Genome	Victoria	yes	26.04	Fishbase 2017
Naevochromis chrysogaster	Naevochromis chrysogaster	haplochromini	this study	1293591	SRR1294564	Target enrichment	Malawi	no	100.99	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus buescheri 'Kachese'	Neolamprologus buescheri	lamprologini	this study	4526192	SRR1294562	Target enrichment	Tanganyika	yes	292.51	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus buescheri 'Kamakonde'	Neolamprologus buescheri	lamprologini	this study	4891487	SRR1294630	Target enrichment	Tanganyika	no	266.66	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus caudopunctatus	Neolamprologus caudopunctatus	lamprologini	this study	1305682	SRR1294629	Target enrichment	Tanganyika	no	84.21	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus longicaudatus	Neolamprologus longicaudatus	lamprologini	this study	2922178	SRR1294558	Target enrichment	Tanganyika	yes	218.38	Pisces.at, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus prochilus	Neolamprologus prochilus	lamprologini	this study	1201936	SRR1294556	Target enrichment	Tanganyika	no	80.31	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus daffodil	Neolamprologus pulcher (synonym)	lamprologini	this study	3341787	SRR1294559	Target enrichment	Tanganyika	no	223.11	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Neolamprologus similis	Neolamprologus similis	lamprologini	this study	950449	SRR1294575	Target enrichment	Tanganyika	no	68.64	Pisces.at, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Nimbochromis livingstonii	Nimbochromis livingstonii	haplochromini	this study	1356184	SRR1294563	Target enrichment	Malawi	yes	95.98	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Nyassachromis prostoma	Nyassachromis prostoma	haplochromini	this study	2530555	SRR1294555	Target enrichment	Malawi	yes	173.64	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Ophthalmotilapia ventralis	Ophthalmotilapia ventralis	ectodini	this study	1929558	SRR1294554	Target enrichment	Tanganyika	no	131.19	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Oreochromis variabilis	Oreochromis variabilis	oreochromini	this study	2588813	SRR1294553	Target enrichment	Victoria	no	123.06	Fishbase 2017, http://www.fishbiosystem.ru/PERCIFORMES/Cichlidae/Oreochromis_variabilis2.html
Otopharynx lithobates	Otopharynx lithobates	haplochromini	this study	1514533	SRR1294550	Target enrichment	Malawi	yes	111.11	Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Petrotilapia nigra	Petrotilapia nigra	haplochromini	this study	2860662	SRR1294549	Target enrichment	Malawi	yes	202.56	Fishbase 2017
Placidochromis johnstoni	Placidochromis johnstoni	haplochromini	this study	1344567	SRR1294548	Target enrichment	Malawi	yes	107.66	Konings 2008, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Placidochromis milomo	Placidochromis milomo	haplochromini	this study	1011310	SRR1294547	Target enrichment	Malawi	no	57.57	Fishbase 2017
Protomelas annectens	Protomelas annectens	haplochromini	this study	823607	SRR1294546	Target enrichment	Malawi	yes	59.63	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Protomelas fenestratus	Protomelas fenestratus	haplochromini	this study	2474136	SRR1294545	Target enrichment	Malawi	yes	183.32	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Protomelas taeniolatus	Protomelas taeniolatus	haplochromini	this study	1289509	SRR1294544	Target enrichment	Malawi	yes	86.40	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pseudocrenilabrus multicolor	Pseudocrenilabrus multicolor	haplochromini	this study	3130089	SRR1294543	Target enrichment	Victoria	yes	179.06	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Simochromis babaulti	Pseudosimochromis babaulti	tropheini	this study	16605636	SRR1294535	Target enrichment	Tanganyika	no	714.65	Fishbase 2017, pisces.at
Melanochromis cyaneorhabdos	Pseudotropheus cyaneorhabdos	haplochromini	this study	439629520	SRR1294605	Genome	Malawi	yes	75.65	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Melanochromis cyaneorhabdos	Pseudotropheus cyaneorhabdos	haplochromini	this study	2880684	SRR1294569	Target enrichment	Malawi	yes	224.13	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pseudotropheus johannii	Pseudotropheus johannii	haplochromini	this study	170486989	SRR1294541	Genome	Malawi	yes	28.96	Fishbase 2017, https://my-fish.org/fishothek/zierfische/p/pseudotropheus-crabro/
Pseudotropheus johannii	Pseudotropheus johannii	haplochromini	this study	3315886	SRR1294568	Target enrichment	Malawi	yes	241.26	Fishbase 2017, https://my-fish.org/fishothek/zierfische/p/pseudotropheus-crabro/
Pundamilia nyererei	Pundamilia nyererei	haplochromini	this study	388599726	SRR1294594	Genome	Victoria	no	66.22	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia pundamilia 'Kissenda'	Pundamilia pundamilia	haplochromini	this study	2959845	SRR1294591	Target enrichment	Victoria	no	201.34	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia pundamilia 'Makobe'	Pundamilia pundamilia	haplochromini	this study	741242	SRR1294590	Target enrichment	Victoria	no	69.32	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Pundamilia pundamilia 'Senga'	Pundamilia pundamilia	haplochromini	this study	1297962	SRR1294589	Target enrichment	Victoria	no	105.49	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Rhamphochromis esox	Rhamphochromis esox	haplochromini	this study	1431468	SRR1294537	Target enrichment	Malawi	yes	105.34	Fishbase 2017, Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Sciaenochromis fryeri	Sciaenochromis fryeri	haplochromini	this study	13005267	SRR1294536	Target enrichment	Malawi	no	568.39	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Tanganicodus irsacae	Tanganicodus irsacae	eretmodini	this study	1271962	SRR1294534	Target enrichment	Tanganyika	no	97.27	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Telmatochromis bifrenatus	Telmatochromis bifrenatus	lamprologini	this study	2111610	SRR1294610	Target enrichment	Malawi	yes	164.26	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Tropheus moorii	Tropheus moorii	tropheini	this study	7383973	SRR1294533	Target enrichment	Tanganyika	no	363.13	pisces.at
Tyrannochromis nigriventer	Tyrannochromis nigriventer	haplochromini	this study	2939260	SRR1294619	Target enrichment	Malawi	yes	180.84	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban
Variabilichromis moorii	Variabilichromis moorii	lamprologini	this study	1200780	SRR1294618	Target enrichment	Tanganyika	no	87.05	Credit: Jan Gerwin, Claudius Kratochwil, Sabine Urban

Table S2. Summary of the predicted TFBSs for highly associated variants within region LM (90 bp) and overlapping regions LV 1 / LVRS. For LM we compared the non-striped *Pseudotropheus demasoni* (Pdem) with a sequence of the striped *Pseudotropheus cyaneorhabdos* (Pcya) and calculated 'Delta relative score' as: relative score Pdem - relative score Pcya. For LV, we compared the non-striped *Pundamilia nyererei* (Pnye) with a sequence of the striped *Haplochromis sauvagei* (Hsau). Information about location of gene expression was collected from ZFIN (https://zfin.org/).

Rel. Pos./			LV 1 / LVRS (overlapping region, 538 bp)							
Pos. Scaffold	Matrix ID	Name	Score Pnye	Score Hsau	Relative score Pnye	Relative score Hsau	TF binding site Pnye	TF binding site Hsau	Delta relative score	Expressed in
1/441,862	MA0632.1	Tcfl5	5.24906	-0.786154	0.850999305	0.659851397	acctcGggaa	acctcTggaa	0.19	NA
	MA0632.1	Tcfl5	5.24906	-0.786154	0.850999305	0.659851397	ttccGaggt	ttccAgaggt	0.19	NA
	MA0080.1	SPi1	7.72714	5.63166	0.95872444	0.87078494	Gggaac	Tggaac	0.09	mesoderm, kidney, liver, yolk, brain, whole organism
	MA0510.1	RFX5	9.41323	2.37858	0.881501523	0.801297159	aacctcGggaacagc	aacctcTggaacagc	0.08	MHC class II deficiency in humans
	MA0081.1	SPIB	7.21747	5.99508	0.888895152	0.847133219	tcGggaa	tcTggaa	0.04	NA
	MA0098.1	ETS1	4.12173	4.64436	0.830462283	0.854569672	gttccC	gttccA	-0.02	mesoderm, neural crest, somite, whole organism
	MA0152.1	NFATC2	6.42094	8.59374	0.817847408	0.897985281	tgttccC	tgttccA	-0.08	nuclear factor of activated T cells
	MA0671.1	NFIX	1.5192	5.3713	0.781271681	0.871959945	tgttccCga	tgttccAga	-0.09	central nervous system, muscle, mesoderm, somite, whole organism
	MA1649.1	ZBTB12	8.45914	12.8165	0.863030553	0.964682273	ctcGggaacag	ctcTggaacag	-0.10	zinc finger and BTB domain containing 12
	MA0698.1	ZBTB18	2.05887	10.6473	0.777582113	0.888706636	gttccCgaggttc	gttccAgaggttc	-0.11	cerebellum, telencephalon, hypothalamus
	MA1579.1	ZBTB26	4.09234	9.92644	0.755622864	0.87511298	tgttccCgaggttct	tgttccAgaggttct	-0.12	NA
	MA1123.1	TWIST1	1.86835	9.14518	0.723876747	0.86691666	gttccCgaggttc	gttccAgaggttc	-0.14	whole organnism, neural crest, brain, gut, mesoderm, somite
	MA1123.2	TWIST1	1.80727	9.04444	0.719854705	0.8631341	gttccCgaggttc	gttccAgaggttc	-0.14	whole organnism, neural crest, brain, gut, mesoderm, somite
	MA0161.1	NFIC	1.94788	6.28526	0.740440017	0.885714517	cGggaa	cTggaa	-0.15	NA, nuclear factor I/C
	Matrix ID	Name	Score Pnye	Score Hsau	Relative score Pnye	Relative score Hsau	TF binding site Pnye	TF binding site Hsau	Delta relative score	Expressed in
165/442,026	MA0877.2	BARHL1	5.02834	-2.94698	0.864909215	0.684156116	ttaAacta	ttaGacta	0.18	diencephalon, hindbrain, retina, hypothalamus, brain
	MA1536.1	NR2C2(var.2)	5.03433	-3.96446	0.905144825	0.74080759	tagtTtaa	tagtCtaa	0.16	brain, retina, telencephalon
	MA0635.1	BARHL2	7.38866	-1.33995	0.904134859	0.74164983	tttaAactat	tttaGactat	0.16	midbrain, hindbrain, retina, telencephalon
	MA0619.1	LIN54	10.2876	3.29444	0.941586937	0.802931715	gtttaAact	gtttaGact	0.14	whole organism
	MA0619.1	LIN54	9.77514	2.78201	0.931426667	0.792771454	gtTtaaaca	gtCtaaaca	0.14	whole organism
	MA1534.1	NR1I3	8.67247	1.75317	0.909018439	0.801168336	ttaAactat	ttaGactat	0.11	constitutive androstane receptor
	MA0033.1	FOXL1	5.88864	4.08095	0.871907443	0.789979077	aAactata	aGactata	0.08	brain, lateral mesoderm, whole organism
	MA0033.2	FOXL1	8.17045	5.80854	0.924997273	0.881744068	Ttaaaca	Ctaaaca	0.04	brain, lateral mesoderm, whole organism
	MA0481.3	FOXP1	8.75677	7.80292	0.871394914	0.850178005	gtTtaaacatc	gtCtaaacatc	0.02	central nervous system, gut, heart, retina, whole organism
	MA0148.4	FOXA1	10.3587	9.3637	0.878605463	0.859225739	gtTtaaacatct	gtCtaaacatct	0.02	endoderm, digestive system, nervous system, liver, gut
	MA1683.1	FOXA3	9.49954	8.69625	0.884327905	0.865917483	gtTtaaacatc	gtCtaaacatc	0.02	digestive system, endoderm, ectoderm, liver, pancreas
	MA0845.1	FOXB1	8.22952	7.28203	0.853762209	0.83884597	agtTtaaacat	agtCtaaacat	0.01	central nervous system, neural plate, rhombomere, whole organism
	MA0047.3	FOXA2	7.9584	7.47513	0.854893183	0.845252648	gtTtaaacatc	gtCtaaacatc	0.01	brain, endoderm, floor plate, gut, mesoderm, pharynx, whole organism
	MA1103.2	FOXK2	8.76522	8.44889	0.86485895	0.857375429	gtTtaaacatc	gtCtaaacatc	0.01	NA
	MA1103.1	FOXK2	9.16382	9.10247	0.876385881	0.875050714	gtTtaaacatc	gtCtaaacatc	0.00	NA
	MA0031.1	FOXD1	9.41226	9.41226	0.895821579	0.895821579	Ttaaacat	Ctaaacat	0.00	neural crest, diencephalon,forebrain, eye
	MA0613.1	FOXG1	7.32076	7.32076	0.872632578	0.872632578	Ttaaacat	Ctaaacat	0.00	brain, immature eye, telencephalon
	MA0157.2	FOXO3	7.4599	7.4599	0.857472117	0.857472117	Ttaaacat	Ctaaacat	0.00	brain, eye, head, whole organism
	MA0849.1	FOXO6	4.91252	4.91252	0.857142856	0.857142856	Ttaaaca	Ctaaaca	0.00	brain, central nervous system, eye, whole oranism
	MA0850.1	FOXP3	6.14419	6.14419	0.870272076	0.870272076	Ttaaaca	Ctaaaca	0.00	gill, gut, kidney, liver, spleen, whole organism
	MA1606.1	Foxf1	9.57814	9.61685	0.888419647	0.889237138	gtTtaaacatc	gtCtaaacatc	0.00	swim bladder, neurocranium, gut, pharyngeal arch
	MA0635.1	BARHL2	5.81157	5.95352	0.874776918	0.877419475	tCtaaacatc	tTtaaacatc	0.00	midbrain, hindbrain, retina, telencephalon
	MA0847.1	FOXD2	6.70681	7.34323	0.895252836	0.908750013	Ttaaaca	Ctaaaca	-0.01	diencephalon, pharyngeal arch, mesoderm
	MA0848.1	FOXO4	4.6006	5.33769	0.839607272	0.854179421	Ttaaaca	Ctaaaca	-0.01	brain, endoderm, floor plate, gut, mesoderm, pharynx, whole organism
	MA0847.2	FOXD2	5.95155	8.14511	0.8409947	0.869113259	atagtTtaaacat	atagtCtaaacat	-0.03	diencephalon, hindbrain, retina, hypothalamus, brain
	MA0877.2	BARHL1	6.34418	7.71668	0.894731428	0.925837941	Ttaaacat	Ctaaacat	-0.03	diencephalon, hindbrain, retina, hypothalamus, brain
	MA0042.2	FOXI1	5.09823	6.72807	0.844790514	0.875928998	Ttaaaca	Ctaaaca	-0.03	head, neural crest, ectoderm, pharyngeal arch, whole organism
	MA0032.2	FOXC1	6.30222	8.4066	0.848093766	0.879682651	agtTtaaacat	agtCtaaacat	-0.03	head, neural crest, mesenchyme, whole organism
	MA0157.1	FOXO3	8.54581	10.2323	0.879195868	0.935849513	tTtaaaca	tCtaaaca	-0.06	brain, eye, head, whole organism
	MA0040.1	Foxq1	7.82781	10.0822	0.802278252	0.860198535	agatgtttaAa	agatgtttaGa	-0.06	gut, head, whole organism
	MA1557.1	SMAD5	0.609555	7.56676	0.745580575	0.853186773	tgtttaAact	tgtttaGact	-0.11	whole organism
	MA0795.1	SMAD3	0.951196	8.30933	0.744440214	0.855792194	agtTtaaaca	agtCtaaaca	-0.11	whole organism
	MA0795.1	SMAD3	0.329211	8.16277	0.735027601	0.85357428	tgtttaAact	tgtttaGact	-0.12	whole organism
	MA1557.1	SMAD5	0.703234	8.40279	0.747029483	0.866117418	agtTtaaaca	agtCtaaaca	-0.12	whole organism
	Matrix ID	Name	Score Pnye	Score Hsau	Relative score Pnye	Relative score Hsau	TF binding site Pnye	TF binding site Hsau	Delta relative score	Expressed in
327/442,188	MA0503.1	Nkx2-5(var.2)	8.32873	1.14216	0.880617794	0.670866438	aaccactcacC	aaccactcacT	0.21	heart development
	MA1535.1	NR2C1	6.27165	-2.30434	0.892190448	0.727037684	tgaGgtgag	tgaAgtgag	0.17	whole organism
	MA1536.1	NR2C2(var.2)	6.28275	-2.71604	0.927943733	0.763606498	gaGgtgag	gaAgtgag	0.16	brain, retina, telencephalon
	MA0684.2	RUNX3	9.29699	2.98491	0.875359761	0.734799067	ctcacCtcacat	ctcacTtcacat	0.14	cranial ganglion, endoderm, mouth, trigeminal ganglion
	MA0103.2	ZEB1	6.33669	-1.56717	0.852989691	0.718799895	actcacCtc	actcacTtc	0.13	cranial ganglionn neural plate, pharyngeal arch, somite
	MA0103.1	ZEB1	6.50331	4.03184	0.89048913	0.792377334	cacCtc	cacata	0.10	cranial ganglionn neural plate, pharyngeal arch, somite
	MA0595.1	SREBF1	12.639	8.85859	0.946416672	0.863402917	ctcacCtcac	ctcacTtcac	0.08	female organism, liver, whole organism
	MA0596.1	SREBF2	9.92712	6.97638	0.874217711	0.805305846	gtgaGgtgag	gtgaAgtgag	0.07	liver, whole organism
	MA0018.2	CREB1	7.67419	5.90353	0.857381977	0.792537807	tgaGgtga	tgaAgtga	0.06	brain, whole organism
	MA0672.1	NKX2-3	7.18589	4.95442	0.879506141	0.8412033	accactcacC	accactcacT	0.04	pharyngeal arch, pharynx, gut, heart, endoderm, ectoderm
	MA0642.1	EN2	6.05256	4.76108	0.856546061	0.828558996	accactcacC	accactcacT	0.03	midbrain hindbrain boundary, muscle pioneer, somite, whole organism
	MA0673.1	NKX2-8	6.08795	4.83714	0.880624971	0.858007585	ccactcacC	ccactcacT	0.02	NA

327/442,188	MA0060.3	NFYA	9.23508	8.31244	0.87125057	0.854405155	aaccactcacC	aaccactcacT	0.02	whole organism
	MA1645.1	NKX2-2	11.9875	11.5544	0.915185879	0.905989929	aaaccactcacCtc	aaaccactcacTtc	0.01	central nervous system, whole organism
	MA0063.2	NKX2-5	8.7177	8.33619	0.880059179	0.871484624	accactcacCt	accactcacTt	0.01	heart development
	MA1644.1	NFYC	9.01229	8.69976	0.861241272	0.854550606	aaccactcacC	aaccactcacT	0.01	whole organism
	MA1108.2	MXI1	5.65246	5.79324	0.869655466	0.872285951	Ctcacatact	Ttcacatact	0.00	central nervous system
	MA0498.2	MEIS1	3.09338	3.49889	0.846253803	0.854841342	Ctcacat	Ttcacat	-0.01	eye, hindbrain, midbrain, whole organism
	MA0033.1	FOXL1	4.66175	7.13362	0.816302338	0.928332544	Ctcacata	Ttcacata	-0.11	brain, lateral mesoderm, whole organism
	MA0673.1	NKX2-8	1.17062	7.38472	0.791708566	0.904073433	tcacCtcac	tcacTtcac	-0.11	NA
	MA0672.1	NKX2-3	-2.77091	5.71387	0.708599167	0.854239082	ctcacCtcac	ctcacTtcac	-0.15	pharyngeal arch, pharynx, gut, heart, endoderm, ectoderm
	MA1116.1	RBPJ	-1.2426	6.25456	0.697539026	0.854249174	tatgtgaGgt	tatgtgaAgt	-0.16	eye, head, midbrain, whole organism
	MA0122.1	Nkx3-2	3.0401	7.40439	0.712259854	0.875128167	tgaGgtgag	tgaAgtgag	-0.16	whole organism, pharyngeal arch, head
	MA0080.1	SPI1	0.28851	5.22724	0.64655272	0.853812965	gtgaGg	gtgaAg	-0.21	mesoderm, kidney, liver, yolk, brain, whole organism
	Matrix ID	**Name**	**Score Pnye**	**Score Hsau**	**Relative score Pnye**	**Relative score Hsau**	**TF binding site Pnye**	**TF binding site Hsau**	**Delta relative score**	**Expressed in**
538/442,399	MA1563.1	SOX18	6.81323	-1.63717	0.906722669	0.692731646	cacactGa	cgcactCa	0.21	axial blood vessel, mesoderm, vasculature, mesoderm
	MA0258.2	ESR2	11.3201	0.66006	0.879314902	0.738489098	ggggcacactGacaa	ggggcgcactCacaa	0.14	epidermis, eye, head, hindbrain, intestine, neuromast
	MA0498.2	MEIS1	9.15158	3.28184	0.974548901	0.850244831	ctGacaa	ctCacaa	0.12	eye, hindbrain, midbrain, whole organism
	MA0078.1	Sox17	7.94585	7.25479	0.88001473	0.857690041	ctctttgtC	ctctttgtG	0.02	endoderm, whole organism, forerunner cell group, whole organism
	MA0514.1	Sox3	6.01595	4.5974	0.854683972	0.833688976	tctttgtCag	tctttgtGag	0.02	whole organism
	MA0867.2	SOX4	11.0411	9.95213	0.938272066	0.918783756	tGacaaagag	tCacaaagag	0.02	central nervous system, neural crest, retina, whole organism
	MA1152.1	SOX15	7.75991	7.20016	0.872336806	0.859767783	tctttgtCag	tctttgtGag	0.01	NA
	MA0143.3	Sox2	5.84852	5.36525	0.85600148	0.847428732	tctttgtC	tctttgtG	0.01	brain, central nervous system, ectoderm, eye, whole organism
	MA0442.2	SOX10	10.8112	11.0347	0.925670276	0.930464217	ctGacaaagag	ctCacaaagag	0.00	melanocyte, neural crest
	MA1536.1	NR2C2(var.2)	0.0582905	3.1657	0.814271689	0.871019615	Cagtgtgc	Gagtgcgc	-0.06	brain, retina, telencephalon
	MA1523.1	MSANTD3	8.31141	12.4667	0.860467632	0.963218731	gcacactGac	gcgcactCac	-0.10	NA
	MA0672.1	NKX2-3	-0.714415	5.64268	0.743898583	0.853017086	cacactGaca	cgcactCaca	-0.11	pharyngeal arch, pharynx, gut, heart, endoderm, ectoderm
	MA0122.1	Nkx3-2	4.35322	7.40332	0.76126339	0.875088057	gtCagtgtg	gtGagtgcg	-0.11	whole organism, pharyngeal arch, head
	MA0063.2	NKX2-5	2.69959	8.24359	0.744803164	0.869403459	cacactGacaa	cgcactCacaa	-0.12	heart development
	MA0914.1	ISL2	1.70121	6.90615	0.731750204	0.867167025	gcacactG	gcactCac	-0.14	brain, CaP motoneuron, motor neuron, neural tube, whole organism
	MA0673.1	NKX2-8	-1.10024	6.47318	0.750646241	0.887590817	acactGaca	gcactCaca	-0.14	NA
Rel. Pos./							**LM (90 bp)**			
Pos. Scaffold	**Matrix ID**	**Name**	**Score Pdem**	**Score Pcya**	**Relative score Pdem**	**Relative score Pcya**	**TF binding site Pden**	**TF binding site Pcya**	**Delta relative score**	**Expressed in**
1/438,598	MA1542.1	OSR1	8.15	0.06	0.88	0.74	agCttctgct	agAttctgct	0.14	whole organism, mesoderm, brain, endoderm, blood vasculature
	MA0080.1	SPI1	5.63	2.42	0.87	0.74	cagaaG	cagaaT	0.13	blood, lateral mesoderm, liver, leukocyte, ventral mesoderm, yolk
	MA1646.1	OSR2	12.57	6.88	0.94	0.81	tagcagaaGctg	tagcagaaTctg	0.13	gut, fins, pronephric duct
	MA0461.1	Atoh1	4.58	-3.88	0.86	0.73	aaGctggt	aaTctggt	0.13	whole organism, brain, macula, spinal cord
	MA1468.1	ATOH7	7.04	0.38	0.86	0.74	agCttctgct	agAttctgct	0.12	eye, retina, whole organism
	MA0522.1	Tcf3	4.93	-4.08	0.85	0.73	accagCttctg	accagAttctg	0.12	whole organism
	MA0499.1	Myod1	5.13	-4.17	0.86	0.74	accagCttctgct	accagAttctgct	0.12	whole organism, eye, fin, mesoderm, muscle
	MA1100.1	ASCL1	9.31	2.70	0.86	0.75	gcagaaGctggtt	gcagaaTctggtt	0.11	whole organism, gut, brain, eye
	MA0816.1	Ascl2	8.54	3.20	0.85	0.74	accagCttct	accagAttct	0.11	NA
	MA1472.1	BHLHA15(var	7.41	2.69	0.87	0.77	agCttctgct	agAttctgct	0.10	exocrine pancreas, hatching gland, hindbrain, polster, whole organism
	MA1472.1	BHLHA15(var	7.41	5.74	0.87	0.84	agaaGctggt	agaaTctggt	0.03	exocrine pancreas, hatching gland, hindbrain, polster, whole organism
	MA0719.1	RHOXF1	1.72	2.77	0.84	0.86	agaaGctg	agaaTctg	-0.02	NA
	MA0145.3	TFCP2	7.61	9.85	0.84	0.89	caaccagCtt	caaccagAtt	-0.04	NA
	MA0145.3	TFCP2	5.54	8.46	0.81	0.86	aaGctggttg	aaTctggttg	-0.05	NA
	MA0623.1	Neurog1	4.91	7.31	0.82	0.87	agaaGctggt	agaaTctggt	-0.06	whole orgnism, neural crest, brain, ectoderm, retina
	MA0827.1	OLIG3	3.49	7.55	0.80	0.87	accagCttct	accagAttct	-0.07	brain, rhombomere, spinal cord
	MA0035.1	Gata1	1.43	5.19	0.69	0.90	agCttc	agAttc	-0.20	gut, pectoral fin, pronephric duct
	MA0036.1	GATA2	-0.43	4.45	0.59	0.87	agCtt	agAtt	-0.28	brain, blood vasculature, eye, gut, liver
	Matrix ID	**Name**	**Score Pdem**	**Score Pcya**	**Relative score Pdem**	**Relative score Pcya**	**TF binding site Pden**	**TF binding site Pcya**	**Delta relative score**	**Expressed in**
60/438,657	MA0820.1	FIGLA	7.06	5.39	0.86	0.82	Accacctcct	Cccacctcct	0.03	gonad, ovary, testis
	MA0130.1	ZNF354C	6.33	5.92	0.89	0.87	gAccac	gCccac	0.02	NA
	MA1536.1	NR2C2(var.2)	5.27	4.80	0.91	0.90	gaggtggT	gaggtggG	0.01	brain, retina, telencephalon
	MA0522.2	TCF3	4.86	4.45	0.85	0.84	Accacctcct	Cccacctcct	0.01	whole organism
	MA1116.1	RBPJ	6.42	6.41	0.86	0.86	Tctgcgaacg	Gctgcgaacg	0.00	head, midbrain, otic vesicle, whole organism, eye
	MA1558.1	SNAI1	6.12	6.75	0.86	0.87	aggaggtggT	aggaggtggG	-0.01	eye, heart, mesoderm, germ ring, whole organism
	MA1648.1	TCF12(var.2)	8.34	8.92	0.87	0.88	Accacctcctc	Cccacctcctc	-0.01	brain, neural tube, pectoral fin, spinal cord
	MA0522.3	TCF3	8.46	9.16	0.87	0.89	Accacctcctc	Cccacctcctc	-0.02	whole organism
	MA1522.1	MAZ	6.51	7.57	0.85	0.86	Accacctcctc	Cccacctcctc	-0.02	brain, whole organism
	MA0103.3	ZEB1	5.38	6.69	0.84	0.86	Accacctcctc	Cccacctcctc	-0.02	neural plate, whole organism
	MA0079.3	SP1	2.66	8.44	0.81	0.89	agAccacctcc	agCccacctcc	-0.07	whole organism
	MA0671.1	NFIX	-4.73	4.57	0.63	0.85	gcagAccac	gcagCccac	-0.22	midbrain, muscle, central nervous system, whole organism
	Matrix ID	**Name**	**Score Pdem**	**Score Pcya**	**Relative score Pdem**	**Relative score Pcya**	**TF binding site Pden**	**TF binding site Pcya**	**Delta relative score**	**Expressed in**
90/438,687	MA0745.1	SNAI2	7.30	-3.01	0.89	0.69	ctcagGttt	ctcagCttt	0.21	neural crest
	MA1569.1	TFAP2E	3.85	-5.00	0.85	0.73	tccctcagGtt	tccctcagCtt	0.12	melanocyte, melanoblast, neural crest
	MA1569.1	TFAP2E	3.68	-5.17	0.85	0.73	aaCctgaggga	aaGctgaggga	0.12	melanocyte, melanoblast, neural crest
	MA0003.4	TFAP2A	11.91	6.05	0.89	0.78	gttccctcagGttt	gttccctcagCttt	0.12	ectoderm, neural crest
	MA1118.1	SIX1	13.14	7.57	0.92	0.81	gaaaCctgagg	gaaaGctgagg	0.11	brain, central nervous system, whole organism
	MA0814.1	TFAP2C(var.2	7.14	1.63	0.86	0.77	aaCctgaggga	aaGctgaggga	0.09	NA
	MA0003.3	TFAP2A	6.90	1.82	0.86	0.78	aaCctgaggga	aaGctgaggga	0.08	ectoderm, neural crest
	MA0103.1	ZEB1	5.49	5.09	0.85	0.83	aaCctg	cagCtt	0.02	neural plate, whole organism
	MA0035.2	Gata1	6.22	6.81	0.85	0.86	agagagaaaCc	agagagaaaGc	-0.01	mesoderm, blood, tail bud, whole organism
	MA0482.1	Gata4	4.99	6.44	0.84	0.86	Gttttctctg	Ctttctctg	-0.02	endoderm
	MA0514.1	Sox3	1.70	8.81	0.79	0.90	gGtttctctc	gCtttctctc	-0.11	whole organism
	MA0508.3	PRDM1	7.21	13.33	0.83	0.95	agGtttctctc	agCtttctctc	-0.12	ectoderm, epidermis, neural crest,
	MA0039.1	Klf4	3.65	7.76	0.76	0.88	agagagaaaC	agagagaaaG	-0.12	epidermis
	MA0500.1	Myog	-4.50	4.63	0.73	0.86	gaaaCctgagg	gaaaGctgagg	-0.12	mesoderm, mostly muscles
	MA0719.1	RHOXF1	-3.61	3.43	0.73	0.87	gaaaCctg	gaaaGctg	-0.14	NA
	MA0842.1	NRL	0.05	7.12	0.70	0.85	agaaaCctgag	agaaaGctgag	-0.15	retina, lens
	MA0117.1	Mafb	3.27	7.31	0.73	0.91	Cctgaggg	Gctgaggg	-0.18	neural crest
	MA0442.1	SOX10	2.53	6.64	0.72	0.90	Gtttct	Ctttct	-0.18	melanocyte, neural crest

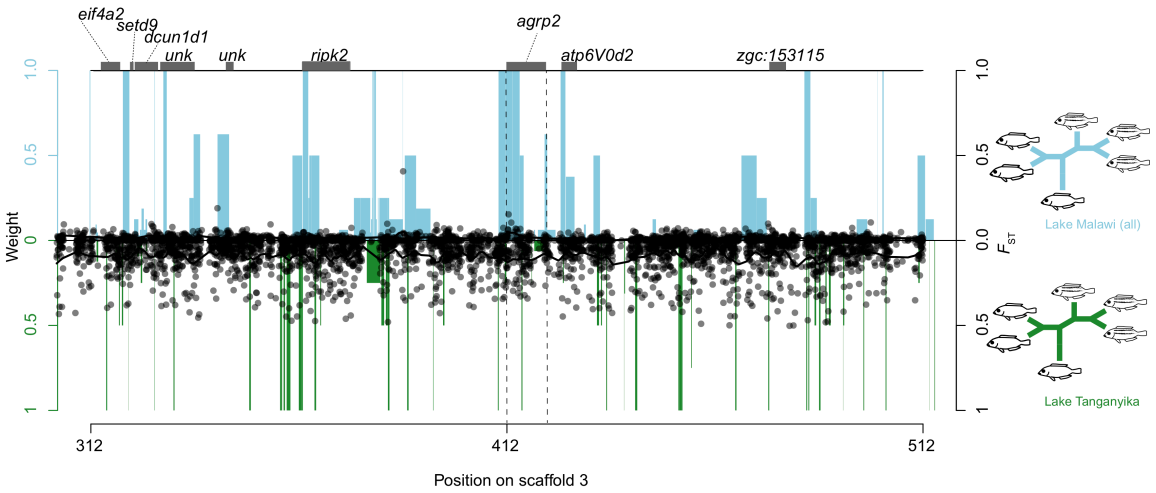

Fig. S1. F_{ST} plot of all Lake Malawi and Lake Tanganyika species. Association of stripes with genomic regions. Black dots represent midpoints of every associated region (F_{ST} value) and black lines are smoothened local regressions between striped and non-striped species from Lake Malawi (top) and Lake Tanganyika species (bottom). This is plotted together with topology weights for topologies in which striped and non-striped species are reciprocally monophyletic (blue bars Lake Malawi, green bars Lake Tanganyika). Each value is giving the proportionate contribution of a particular taxon tree to the full tree with values ranging from 0 to 1. An example for such a topology in which striped species are reciprocally monophyletic is provided at the right for both radiations.

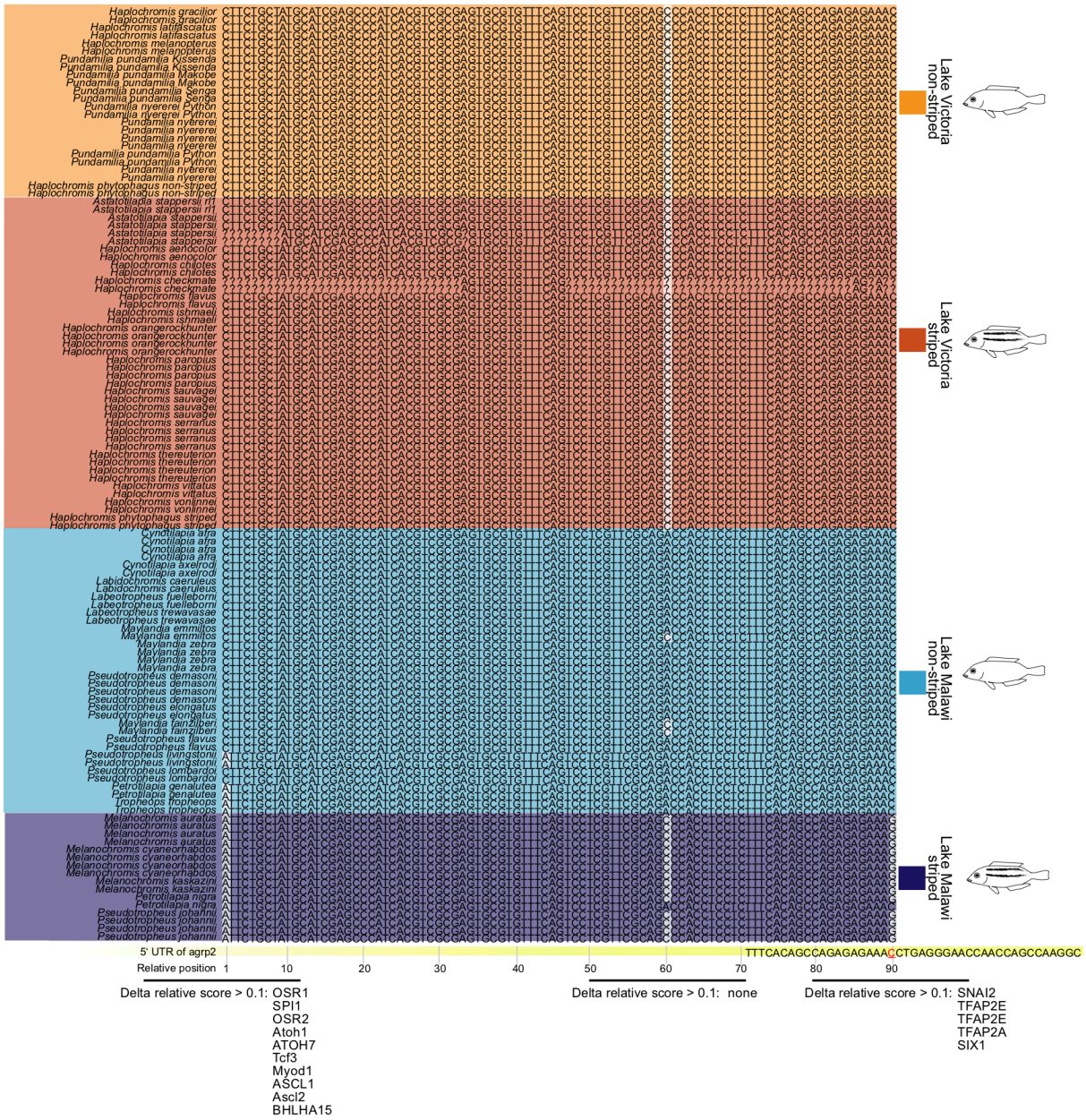

Fig. S2. The *de novo* mutations in Lake Malawi mbuna may alter *agrp2* expression. Alignment of candidate region LM for Lake Malawi mbuna (blue), all Lake Victoria species as well as their ancestral lineages (orange). There are three SNPs within this 90 bp region (highlighted in white) with one of them aligning to the 5'UTR of agrp2 (yellow bar at the bottom). All TFBSs predicted by JASPAR for each variant +/-10 bp of this variant are given below (see also Table S2). While TFBSs for variants one and two (relative positions 1 and 60) are expressed in tissues such as the brain or gut (Table S2), predicted TFBSs at the third variant (relative position 90) are expressed in the neural crest, skin or in melanocytes (Table S2).

Fig. S3. Most variants within regions LM, LV 1, LV 2 and LVRS are not shared between Lakes Victoria and Malawi. Highly associated variants in region LM are unique in Lake Malawi and likely evolved de novo (see also Fig. 3, Fig. S2). For regions LV 1, LV 2 and LVRS the non-striped ancestral species *H. gracilior* is polymorphic for most variants which are highly differentiated between Lake Victoria striped and non-striped species. These results suggest that regulatory evolution via different routes lead to the repeated evolution of horizontal stripes in the two independent radiations of Lake Malawi and Lake Victoria cichlids.