

Supplemental material

Assessment of male reproductive skew via highly polymorphic STR markers in wild vervet monkeys, *Chlorocebus pygerythrus*

Running title: Male reproductive skew in wild vervet monkeys

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Field site

The field site was established in 2008 and census data are recorded on a near daily basis (for RST and RBM collected since 2008 and for PT collected since 2012). During winter data were collected from 0730 to 1730 and during summer the data collection was evenly distributed with days starting at 0400 for the following 10 hours (early days) or latest ending at 1900 and beginning 10 hours earlier (late days).

Fecal sample storing procedure

We collected 620 fecal samples of which 605 were dried and 15 were frozen samples. To dry the fecal samples we followed the ‘two-step’ storage procedure (Nsubuga et al., 2004) by immediately transferring the fresh sample into a tube containing 40ml of 95% ethanol. After ethanol treatment of 24 to 36 hours, we transferred the samples into 50ml tubes filled with approximately 20g of silica beads and stored them at room temperature until extraction. In addition to the 605 dried samples, we used 15 fecal samples of potential sires and mothers, collected for other purposes that were immediately frozen at -20°C until extraction.

PCR protocol and sequencing

The multiplex reaction for DNA isolated from tissue and fecal samples contained 2.25µl distilled water, 7.5µl *MyTaqTM HS Mix (Bioline)* and 2.25µl primer-mix (all 15 unlabelled primer pairs) as a 12µl master-mix. PCR reagents such as buffer, dNTPs, MgCl₂, Taq polymerase and enhancers are included in the *MyTaqTM HS Mix*. Finally, 3.0µl of diluted DNA (1:100) was added into each well. The cycling protocol included a hot start at 94°C for two minutes followed by 30 cycles with denaturation at 94°C for 20 seconds, annealing temperature at 56°C for 30 seconds and elongation at 72°C for 30 seconds and ended with 10 minutes at 72°C for final elongation. The extracts were stored at 8°C. The multiplex PCR products were diluted 1:100.

The singleplex reaction for DNA of tissue and fecal samples was done in a 10 μ l approach, containing 3.4 or 3.2 μ l distilled water, 5.0 μ l MyTaq, and 0.6 or 0.8 μ l of primer mix with 3 or 4 reverse and labeled forward primer pairs (10pmol). Finally, 1.0 μ l of diluted multiplex PCR product was added into each well. The singleplex reaction protocol was the same as for the multiplex PCR for tissue and fecal samples, except that the annealing temperature was executed at 58°C. Again, the PCR products were stored at 8°C.

The sequencing plates for fragment analysis were prepared with 0.5 μ l combined PCR product of each singleplex and 0.1 μ l Rox (HD400 from Applied Biosystems®) as a size standard.

Criteria thresholds for highly polymorphic marker

For selection of highly polymorphic marker, we calculated the probability that an individual would be heterozygous at a given locus (expected heterozygosity, H_{exp}), determined the actual observed heterozygosity (H_{obs}) and selected only markers with an $H_{exp}>0.5$ (Botstein et al., 1980). Furthermore, we determined the polymorphic information content (PIC) and selected markers with $PIC>0.5$ as they are highly informative for marker discrimination (Botstein et al., 1980). Moreover, we tested for any deviation from Hardy-Weinberg equilibrium (HWE) with a significant deviation from HWE suggesting genotyping problems, e.g. segregating null alleles or incorrectly distinguished alleles. Finally, we estimated the frequency of null alleles ($F(Null)$), with values <0.05 indicating a negligible frequency of null alleles (Chapuis and Estoup, 2007).

Paternity criteria

Paternities were considered as i) strictly solved cases if the parent-offspring trio had no mismatches in all common markers, while all other potential sires had at least two mismatches, (ii) relaxed solved cases if the parent-offspring trio had no mismatch in all common markers, while the next putative sire had one mismatch or (iii) best match cases, if we determined one mismatch between parent-offspring trio and the next putative father had at least two mismatches (cf. Widdig et al., 2017). In addition, we used *Cervus 3.0* (Kalinowski et al., 2007) to determine paternity using the likelihood approach by selecting the most likely parent-offspring trio based on the 95% confidence level. Paternities were only considered as assigned when criteria of both, exclusion and likelihood approach, were fulfilled. We used the following parameters for calculation: proportion of potential sires sampled 0.80, proportion loci typed 0.98 and the proportion loci mistyped 0.01.

Additional six markers

All paternities were solved based on the 15 core markers, but for some infants the paternity exclusion rule was improved (N=3) or confirmed (N= 4) with six additional markers. For example when a paternity was solved based on the ‘relaxed rule’ only (i.e. parent-offspring trio had no mismatch in all common markers, while the next putative sire had one mismatch), the added six markers would confirm this case now with the strict rule (i.e. parent-offspring trio had no mismatches in all common markers, while all other potential sires had at least two mismatches). Furthermore, we confirmed the results of paternity analyses for the three unsolved cases (no father found within our sample of potential sires). For the conformation of these six markers, we applied more relaxed rules for cost efficiency (amplifications of heterozygous genotypes 1.25 ± 0.43 ; homozygous genotypes 1.21 ± 0.41 , mean \pm SD).

Paternity results

Of 94 assigned paternities, we were able to solve paternity of 84 infants applying our strict exclusion criteria and 1 infant applying our relaxed criteria. Furthermore, we assigned 9 paternities to the male providing the best match as defined above. Again, all paternities were additionally confirmed at the 95% confidence level.

Table S1: 45 tested microsatellite markers (primer), 15 core markers highlighted in dark grey and 6 additional markers highlighted in light grey used for paternity analysis with used dye, reference species, annealing temperature [$^{\circ}$ C] and reference study

Primer	dye	species	annealing [$^{\circ}$ C]	reference
D1S518	Fam	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011; Jasinska et al., 2007; Newman et al., 2002; Weingrill et al., 2011)
D1S548	Hex	<i>Macaca mulatta</i> ; <i>M. nigra</i>	58	(Engelhardt et al., 2017; Widdig et al., 2017)
D4S2408	Hex	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011)
D4S243	Fam	<i>Ch. sabaesus</i>	58	(Newman et al., 2002)
D5S1457	Fam	<i>M. mulatta</i> ; <i>M. nigra</i>	58	(Engelhardt et al., 2017; Kanthaswamy et al., 2010; Widdig et al., 2017)
D5S1467	Hex	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011)
D6S474	Fam	<i>M. mulatta</i>	58	(Nürnberg et al., 1998)
D6S501	Fam	<i>M. nigra</i> ; <i>M. mulatta</i>	59	(Engelhardt et al., 2017; Widdig et al., 2017)
D7S2204	Fam	<i>M. nigra</i>	58	(Engelhardt et al., 2017)
D8S1106	Ned	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011; Jasinska et al., 2007;

				Widdig et al., 2017)
D10S1432	Hex	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2012)
D10S611	Hex	<i>Papio cynocephalus</i>	58	(Bayes et al., 2000)
D13S765	Fam	<i>M. mulatta M. nigra;</i>	57	(Engelhardt et al., 2017; Kanthaswamy et al., 2010; Widdig et al., 2017)
D17S1304	Hex	<i>Chlorocebus sabaesus</i>	58	(Almeida et al., 2011)
D19S245	Hex	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011)
D2S1333	Hex	<i>M. mulatta</i>	58	(Rogers et al., 2005)
D6S1017	Fam	<i>Ch. sabaesus</i>	58	(Almeida et al., 2011)
D6S493	Fam	<i>M. nigra</i>	58	(Engelhardt et al., 2017)
D11S2002	Hex	<i>Pan troglodytes</i>	58	(Bradley et al., 2000)
D12S67	Fam	<i>M. nigra</i>	58	(Engelhardt et al., 2017)
D18S536	Hex	<i>M. nigra</i>	58	(Engelhardt et al., 2017)
D1S415	Fam	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D2S1326	Hex	<i>Gorilla gorilla</i>	58	(Zhang et al., 2001)
D2S135	Fam	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D2S367	Fam	<i>Human</i>	58	(Gyapay et al., 1994)
D3S1312	Fam	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D3S1768	Fam	<i>Human</i>	58	(Pokorny et al., 1997)
D4S1645	Fam	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D5S1466	Hex	<i>Ch. sabaesus</i>	58	(Newman et al., 2002)
D5S1470	Hex	<i>Human</i>	58	(Xu et al., 1996)
D5S820	Fam	<i>M. mulatta</i>	58	(Kayser et al., 1996)
D6S1705	Hex	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D6S266	Fam	<i>Human</i>	58	(Weissenbach et al., 1992)
D6S405	Hex	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
D6S493	Fam	<i>M. mulatta</i>	58	(Nürnberg et al., 1998)
D8S271	Fam	<i>Human</i>	58	(Weissenbach et al., 1992)
D8S601	Fam	<i>Human</i>	58	(Xu et al., 1996)
D11S925	Fam	<i>M. nigra</i>	60	(Engelhardt et al., 2017)
D12S67	Fam	<i>M. mulatta</i>	58	(Kayser et al., 1995)
D14S255	Fam	<i>M. mulatta</i>	58	(Kayser et al., 1996)
D15S823	Fam	<i>M. mulatta</i>	60	(Rogers et al., 2005)
D16S403	Hex	<i>M. mulatta</i>	60	(Kanthaswamy et al., 2010)
D20S206	Fam	<i>M. mulatta</i>	58	(Nürnberg et al., 1998)
D20S484	Fam	<i>Ch. sabaesus</i>	58	(Jasinska et al., 2007)
SCA1REP	Hex	<i>Human</i>	58	(Orr et al., 1993)

Table S2a: Genotypes of 211 individuals for marker D10s1432, D10s611, D13s765, D17s1304, D19s245, D1s518, D1s548, D4s2408, D4s243, D5s1457 and D5s1467 with ‘number’/‘number’ indicating two alleles of genotype and 0/0 indicating no genotype available. Individual identifier with S= potential sire, M= potential mother, O= offspring (ID), birth cohort year with unkn= unknown birth cohort (cohort), number of typed marker per individual (# typed)

ID	cohort	# typed	D10S1432	D10S611	D13S765	D17S1304	D19S245	D1S518	D1S548	D4S2408	D4S243	D5S1457	D5S1467
S1	unkn	19	155/163	158/162	236/240	207/211	241/257	190/194	216/216	362/362	243/263	122/130	184/184
S2	unkn	17	171/175	154/158	194/194	187/211	221/229	194/198	212/220	366/366	231/235	126/126	184/188
S3	unkn	15	163/175	154/158	186/186	187/187	209/233	178/178	216/216	354/354	243/251	130/130	184/192
O1	2013	15	155/171	150/150	194/240	207/211	221/241	186/190	212/220	362/366	235/235	126/130	184/188
O2	2015	14	171/179	150/158	0/0	187/207	217/241	186/190	220/220	362/366	235/235	122/130	188/188
M1	unkn	15	171/171	150/158	236/240	187/211	221/241	186/194	212/220	362/366	235/243	130/130	188/188
O3	2014	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O4	2013	14	155/175	154/158	0/0	187/211	217/257	182/190	212/216	366/370	247/251	118/130	184/188
S4	unkn	15	171/183	150/158	232/236	207/207	217/253	182/194	212/220	362/362	231/239	122/126	188/188
O5	2014	13	155/175	154/154	0/0	207/207	0/0	182/194	216/216	366/366	235/239	118/126	188/192
S5	2009	15	171/175	150/150	194/236	211/219	217/221	182/190	212/212	366/370	235/251	122/122	184/188
M2	unkn	16	155/171	154/162	186/190	207/211	209/241	182/186	216/216	366/366	235/251	118/130	188/192
O6	2015	15	155/175	162/162	0/0	0/0	217/221	182/194	216/216	362/362	231/247	122/126	184/188
O7	2014	15	155/167	154/158	198/232	207/211	225/229	190/198	216/224	362/366	243/251	126/126	184/188
M3	unkn	15	155/167	154/154	198/232	207/207	217/229	190/198	212/216	362/362	243/251	126/126	184/188
O8	2015	14	155/155	154/162	0/0	207/211	221/229	190/194	216/216	362/362	239/243	126/126	184/196
S6	unkn	15	155/155	154/158	194/236	187/207	221/225	182/194	212/216	366/370	235/251	118/126	184/188
S7	unkn	15	155/179	154/154	236/236	207/219	221/221	182/190	216/220	362/362	239/243	126/126	184/188
O9	2013	15	155/171	150/154	232/236	207/211	229/241	190/194	212/216	362/378	251/251	126/126	188/188
S8	unkn	15	155/159	158/158	236/236	207/207	209/229	190/190	216/224	362/362	243/243	122/122	184/188
M4	2010	18	155/175	154/162	232/236	187/207	217/229	182/186	212/216	362/362	243/247	118/122	184/188
O10	2016	14	155/175	158/162	0/0	207/207	217/221	186/194	216/216	362/362	239/243	122/126	184/196
O11	2014	15	155/171	154/158	232/236	187/207	217/229	182/194	212/220	362/362	247/251	118/130	184/184

O12	2014	15	155/171	150/158	194/194	187/211	221/221	198/202	212/220	366/378	235/239	122/126	184/184
M5	unkn	15	155/179	150/158	194/236	187/211	221/241	190/202	212/216	370/378	239/239	122/126	184/184
O13	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O14	2016	15	171/179	150/158	194/194	211/211	221/221	190/190	212/212	370/378	239/251	122/126	184/184
O15	2014	15	155/175	158/162	232/236	203/215	221/241	178/190	212/216	362/362	235/239	118/122	184/188
M6	unkn	15	155/155	154/158	194/236	219/223	221/241	190/198	212/216	358/370	239/239	126/126	188/188
O16	2014	15	155/171	150/158	194/236	207/219	221/241	194/198	216/216	370/370	239/251	126/126	188/188
S9	unkn	14	171/179	150/154	232/232	203/207	221/221	182/190	220/220	0/0	239/239	126/126	184/184
O17	2013	15	171/179	158/158	194/236	203/207	217/257	190/194	212/216	366/370	235/239	122/126	184/188
O18	2014	15	175/179	158/158	194/236	203/211	221/241	186/194	212/216	362/374	227/239	126/130	184/188
S10	unkn	13	155/171	158/162	0/0	0/0	221/229	182/202	212/224	370/374	227/243	118/126	184/192
O19	2015	15	171/175	158/158	194/194	187/187	221/221	190/194	212/212	366/370	231/251	126/126	184/188
O20	2015	15	155/171	154/158	186/236	203/207	217/221	178/190	216/216	362/370	239/243	126/126	184/188
O21	2013	15	155/171	154/158	194/236	207/223	241/241	190/194	212/216	370/370	239/239	126/126	188/188
S11	unkn	15	155/163	150/154	194/232	207/211	221/237	194/202	216/216	362/378	239/243	122/126	184/188
M7	unkn	15	155/155	154/158	236/236	207/215	221/225	178/190	212/216	362/362	239/243	122/126	184/184
O22	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
M8	unkn	15	175/179	154/158	194/236	187/203	217/221	190/194	212/216	362/370	239/251	118/126	188/188
O23	2016	14	155/175	158/158	0/0	187/215	221/229	190/194	216/216	362/370	231/239	126/126	188/188
S12	unkn	12	0/0	154/154	194/194	207/207	221/221	178/178	216/216	0/0	239/239	122/126	188/188
S13	unkn	15	175/175	150/158	194/228	207/207	217/221	182/186	220/220	366/370	239/239	122/126	184/188
S14	unkn	15	167/179	150/154	228/228	203/211	221/225	190/194	216/220	366/370	239/247	118/130	184/188
M9	unkn	21	171/171	154/158	232/236	187/215	209/221	182/194	212/220	362/362	243/243	118/122	188/188
O24	2016	19	155/171	154/154	0/0	187/187	217/221	194/194	212/220	362/370	243/247	118/122	188/188
O25	2014	20	155/171	150/154	194/236	207/215	221/229	182/190	212/220	362/366	231/243	118/126	184/188
O26	2015	14	171/171	150/154	0/0	187/211	217/221	182/182	212/220	362/366	243/251	122/122	184/188
S15	unkn	13	155/155	158/162	194/206	203/207	209/221	186/202	212/220	0/0	235/251	118/126	188/196
O27	2013	13	159/171	154/158	236/236	211/215	0/0	182/190	212/212	0/0	235/243	122/126	188/188
S16	unkn	15	155/163	154/158	198/232	211/215	225/225	186/198	216/224	366/366	239/243	126/126	184/188

M10	unkn	15	0/0	158/162	236/236	187/211	221/229	178/182	216/216	362/370	235/239	126/130	188/188
O28	2013	15	155/171	158/162	236/236	203/211	221/241	178/190	216/216	362/370	231/235	122/126	188/188
O29	2013	19	171/171	154/158	232/236	207/207	221/225	190/194	216/216	354/362	235/239	122/130	192/196
M11	unkn	18	155/171	154/154	232/236	187/207	229/229	186/190	212/216	354/370	235/247	122/130	192/196
O30	2014	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O31	2015	16	171/171	154/158	0/0	207/207	221/229	190/194	212/216	354/362	231/247	122/126	188/196
S17	unkn	19	155/171	158/162	194/232	207/211	221/221	190/194	216/216	362/362	231/239	122/126	188/196
O32	2014	15	159/175	150/158	232/236	187/211	221/229	182/202	212/216	362/362	239/239	126/130	188/188
O33	2014	15	155/171	150/158	228/236	211/211	221/221	190/194	216/220	362/362	239/247	126/130	184/184
S18	unkn	15	155/175	150/158	194/236	203/211	241/241	178/194	212/216	362/370	239/263	122/130	188/188
M12	unkn	15	155/171	150/162	236/236	207/211	209/221	190/206	212/216	362/362	239/247	122/130	184/184
O34	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O35	2013	14	155/163	150/150	236/236	187/211	221/221	190/202	212/212	362/366	239/247	122/130	184/188
O36	2014	15	171/179	154/154	186/236	207/207	217/229	190/198	212/212	370/370	231/251	122/126	184/188
M13	unkn	15	171/183	154/154	236/236	203/207	217/217	194/198	212/216	366/370	231/243	122/126	184/184
M14	unkn	15	163/179	158/158	194/194	203/203	229/241	190/190	216/220	366/378	231/239	122/126	184/184
O37	2013	15	171/179	150/158	194/236	203/203	229/241	190/194	212/220	362/366	231/235	126/130	184/188
O38	2013	15	175/183	154/154	236/236	187/207	217/229	194/198	212/212	366/366	231/239	118/122	184/184
O39	2014	15	155/163	158/158	194/240	203/203	241/241	190/194	212/216	362/378	231/231	122/122	184/188
O40	2015	13	171/171	150/162	0/0	207/211	209/221	190/194	216/220	366/366	239/251	122/130	184/184
S19	unkn	17	171/179	158/162	194/232	207/211	217/221	190/194	220/220	0/0	231/235	122/130	184/188
O41	2013	15	155/183	150/162	194/194	187/203	217/229	190/194	216/216	362/370	231/239	126/126	184/184
O42	2013	15	171/171	150/154	232/236	187/211	217/221	186/190	212/216	370/378	239/251	122/126	188/192
M15	unkn	19	155/175	150/158	236/236	203/211	229/229	190/194	216/224	362/370	239/251	118/126	184/184
O43	2014	19	163/171	150/150	232/236	187/211	233/237	186/190	212/212	366/366	235/239	126/130	184/188
M16	unkn	17	155/171	154/158	194/232	187/215	217/229	190/198	216/220	354/370	239/239	126/130	188/192
O44	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O45	2015	16	0/0	154/158	194/228	187/215	217/229	190/194	216/220	362/370	239/251	126/130	184/192
O46	2014	18	167/175	150/158	0/0	203/207	229/237	190/194	212/224	370/370	239/243	118/122	184/184

S20	unkn	17	155/167	150/154	186/186	207/207	237/241	194/194	212/216	370/370	243/247	118/126	184/188
O47	2016	14	171/171	150/158	194/236	187/207	221/241	0/0	216/216	366/366	0/0	126/126	184/188
M17	unkn	20	171/179	150/158	194/194	187/211	221/229	194/198	212/216	362/366	227/251	118/126	184/188
O48	2015	17	171/175	154/158	0/0	211/211	221/221	198/198	212/220	366/366	227/231	126/126	188/188
O49	2013	19	171/171	154/154	186/236	211/215	229/241	182/194	212/212	366/370	235/239	126/130	184/188
S21	unkn	18	155/175	154/158	0/0	187/207	217/229	190/194	212/216	366/370	239/247	118/126	184/188
M18	unkn	14	171/179	150/158	194/194	207/219	229/229	194/202	216/220	0/0	227/239	126/126	188/188
S22	unkn	9	155/171	158/162	194/194	203/219	0/0	0/0	216/216	362/362	0/0	122/126	184/188
M19	unkn	19	171/183	154/158	194/236	215/219	225/229	182/190	212/212	370/370	235/239	126/130	184/188
O50	2014	14	0/0	150/158	194/232	203/207	229/257	190/194	212/216	366/366	239/243	126/126	184/188
O51	2015	13	163/171	154/158	0/0	187/215	0/0	182/202	212/224	362/370	239/239	122/126	188/188
S23	unkn	19	159/171	150/158	228/236	207/211	221/221	190/194	220/220	362/374	239/247	126/126	184/188
M20	unkn	14	155/175	150/154	206/214	207/211	209/241	186/198	216/216	0/0	239/243	122/130	180/184
O52	2015	13	171/175	150/158	0/0	187/207	221/241	186/198	216/220	366/366	231/239	126/130	184/188
O53	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
M21	unkn	15	171/171	154/158	194/236	187/219	217/257	190/194	212/216	362/370	235/243	118/126	184/192
O54	2015	15	155/171	150/158	194/236	207/207	221/257	194/202	212/216	370/378	235/239	118/126	184/192
S24	unkn	15	167/171	150/158	194/194	187/211	221/241	182/202	212/220	366/370	239/243	126/130	184/188
S25	unkn	15	155/179	154/154	186/206	207/215	221/229	190/194	212/216	362/370	235/251	122/126	188/188
O55	2013	15	171/171	150/158	194/194	211/219	217/221	190/190	212/212	362/366	235/243	126/126	184/188
O56	2013	15	171/179	150/150	194/194	187/203	221/241	186/194	212/216	362/370	235/239	122/126	188/188
O57	2014	15	155/163	150/154	206/232	207/211	221/241	198/202	216/216	366/378	239/243	122/126	180/188
M22	unkn	19	171/179	150/158	194/244	187/203	217/221	186/186	212/216	362/362	235/243	122/126	184/188
O58	2014	19	179/179	150/158	194/236	187/211	221/221	186/186	212/216	362/362	235/235	122/130	184/188
S26	unkn	15	155/155	154/158	236/240	203/219	241/253	190/194	212/220	350/362	231/243	122/122	188/188
O59	2013	14	155/163	150/154	194/206	207/211	221/241	186/194	216/216	0/0	239/243	122/130	180/188
O60	2014	15	171/175	150/158	236/236	187/219	217/221	178/194	212/220	366/370	231/239	122/130	184/188
S27	unkn	15	155/175	150/150	236/236	187/215	217/217	186/198	216/216	362/362	231/235	118/130	184/184
M23	2010	18	155/175	150/158	194/236	207/219	221/221	178/186	212/212	366/370	231/235	118/130	188/188

O61	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O62	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O63	2015	13	0/0	150/158	0/0	187/211	221/221	186/186	212/216	362/362	235/235	122/130	184/188
S28	2011	14	0/0	154/154	194/194	219/219	209/221	194/194	220/220	362/366	231/251	122/126	188/192
S29	unkn	15	171/179	158/162	186/236	211/211	221/221	194/194	216/220	370/374	235/239	122/130	184/184
S30	unkn	15	163/163	154/158	186/206	211/215	229/233	194/194	212/216	366/370	227/235	122/130	184/184
S31	unkn	15	155/179	150/162	194/198	187/187	217/237	194/194	216/216	362/374	231/243	122/126	184/184
M24	unkn	15	155/183	150/154	194/236	207/219	217/221	182/194	212/220	362/362	239/251	122/126	188/188
O64	2016	14	155/171	150/154	0/0	207/219	221/221	182/194	212/212	362/362	235/239	126/126	188/188
S32	unkn	15	155/179	158/158	190/202	207/211	237/237	190/190	216/220	374/374	243/247	122/126	184/196
S33	2008	18	155/175	158/162	232/240	187/203	221/241	186/190	216/216	362/370	231/235	118/122	184/188
M25	unkn	15	155/179	154/162	194/236	203/207	221/241	190/194	212/216	362/370	231/239	126/130	188/196
M26	unkn	14	155/171	150/154	194/236	203/211	221/221	194/198	212/216	0/0	239/239	122/126	188/188
O65	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O66	2014	14	155/179	150/154	0/0	203/211	221/221	190/198	212/212	362/362	235/247	122/122	184/188
S34	unkn	15	171/175	150/154	194/232	187/187	237/257	194/194	212/216	362/366	231/251	118/126	188/192
M27	unkn	15	155/179	150/158	194/236	207/219	217/225	190/194	212/220	362/374	231/243	122/130	184/188
O67	2014	14	155/183	150/162	0/0	203/211	221/221	190/194	212/216	362/362	239/243	126/130	184/196
S35	unkn	20	159/171	154/158	186/236	203/211	217/241	190/194	212/216	366/370	235/243	118/126	188/188
M28	unkn	20	155/155	154/158	232/236	207/207	209/217	178/178	216/216	362/362	231/235	126/130	184/184
O68	2015	16	0/0	154/158	194/232	0/0	209/229	178/190	216/220	362/362	235/239	122/126	184/188
S36	unkn	14	171/171	150/154	202/236	207/211	0/0	186/194	212/216	366/378	247/251	122/126	188/188
O69	2014	18	0/0	150/154	0/0	207/207	217/221	178/194	216/220	362/374	239/247	126/126	184/188
O70	2013	15	155/171	158/158	232/236	207/211	209/221	178/190	216/220	362/374	239/247	126/130	184/188
S37	unkn	18	155/171	158/162	232/236	187/207	217/221	194/194	212/220	362/366	239/251	122/130	184/192
S38	unkn	15	155/175	150/162	194/236	187/215	217/217	182/186	212/216	362/362	243/247	118/130	184/184
O71	2014	15	155/183	150/158	232/232	207/211	217/245	182/190	212/212	362/370	231/239	122/122	188/188
O72	2013	15	179/179	150/154	194/194	187/211	229/257	190/194	212/212	362/366	235/251	122/126	188/188
M29	unkn	15	167/175	150/158	194/244	207/219	241/245	186/202	212/212	366/370	227/239	126/126	184/188

M30	unkn	15	155/175	154/158	232/236	207/211	241/245	182/190	212/220	370/374	239/243	122/126	184/188
O73	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O74	2015	14	171/175	150/154	236/236	203/207	217/225	186/190	216/216	362/366	0/0	118/130	184/188
O75	2015	14	155/155	150/154	0/0	211/223	233/245	190/190	220/220	362/370	239/239	126/126	184/184
O76	2014	15	163/179	150/150	194/232	207/207	237/253	194/202	216/220	362/362	235/239	122/126	188/188
O77	2014	20	171/171	154/158	194/236	203/207	217/253	186/190	212/216	362/366	235/243	122/126	184/188
M31	unkn	13	0/0	150/154	194/232	187/207	229/253	194/202	212/220	362/366	235/251	122/126	188/188
O78	2016	14	175/179	150/154	0/0	207/211	221/253	190/194	212/220	362/370	235/251	122/126	188/188
O79	2013	15	171/175	150/154	194/236	211/219	217/241	186/190	212/212	366/370	235/239	126/126	188/188
O80	2013	15	159/175	154/158	232/236	187/211	221/245	190/202	212/224	362/374	239/239	122/126	184/188
O81	2013	15	171/175	150/154	236/236	207/207	225/229	186/190	216/216	362/366	239/243	122/126	184/188
O82	2014	16	0/0	150/154	194/232	207/211	241/241	198/202	212/220	0/0	227/231	126/126	188/188
M32	unkn	19	171/179	150/158	236/244	203/207	217/225	186/194	216/224	362/362	0/0	122/130	184/188
S39	unkn	15	163/167	154/162	232/232	203/207	217/225	182/186	220/224	362/374	239/243	122/130	188/188
S40	2008	20	155/171	154/158	198/236	211/219	217/229	182/186	216/216	362/370	231/235	122/130	184/188
S41	unkn	17	155/155	154/158	198/232	211/223	221/221	178/178	220/220	370/370	227/251	130/130	192/192
S42	unkn	16	171/171	154/158	232/236	203/207	241/257	190/190	212/212	366/366	235/243	122/126	184/184
S43	unkn	19	155/175	154/158	236/236	203/211	209/229	190/190	216/220	362/370	231/235	122/126	188/188
S44	2012	15	171/179	150/154	194/236	187/207	217/229	186/190	216/220	366/370	239/247	130/130	184/184
M33	unkn	15	155/171	150/158	194/198	207/207	229/229	190/190	212/220	362/366	239/243	130/130	184/188
O83	2013	15	155/163	150/154	236/236	187/207	221/253	186/202	212/224	362/366	231/251	126/130	184/188
O84	2016	15	163/171	150/158	236/236	203/207	221/241	190/202	212/224	362/366	243/251	126/126	184/184
O85	2015	18	163/175	150/158	0/0	207/207	0/0	182/190	212/216	362/366	235/263	122/130	184/188
M34	unkn	19	171/175	150/158	194/236	207/211	0/0	182/190	212/212	366/370	231/235	122/130	184/188
O86	2016	15	155/171	158/162	194/236	207/211	221/237	190/190	212/216	362/370	235/239	122/126	184/188
M35	unkn	15	155/175	150/154	194/236	207/211	221/253	186/190	212/216	362/366	235/239	122/130	184/184
S45	unkn	15	155/155	154/158	236/236	207/215	217/229	190/194	212/216	362/362	231/231	126/130	184/188
O87	2013	15	175/179	154/158	194/236	211/211	229/241	198/198	212/220	366/370	239/239	126/126	184/188
M36	unkn	15	175/179	158/158	194/236	207/211	221/241	186/198	212/216	362/370	239/239	126/130	184/188

O88	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O89	2014	15	155/159	158/158	194/236	187/187	229/233	186/198	216/224	362/370	239/251	126/130	188/192
O90	2013	15	159/175	150/150	228/236	207/211	221/221	182/190	212/220	366/374	235/247	126/130	184/188
O91	2014	15	175/179	158/158	194/194	211/211	221/241	198/198	216/224	366/370	239/239	126/126	184/184
O92	2014	15	171/175	150/158	236/236	211/211	221/253	186/194	212/220	362/362	235/239	122/126	184/188
S46	unkn	18	155/155	154/162	194/236	215/215	229/229	190/198	216/220	362/370	239/243	122/126	184/188
O93	2013	15	155/155	154/162	194/236	187/215	217/221	190/194	212/216	362/370	239/259	118/122	184/188
M37	unkn	15	155/175	150/158	214/244	203/207	241/241	186/190	212/216	366/366	235/239	122/126	180/188
O94	2016	14	155/175	154/158	0/0	187/203	229/241	186/194	212/216	366/366	231/235	122/126	184/188
O95	2013	15	155/155	154/162	236/236	203/211	221/241	194/194	212/216	362/370	239/251	126/130	184/188
S47	unkn	15	163/179	158/158	194/194	187/211	233/241	186/186	216/216	366/374	227/231	118/130	184/184
S48	2009	15	163/179	154/158	194/236	203/203	229/241	186/190	212/216	366/366	231/239	122/126	184/188
O96	2013	15	155/175	158/158	236/244	203/203	229/241	186/202	212/216	366/370	235/251	122/126	184/188
O97	2014	18	167/179	150/154	0/0	203/207	221/237	194/194	212/216	362/362	239/243	126/130	184/188
O98	2015	14	171/175	154/158	186/206	207/211	217/241	190/194	212/216	0/0	235/235	118/126	188/188
M38	unkn	15	155/155	158/162	194/232	207/215	221/257	186/190	216/216	362/370	239/251	122/126	188/196
O99	2014	15	155/175	154/162	194/194	207/215	229/257	190/190	212/216	362/366	239/247	126/126	184/196
S49	unkn	19	179/183	150/158	206/236	211/211	221/221	186/190	212/216	362/366	235/243	122/130	184/188
O100	2014	15	155/175	150/154	194/194	207/211	229/241	190/194	212/220	366/366	231/235	122/126	180/184
O101	2014	15	155/155	154/158	232/236	187/223	229/241	190/190	212/220	362/370	243/247	118/126	184/184
M39	unkn	15	155/171	150/154	206/236	207/223	217/241	190/194	216/220	362/370	227/243	122/126	184/188
S50	unkn	20	155/175	150/154	194/236	207/223	209/233	182/190	220/220	362/366	231/239	122/126	184/184
M40	unkn	19	179/191	154/162	232/236	203/211	221/221	186/194	212/216	362/366	239/239	130/130	188/188
O102	2016	14	171/179	154/158	0/0	211/223	221/229	186/190	212/216	362/362	231/239	126/130	188/188
M41	2010	15	179/179	154/158	194/236	203/207	221/221	186/190	216/216	366/370	243/243	126/130	188/188
M42	unkn	14	171/179	150/154	0/0	203/207	221/229	190/190	216/220	362/366	243/243	126/130	184/188
O103	2015	14	155/155	154/158	0/0	207/215	217/221	186/190	212/216	362/370	231/243	130/130	184/188
O104	2016	18	171/179	154/162	194/194	203/211	221/221	190/194	216/220	362/370	231/243	130/130	184/188
S51	unkn	15	155/171	150/154	194/236	203/207	217/241	186/194	216/216	362/370	239/251	118/126	184/188

M43	unkn	15	167/171	150/154	194/232	211/215	217/241	182/202	216/220	362/378	231/243	122/126	184/188
O105	2015	14	155/171	150/154	0/0	211/215	229/241	182/190	212/216	362/362	231/231	122/126	188/188
O106	2016	14	163/167	150/158	0/0	187/215	217/233	182/202	216/224	366/378	231/251	122/126	188/188
O107	2013	15	167/171	154/154	194/236	211/211	217/241	182/190	212/220	362/370	243/243	126/126	188/188
S52	unkn	19	171/179	150/154	194/236	207/211	0/0	190/194	212/212	362/366	231/235	126/126	184/188
M44	unkn	15	155/175	158/158	232/236	207/211	225/245	186/190	216/220	366/374	235/239	126/126	184/192
O108	2013	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O109	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O110	2014	14	155/159	158/158	232/232	187/211	0/0	190/202	216/224	362/366	235/251	126/126	184/188
O111	2015	19	155/171	154/158	0/0	203/211	221/229	182/190	212/216	362/366	235/251	126/130	184/188
S53	unkn	20	155/171	150/158	194/194	207/223	229/241	190/194	212/216	362/366	231/235	126/126	184/188
S54	unkn	14	0/0	150/154	0/0	207/211	253/257	178/190	220/224	362/370	243/251	122/130	184/188
S55	unkn	15	159/179	154/158	194/232	203/211	225/241	182/198	220/224	362/366	231/239	126/126	184/188
S56	unkn	19	159/163	150/158	232/236	187/187	221/233	186/202	212/224	362/366	239/251	122/126	188/188

Table S2b: Genotypes of 211 individuals for marker, D6s474, D6s501, D7s2204, D8s1106, D11s2002, D12s67nigra, D18s536, D2s1333, D6s1017 and D6s493nigra with ‘number’/‘number’ indicating two alleles of genotype and 0/0 indicating no genotype available. Individual identifier with S= potential sire, M= potential mother, O= offspring (ID), birth cohort year with unkn= unknown birth cohort (cohort), number of typed marker per individual (# typed)

ID	Cohort	# typed	D6S474	D6S501	D7S2204	D8S1106	D11S2002	D12S67nigra	D18S536	D2S1333	D6S1017	D6S493nigra
S1	unkn	19	194/194	118/126	231/235	127/135	0/0	234/234	0/0	273/329	355/355	144/152
S2	unkn	17	194/194	122/130	239/239	127/131	222/262	118/122	0/0	0/0	0/0	0/0
S3	unkn	15	198/198	134/142	239/239	131/139	0/0	0/0	0/0	0/0	0/0	0/0
O1	2013	15	198/206	118/122	231/235	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O2	2015	14	210/210	122/134	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M1	unkn	15	206/210	122/134	231/231	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O3	2014	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O4	2013	14	122/206	122/122	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0

S4	unkn	15	190/198	126/126	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O5	2014	13	122/122	126/130	0/0	131/135	0/0	118/146	0/0	0/0	0/0	0/0
S5	2009	15	202/214	126/142	235/235	131/131	0/0	0/0	0/0	0/0	0/0	0/0
M2	unkn	16	122/206	122/130	235/239	127/131	0/0	122/146	0/0	0/0	0/0	0/0
O6	2015	15	206/206	122/134	231/235	127/131	222/222	0/0	186/190	0/0	0/0	0/0
O7	2014	15	198/202	118/122	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M3	unkn	15	198/202	118/122	223/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O8	2015	14	198/206	122/122	223/231	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S6	unkn	15	202/206	122/134	235/243	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S7	unkn	15	206/206	118/122	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O9	2013	15	190/202	118/122	231/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S8	unkn	15	190/206	122/122	231/231	135/135	0/0	0/0	0/0	0/0	0/0	0/0
M4	2010	18	202/202	122/134	231/235	127/135	222/262	122/122	186/190	0/0	0/0	0/0
O10	2016	14	202/206	122/142	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O11	2014	15	190/202	122/122	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O12	2014	15	194/222	122/130	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
M5	unkn	15	198/222	122/130	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O13	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O14	2016	15	198/202	122/142	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O15	2014	15	202/206	126/130	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M6	unkn	15	194/230	126/130	239/243	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O16	2014	15	194/202	126/130	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
S9	unkn	14	194/202	122/122	231/231	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O17	2013	15	122/206	122/126	235/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O18	2014	15	202/206	122/126	231/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S10	unkn	13	198/210	122/126	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O19	2015	15	194/206	122/142	239/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O20	2015	15	194/206	126/130	239/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O21	2013	15	202/230	126/130	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0

S11	unkn	15	198/202	122/130	231/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
M7	unkn	15	206/230	126/130	231/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O22	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
M8	unkn	15	206/206	122/142	239/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O23	2016	14	206/222	118/122	239/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S12	unkn	12	0/0	126/134	235/235	131/131	0/0	0/0	0/0	0/0	0/0	0/0
S13	unkn	15	198/206	118/134	235/235	131/131	0/0	0/0	0/0	0/0	0/0	0/0
S14	unkn	15	198/206	122/126	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M9	unkn	21	202/206	122/126	239/251	127/135	222/262	118/122	186/190	329/329	355/355	144/152
O24	2016	19	202/202	126/126	231/231	0/0	222/222	118/118	190/230	329/329	355/355	144/144
O25	2014	20	206/214	122/126	235/239	127/135	222/222	118/118	186/186	0/0	355/355	144/148
O26	2015	14	202/206	122/142	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S15	unkn	13	198/206	0/0	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O27	2013	13	194/206	126/126	235/251	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S16	unkn	15	198/226	122/130	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M10	unkn	15	130/202	118/122	239/239	131/131	0/0	0/0	0/0	0/0	0/0	152/152
O28	2013	15	202/206	118/122	231/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O29	2013	19	198/222	122/126	231/235	131/131	222/262	130/142	0/0	293/297	355/359	0/0
M11	unkn	18	198/206	122/126	235/235	131/135	262/262	138/142	0/0	0/0	355/359	0/0
O30	2014	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O31	2015	16	206/222	122/122	231/235	131/135	0/0	0/0	0/0	0/0	355/355	152/152
S17	unkn	19	206/222	122/142	231/231	131/135	222/254	130/138	190/190	0/0	355/359	0/0
O32	2014	15	130/198	118/122	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O33	2014	15	130/190	118/122	235/239	135/135	0/0	0/0	0/0	0/0	0/0	0/0
S18	unkn	15	130/214	118/126	235/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
M12	unkn	15	130/206	122/134	235/235	135/135	0/0	0/0	0/0	0/0	0/0	0/0
O34	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O35	2013	14	0/0	122/134	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O36	2014	15	190/210	122/122	227/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0

M13	unkn	15	206/210	122/126	231/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M14	unkn	15	190/206	122/134	235/235	135/135	0/0	0/0	0/0	0/0	0/0	0/0
O37	2013	15	190/198	122/134	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O38	2013	15	202/206	126/126	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O39	2014	15	190/206	122/122	235/235	135/135	0/0	0/0	0/0	0/0	0/0	0/0
O40	2015	13	0/0	122/134	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S19	unkn	17	206/210	122/134	231/235	131/135	222/222	0/0	190/226	0/0	0/0	148/148
O41	2013	15	198/198	122/130	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O42	2013	15	190/198	122/126	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M15	unkn	19	198/206	118/122	235/235	131/135	0/0	118/122	0/0	317/329	355/355	144/148
O43	2014	19	202/226	122/122	235/239	131/135	262/262	118/122	0/0	0/0	355/355	144/152
M16	unkn	17	198/198	122/126	235/235	131/131	0/0	118/122	0/0	0/0	359/363	0/0
O44	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O45	2015	16	198/222	122/134	231/235	131/135	0/0	118/138	0/0	0/0	359/375	0/0
O46	2014	18	198/206	122/130	235/235	135/135	0/0	118/122	0/0	317/317	355/355	148/152
S20	unkn	17	0/0	122/130	235/235	127/135	0/0	118/122	0/0	317/317	0/0	152/152
O47	2016	14	122/222	122/130	239/239	127/131	0/0	0/0	0/0	0/0	0/0	144/144
M17	unkn	20	202/222	122/126	235/239	127/135	222/242	122/270	0/0	293/297	355/359	144/148
O48	2015	17	194/222	122/122	239/239	127/135	222/222	118/270	0/0	0/0	0/0	144/144
O49	2013	19	206/214	118/130	231/239	127/135	222/242	0/0	0/0	329/329	355/355	148/152
S21	unkn	18	122/202	122/126	231/239	135/135	0/0	118/122	174/230	329/329	0/0	144/144
M18	unkn	14	190/198	122/126	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S22	unkn	9	0/0	0/0	0/0	131/131	0/0	0/0	0/0	0/0	0/0	0/0
M19	unkn	19	214/222	118/130	231/231	131/135	242/242	0/0	0/0	329/329	355/355	152/152
O50	2014	14	122/198	122/130	231/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O51	2015	13	198/222	122/130	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S23	unkn	19	190/206	118/122	235/239	131/135	0/0	118/122	0/0	289/329	355/355	140/144
M20	unkn	14	198/206	122/134	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O52	2015	13	194/206	0/0	239/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0

O53	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
M21	unkn	15	206/222	122/122	231/239	135/135	0/0	0/0	0/0	0/0	0/0	0/0
O54	2015	15	202/222	122/130	231/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S24	unkn	15	190/222	122/126	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S25	unkn	15	190/206	122/130	227/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O55	2013	15	198/206	122/130	235/239	135/135	0/0	0/0	0/0	0/0	0/0	0/0
O56	2013	15	202/206	122/130	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O57	2014	15	198/198	122/134	231/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M22	unkn	19	206/210	122/126	235/235	131/135	222/262	138/138	178/198	0/0	355/359	0/0
O58	2014	19	206/206	122/122	235/239	127/131	222/262	138/142	186/198	0/0	355/355	0/0
S26	unkn	15	198/206	122/122	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O59	2013	14	198/206	122/134	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O60	2014	15	190/214	122/122	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S27	unkn	15	122/230	122/122	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M23	2010	18	202/214	122/122	235/235	131/131	262/306	122/122	0/0	321/329	0/0	0/0
O61	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O62	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O63	2015	13	206/206	122/122	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S28	2011	14	190/190	126/134	227/231	131/139	0/0	0/0	0/0	0/0	0/0	0/0
S29	unkn	15	194/198	122/126	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S30	unkn	15	202/206	118/122	227/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S31	unkn	15	198/198	122/130	235/235	127/135	0/0	0/0	0/0	0/0	0/0	0/0
M24	unkn	15	190/198	126/134	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O64	2016	14	198/206	122/126	231/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S32	unkn	15	206/206	118/122	235/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S33	2008	18	202/206	122/126	231/235	131/131	222/222	118/118	186/190	0/0	0/0	0/0
M25	unkn	15	206/210	118/122	231/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
M26	unkn	14	194/206	122/126	235/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O65	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0

O66	2014	14	206/206	118/122	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S34	unkn	15	130/198	122/130	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M27	unkn	15	206/210	118/122	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O67	2014	14	206/206	122/122	231/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
S35	unkn	20	194/206	126/130	235/239	127/127	222/222	130/130	0/0	273/329	355/355	148/148
M28	unkn	20	190/202	118/122	231/239	127/135	222/306	118/122	0/0	289/309	355/355	148/148
O68	2015	16	198/202	118/118	231/235	127/135	190/306	118/122	0/0	0/0	0/0	148/148
S36	unkn	14	134/190	122/142	231/231	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O69	2014	18	190/202	118/122	231/235	127/131	222/222	118/122	0/0	289/289	355/355	144/148
O70	2013	15	190/202	118/118	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S37	unkn	18	190/222	122/134	231/235	131/135	262/262	138/142	186/186	0/0	0/0	0/0
S38	unkn	15	122/230	122/130	235/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O71	2014	15	198/198	122/126	231/235	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O72	2013	15	130/198	122/130	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M29	unkn	15	198/222	122/122	231/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M30	unkn	15	198/206	122/130	227/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O73	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O74	2015	14	122/122	122/126	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O75	2015	14	198/214	122/122	227/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O76	2014	15	198/210	122/122	235/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O77	2014	20	122/206	122/130	235/239	131/135	222/222	118/122	0/0	317/329	355/355	140/156
M31	unkn	13	0/0	122/130	235/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O78	2016	14	130/202	122/142	235/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O79	2013	15	194/198	122/126	231/235	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O80	2013	15	206/226	122/130	235/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O81	2013	15	202/210	122/126	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O82	2014	16	198/222	122/130	239/239	127/131	190/222	118/118	0/0	0/0	0/0	148/152
M32	unkn	19	122/210	126/130	235/239	131/131	222/222	118/118	0/0	317/317	355/355	140/152
S39	unkn	15	210/222	122/126	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0

S40	2008	20	130/198	118/122	231/239	127/131	250/258	142/142	174/186	289/297	355/355	0/0
S41	unkn	17	202/202	118/118	243/243	135/135	222/226	118/142	0/0	0/0	0/0	0/0
S42	unkn	16	122/202	126/130	235/239	131/135	222/222	0/0	0/0	0/0	0/0	0/0
S43	unkn	19	198/238	118/126	235/239	127/135	266/270	118/118	0/0	329/329	0/0	144/144
S44	2012	15	198/206	126/134	239/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
M33	unkn	15	198/206	134/134	239/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O83	2013	15	202/226	122/122	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O84	2016	15	202/226	122/130	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O85	2015	18	194/202	122/126	235/239	127/131	270/274	118/234	0/0	329/329	355/355	144/144
M34	unkn	19	130/202	122/126	235/239	131/135	262/270	118/122	0/0	329/329	355/355	144/152
O86	2016	15	202/222	122/122	231/239	135/135	0/0	0/0	0/0	0/0	0/0	0/0
M35	unkn	15	198/202	122/134	231/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S45	unkn	15	198/222	118/118	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O87	2013	15	194/206	122/122	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
M36	unkn	15	198/206	122/126	235/239	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O88	2015	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O89	2014	15	198/226	122/126	235/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O90	2013	15	130/190	122/122	239/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O91	2014	15	198/198	122/126	239/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O92	2014	15	190/202	118/122	231/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
S46	unkn	18	198/202	118/122	235/235	127/131	190/262	118/118	0/0	0/0	0/0	148/152
O93	2013	15	122/202	126/130	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M37	unkn	15	198/202	122/122	231/235	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O94	2016	14	194/202	122/122	235/239	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O95	2013	15	202/218	122/130	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S47	unkn	15	198/202	126/130	227/231	131/135	0/0	0/0	0/0	0/0	0/0	0/0
S48	2009	15	198/206	122/130	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O96	2013	15	198/198	118/122	231/235	131/131	0/0	0/0	0/0	0/0	0/0	0/0
O97	2014	18	198/218	122/130	235/235	131/135	258/258	122/122	0/0	317/317	0/0	144/152

O98	2015	14	202/206	122/130	235/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
M38	unkn	15	122/206	122/130	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O99	2014	15	202/206	126/130	231/239	135/135	0/0	0/0	0/0	0/0	0/0	0/0
S49	unkn	19	206/206	118/122	231/239	127/131	222/222	138/142	186/186	0/0	355/355	0/0
O100	2014	15	194/198	122/122	231/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
O101	2014	15	122/206	122/130	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M39	unkn	15	206/230	126/130	231/235	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S50	unkn	20	214/222	122/122	235/239	127/131	222/222	118/122	186/186	0/0	355/359	144/156
M40	unkn	19	206/218	122/122	231/231	131/131	222/258	122/126	0/0	317/317	0/0	144/152
O102	2016	14	198/218	118/122	231/235	131/135	0/0	0/0	0/0	0/0	0/0	0/0
M41	2010	15	206/214	118/126	231/235	127/127	0/0	0/0	0/0	0/0	0/0	0/0
M42	unkn	14	202/206	118/122	231/235	127/127	0/0	0/0	0/0	0/0	0/0	0/0
O103	2015	14	198/206	118/118	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O104	2016	18	206/214	122/126	231/235	127/131	190/222	0/0	186/190	0/0	0/0	144/148
S51	unkn	15	198/202	122/130	231/235	127/135	0/0	0/0	0/0	0/0	0/0	0/0
M43	unkn	15	198/202	122/122	239/251	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O105	2015	14	202/222	118/122	235/251	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O106	2016	14	198/198	122/122	235/251	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O107	2013	15	194/202	122/126	239/243	127/135	0/0	0/0	0/0	0/0	0/0	0/0
S52	unkn	19	198/206	122/130	235/239	127/135	222/306	122/122	0/0	289/329	355/355	144/156
M44	unkn	15	198/206	122/122	231/239	131/135	0/0	0/0	0/0	0/0	0/0	0/0
O108	2013	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O109	2016	0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
O110	2014	14	206/226	122/122	235/239	127/135	0/0	0/0	0/0	0/0	0/0	0/0
O111	2015	19	194/202	122/126	235/239	127/131	266/274	118/122	0/0	293/329	355/355	144/152
S53	unkn	20	198/214	118/126	231/235	135/135	222/262	118/118	186/186	0/0	355/359	144/148
S54	unkn	14	198/206	122/134	231/231	131/135	0/0	0/0	0/0	0/0	0/0	144/152
S55	unkn	15	198/206	122/130	239/239	127/131	0/0	0/0	0/0	0/0	0/0	0/0
S56	unkn	19	198/226	122/122	235/235	127/131	222/262	118/118	0/0	0/0	355/355	144/152

Table S3: 111 infants (infantID) their birth cohort year (cohort), genetic mother (genMomID), birthgroup (bgrp), genetic sire (sireID), the paternity criteria (patCrit) with which sire was assigned, paternity likelihood confidence level of parent-offspring trio (patLike) with which sire was confirmed, comments for certain samples (comment)

infantID	cohort	genMomID	bgrp	sireID	patCrit	patLike	comment
O1	2013	M1	RST	S53	strict	0.95	
O2	2015	M1	RST	S19	strict	0.95	
O3	2014		RST				no sample
O4	2013	M2	PT	S21	strict	0.95	
O5	2014	M2	PT	S21	strict	0.95	
O6	2015	M4	RBM	S17	strict	0.95	
O7	2014	M3	RBM	S16	strict	0.95	
O8	2015	M3	RBM	S17	strict	0.95	
O9	2013	M3	RBM	S36	strict	0.95	
O10	2016	M4	RBM	S17	strict	0.95	
O11	2014	M4	RBM	S37	strict	0.95	
O12	2014	M5	RST	S2	strict	0.95	
O13	2015		RST				no sample
O14	2016	M5	RST	S5	strict	0.95	
O15	2014	M7	RBM	S33	strict	0.95	
O16	2014	M6	PT	S51	strict	0.95	
O17	2013	M8	RST	S42	strict	0.95	
O18	2014	M8	RST	S47	strict	0.95	
O19	2015	M8	RST	S2	strict	0.95	
O20	2015	M7	RBM	S35	strict	0.95	
O21	2013	M6	PT	S51	strict	0.95	
O22	2016		RBM				no sample
O23	2016	M8	RST	S45	strict	0.95	
O24	2016	M9	RST	S21	strict	0.95	
O25	2014	M9	RST	S53	strict	0.95	
O26	2015	M9	RST	S5	strict	0.95	
O27	2013	M9	RST	S35	strict	0.95	
O28	2013	M10	RBM	S33	best match	0.95	
O29	2013	M11	RBM	S17	strict	0.95	
O30	2014		RBM				no sample
O31	2015	M11	RBM	S17	strict	0.95	
O32	2014	M10	RBM	S56	strict	0.95	
O33	2014	M12	RBM	S23	strict	0.95	
O34	2016		RBM				no sample
O35	2013	M12	RBM	S56	strict	0.95	
O36	2014	M13	PT	S25	strict	0.95	
O37	2013	M14	RST				no match
O38	2013	M13	PT	S21	strict	0.95	
O39	2014	M14	RST	S26	strict	0.95	
O40	2015	M12	RBM	S37	relaxed	0.95	

O41	2013	M15	PT	S31	best match	0.95	
O42	2013	M16	RBM	S36	strict	0.95	
O43	2014	M34	RBM	S56	strict	0.95	
O44	2016		RBM				no sample
O45	2015	M16	RBM	S37	best match	0.95	
O46	2014	M15	PT	S20	best match	0.95	
O47	2016	M17	RST	S42	best match	0.95	
O48	2015	M17	RST	S2	strict	0.95	
O49	2013	M19	RST	S35	strict	0.95	
O50	2014	M18	RST	S42	strict	0.95	
O51	2015	M19	RST	S56	strict	0.95	
O52	2015	M20	RST	S2	strict	0.95	
O53	2016		RST				no sample
O54	2015	M21	RST	S11	strict	0.95	
O55	2013	M21	RST	S52	strict	0.95	
O56	2013	M22	PT	S51	strict	0.95	
O57	2014	M20	RST	S11	strict	0.95	
O58	2014	M22	PT	S49	strict	0.95	
O59	2013	M20	RST	S11	strict	0.95	
O60	2014	M23	RBM	S37	strict	0.95	
O61	2015		RBM				no sample
O62	2016		RBM				no sample
O63	2015	M22	PT	S49	strict	0.95	
O64	2016	M24	RST	S52	strict	0.95	
O65	2016		PT				no sample
O66	2014	M26	PT	S49	strict	0.95	
O67	2014	M25	PT	S49	strict	0.95	
O68	2015	M28	RBM	S46	strict	0.95	
O69	2014	M28	RBM	S23	strict	0.95	
O70	2013	M28	RBM	S23	strict	0.95	
O71	2014	M30	RBM	S4	strict	0.95	
O72	2013	M31	RST	S52	strict	0.95	
O73	2016		RBM				no sample
O74	2015	M32	PT	S21	strict	0.95	
O75	2015	M30	RBM	S50	strict	0.95	
O76	2014	M31	RST	S11	strict	0.95	
O77	2014	M32	PT	S52	strict	0.95	
O78	2016	M31	RST	S5	strict	0.95	
O79	2013	M29	RST	S35	strict	0.95	
O80	2013	M30	RBM	S56	strict	0.95	
O81	2013	M32	PT	S21	strict	0.95	
O82	2014	M29	RST	S55	strict	0.95	
O83	2013	M35	RBM	S56	strict	0.95	
O84	2016	O83	RBM	S42	strict	0.95	
O85	2015	M34	RBM	S1	strict	0.95	

O86	2016	M34	RBM	S17	strict	0.95	
O87	2013	M36	RST	S2	best match	0.95	
O88	2015		RST				no sample
O89	2014	M16	RBM	S56	strict	0.95	
O90	2013	M34	RBM	S23	strict	0.95	
O91	2014	M36	RST	S55	strict	0.95	
O92	2014	M35	RBM	S23	strict	0.95	
O93	2013	M38	PT	S21	best match	0.95	
O94	2016	M37	RST	S2	strict	0.95	
O95	2013	M40	PT	S51	strict	0.95	
O96	2013	M37	RST				no match
O97	2014	M40	PT	S20	best match	0.95	
O98	2015	M37	RST	S35	strict	0.95	
O99	2014	M38	PT	S21	strict	0.95	
O100	2014	M37	RST	S2	strict	0.95	
O101	2014	M39	PT	S21	strict	0.95	
O102	2016	M40	PT	S53	strict	0.95	
O103	2015	M41	RST	S45	strict	0.95	
O104	2016	M41	RST	S19	strict	0.95	
O105	2015	M43	RST	S45	strict	0.95	
O106	2016	M43	RST	S56	strict	0.95	
O107	2013	M43	RST	S35	best match	0.95	
O108	2013		RBM				no sample
O109	2016		RBM				no sample
O110	2014	M44	RBM	S56	strict	0.95	
O111	2015	M10	RBM				no match

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