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Supplemental Data

Mutability of Y-Chromosomal Microsatellites:

Rates, Characteristics, Molecular Bases,

and Forensic Implications

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Table S1. Bayesian Median Mutation Rates, Mutation Summaries, Repeat Structures, and Genotyping Details of 186 Y-STRs from Analysing DNA-Confirmed Father-Son Pairs (See Footnote for Explanation)

GBD ID	Repeat Structure (as defined in Methods and Materials)	Bayesian median mutation rate	Bayesian 95% credible interval	Gains/ Losses	Total Mutations	Total Meioses	Primer 1 Sequence 5' - 3'	Primer 2 Sequence 5' - 3'	Ta in °C	Multi-plex	Ref
DYF380S1	**$(AAT)_{8-11}$**	$3.84x10^{-4}$	$1.42x10^{-5}$ – $2.06x10^{-3}$	0/0	0	1790	AGCCATGTGGAT TCACCACT	GACAAACCCATC CTGTCTCC	TD 70-50	28	[29]
DYF381S1	**$(TTG)_{7-8}$**	$3.95 x10^{-4}$	$1.43 x10^{-5}$– $2.07x10^{-3}$	0/0	0	1774	TCCATCCATCAA TCCATCAA	CAACCCAAACA CTTGCAGAA	TD 60-50	45	[29]
DYF381S2	**$(AAC)_{7-8}$**	$3.91 x10^{-4}$	$1.44 x10^{-5}$– $2.11x10^{-3}$	0/0	0	1756	CAACCCAAACA CTTGCAGAA	TCCATCCATCAA TCCATCAA	TD 60-50	20	[29]
DYF382S1	**$(GGAT)_{9-16}$**$(AGAT)_1$ $(GGAT)_3N_8(GGAC)_3$	$1.05 x10^{-3}$	$1.52 x10^{-4}$– $3.47x10^{-3}$	1/0	1	1609	TTGTAAAATGGG CATGTGGA	CCCAAAGTGCTA CCCACCTA	TD 70-50	54	[29]
DYF386S1	**$(AAT)_{7-16}$**	$6.02 x10^{-3}$	$3.10 x10^{-3}$– $1.04x10^{-2}$	3/7	10	1772	GACTGCTCAACT GCACTCCA	CCAATGTTACTC ACTATGCTGCTT	TD 70-50	29	[29]
DYF387S1	$(AAAG)_3(GTAG)_1(GAAG)_4N_{16}$ $(GAAG)_9$**$(AAAG)_{13}$**	$1.59 x10^{-2}$	$1.08 x10^{-2}$– $2.24x10^{-2}$	15/13	28	1804	GCCTGGGTGAC AGAGCTAGA	GCCACAGTGTGA GAAGTGTGA	TD 70-50	49	[29]
DYF388S1	$(CTTC)_6$**$(CTTT)_{5-19}$**$N_{18}(CTTC)_3$ $(TTTC)_1(CTTC)_3N_8(CTTC)_3$ $N_{32}(CTTC)_3$	$6.85 x10^{-3}$	$3.64 x10^{-3}$– $1.15x10^{-2}$	5/6	11	1702	TTCTAGGAAGAT TAGCCACAACA	CCCAGACAACA GAGCAAAAC	TD 65-50	52	[29]
DYF390S1	**$(TTTA)_{9-14}$**	$9.95 x10^{-4}$	$1.42 x10^{-4}$– $3.34x10^{-3}$	0/1	1	1680	AGCATTCCCTTT CTCATTGC	TGACGAGTTAGT GGGTGCAG	TD 70-50	12	[29]
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{16-30}$**$(CAG)_{1-2}$	$8.57 x10^{-3}$	$4.91 x10^{-3}$– $1.37x10^{-2}$	9/5	14	1712	GCAACCAAAAG GTTTGGAGA	GTGGAGCCTGCT TAAAGGAA	TD 70-50	31	[29]
DYF394S1	$(ATT)_3(GTT)_1$**$(ATT)_{6-9}$**	$3.91 x10^{-4}$	$1.40 x10^{-5}$– $2.09x10^{-3}$	0/0	0	1768	GCCCTGAACAA AATCTGGAG	GCAGTGAGCTG AGATGGTGA	TD 70-50	24	[29]
DYF396S1	**$(TCT)_{6-9}$**	$3.86 x10^{-4}$	$1.37 x10^{-5}$– $2.06x10^{-3}$	0/0	0	1785	TGCACGTCTTCA TACATAGAGC	TTGAATGCCAAG TTATGTAGCA	TD 70-50	36	[29]
DYF399S1	$(GAAA)_3N_{7-8}$**$(GAAA)_{10-23}$**	$7.73 x10^{-2}$	$6.51 x10^{-2}$– $9.09x10^{-2}$	55/84	139	1794	GGGTTTTCACCA GTTTGCAT	CCATGTTTTGGG ACATTCCT	TD 70-50	49	[29]
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}$ $(AAGG)_3N_8(AAGG)_3(AAAG)_1$ $(AAGG)_3N_{13}$ **$(AAAG)_{8-23}$** $G(AAGG)_6$	$6.50 x10^{-3}$	$3.08 x10^{-3}$– $1.18x10^{-2}$	3/5	8	1333	TCGCAAACATA GCACTTCAG	TTCTAGGAAGAT TAGCCACAACA	TD 70-50	48	[29]
DYF403S1a	**$(TTCT)_{10-17}N_{2-3}(TTCT)_{3-17}$**	$3.10 x10^{-2}$	$2.30 x10^{-2}$– $4.07x10^{-2}$	29/17	46	1504	CAAAATTCATGT GGATAATGAG	ACAGAGCAGGA TTCCATCTA	TD 70-50	54	[29]
DYF403S1b	$(TTCT)_{12}N_2$**$(TTCT)_8(TTCC)_9$ $(TTCT)_{14}$** $N_2(TTCT)_3$	$1.19 x10^{-2}$	$7.05 x10^{-3}$– $1.86x10^{-2}$	5/11	16	1402	CAAAATTCATGT GGATAATGAG	ACAGAGCAGGA TTCCATCTA	TD 70-50	54	[29]
DYF404S1	**$(TTTC)_{10-20}$**$N_{42}(TTTC)_3$	$1.25 x10^{-2}$	$7.92 x10^{-3}$– $1.84x10^{-2}$	14/7	21	1739	GGCTTAAGAAA TTTCAACGCATA	CCATGATGGAAC AATTGCAG	TD 70-50	38	[29]
DYF405S1	**$(GGAA)_{4-14}$**$N_{115}(GGAA)_3$ $(GAAA)_1(GGAA)_3$	$1.52 x10^{-3}$	$3.54 x10^{-4}$– $4.13x10^{-3}$	1/1	2	1756	CCGTGGTGTCTG AAGCATAG	CACATCAAGTTG CCTGTTTCA	TD 70-50	26	[29]
DYF406S1	**$(TATC)_{8-14}$**	$3.82 x10^{-3}$	$1.61 x10^{-3}$– $7.48x10^{-3}$	3/3	6	1744	CCTGGGTGACAC AGTGAGACT	TCCACCAAAATT CCATGACA	TD 70-50	28	[29]

DYF410S1	**$(AAAT)_{7-13}$**	2.04×10^{-3}	4.82×10^{-4} – 5.52×10^{-3}	2/0	2	1309	TGACGAGTTAGT GGGTGCAG	GCGGCTAGGGT AGAATCCAT	TD 70-50	48	[29]
DYS19/ DYS394	$(TAGA)_3(TAGG)_1$**$(TAGA)_{6-16}$**	4.37×10^{-3}	1.98×10^{-3} – 8.23×10^{-3}	4/3	7	1756	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS385a	$(AAGG)_4N_{14}(AAAG)_3N_{12}(AAAG)_3 N_{29}$**$(AAGG)_{6-7}(GAAA)_{7-23}$**	2.08×10^{-3}	6.24×10^{-4} – 5.06×10^{-3}	2/1	3	1762	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS385b	$(AAGG)_4N_{14}(AAAG)_3N_{12}$ $(AAAG)_3 N_{29}$ **$(AAGG)_{6-7}(GAAA)_{7-23}$**	4.14×10^{-3}	1.75×10^{-3} – 8.09×10^{-3}	6/0	6	1615	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS388	**$(ATT)_{9-18}$**	4.25×10^{-4}	1.51×10^{-5} – 2.26×10^{-3}	0/0	0	1635	GTGAGTTAGCCG TTTAGCGA	CAGATCGCAACC ACTGCG	TD 60-50	50	[29]
DYS389I	$(TCTG)_3$**$(TCTA)_{6-14}$**	5.51×10^{-3}	2.72×10^{-3} – 9.74×10^{-3}	4/5	9	1751	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS389II	**$(TCTG)_{4-5}(TCTA)_{10-14}$**$N_{28}$ $(TCTG)_3$ **$(TCTA)_{6-14}$**	3.83×10^{-3}	1.61×10^{-3} – 7.49×10^{-3}	2/4	6	1743	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS390	$(TCTG)_8$**$(TCTA)_{9-4}$**$(TCTG)_1$ $(TCTG)_4$	1.52×10^{-3}	3.52×10^{-4} – 4.09×10^{-3}	0/2	2	1758	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS391	$(TCTG)_3$**$(TCTA)_{6-15}$**	3.23×10^{-3}	1.26×10^{-3} – 6.65×10^{-3}	3/2	5	1759	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS392	**$(TAT)_{4-20}$**	9.70×10^{-4}	1.43×10^{-4} – 3.23×10^{-3}	1/0	1	1728	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS393/ DYS395	**$(AGAT)_{7-18}$**	2.11×10^{-3}	6.21×10^{-4} – 5.00×10^{-3}	2/1	3	1750	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS425/ DYF371	**$(TGT)_{8-14}$**	1.51×10^{-3}	3.48×10^{-4} – 4.08×10^{-3}	1/1	2	1778	TGGAGAGAAGA AGAGAGAAAT	AGTAATTCTGGA GGTAAAATGG	TD 60-50	20	[29]
DYS426	**$(GTT)_{9-12}$**	3.98×10^{-4}	1.49×10^{-5} – 2.11×10^{-3}	0/0	0	1735	CTCAAAGTATGA AAGCATGACCA	GGTGACAAGAC GAGACTTTGTG	TD 70-50	38	[29]
DYS434	**$(ATCT)_{9-12}$**	4.04×10^{-4}	1.47×10^{-5} – 2.14×10^{-3}	0/0	0	1715	CACTCCCTGAGT GCTGGATT	GGAGATGAATG AATGGATGGA	TD 60-50	40	[29]
DYS435	**$(TGGA)_{10-12}$**	1.00×10^{-3}	1.47×10^{-4} – 3.33×10^{-3}	0/1	1	1676	AGCATCTCCACA CAGCACAC	TTCTCTCTCCCC CTCCTCTC	TD 60-50	41	[29]
DYS436	**$(GTT)_{11-13}$**	3.84×10^{-4}	1.38×10^{-5} – 2.05×10^{-3}	0/0	0	1798	CCAGGAGAGCA CACACAAAA	GCAATCCAACTT CAGCCAAT	TD 60-50	18	[29]
DYS437	**$(TCTA)_{4-12}$**$(TCTG)_2(TCTA)_4$	1.53×10^{-3}	3.54×10^{-4} – 4.10×10^{-3}	2/0	2	1760	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS438	**$(TTTTC)_{7-16}$**	9.56×10^{-4}	1.37×10^{-4} – 3.18×10^{-3}	0/1	1	1751	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS439	$(GATA)_3N_{32}$**$(GATA)_{5-19}$**	3.84×10^{-3}	1.63×10^{-3} – 7.54×10^{-3}	2/4	6	1736	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS441	**$(TTCC)_{12-21.2}$**	1.18×10^{-3}	1.66×10^{-4} – 3.93×10^{-3}	1/0	1	1419	ATGTACCTGTAG CCCCAGTGAAC	AAGTTGCAGTGA GCGAAGATTG	TD 70-50	27	[45]
DYS442	**$(GATA)_{9-16}$**$(GACA)_3$	9.78×10^{-3}	5.59×10^{-3} – 1.57×10^{-2}	2/12	14	1497	AAACGCCCATC AATCAATGAGT G	CCCCAAGTCCCC AAAGTGTGT	TD 70-50	16	[45]
DYS443	**$(TTCC)_{11-17}$**$(CTT)_3$	2.10×10^{-3}	6.24×10^{-4} – 5.01×10^{-3}	2/1	3	1745	GAGTTCATGCTG ATGACAAGC	TCATTGGCCACC TGACATTA	TD 70-50	29	[29]
DYS444	**$(TAGA)_{9-16}$**	5.45×10^{-3}	2.68×10^{-3} – 9.65×10^{-3}	3/6	9	1775	TGTGAACCATTT GGCATGTT	TCACGTTGTTCA AGGGTCAA	TD 60-50	45	[29]

DYS445	**(TTTA)$_{6-14}$**	2.16 x10^{-3}	6.38 x10^{-4}–5.15x10^{-3}	2/1	3	1704	GAGCTGAGATTATGCCACCAAAA	AGTTAAGAGCCCCACCTTCCTG	TD 70-50	32	[45]
DYS446	**(TCTCT)$_{8-21}$**	2.67 x10^{-3}	9.38 x10^{-4}–5.87x10^{-3}	2/2	4	1747	TATTTTCAGTCTTGTCCTGTC	AAATGTATGGCCAACATAGCAAAACC	TD 70-50	30	[45]
DYS447	**(TTATA)$_{6-7}$**(TTATT)$_1$ **(TTATA)$_{8-13}$** (TTATT)$_1$ **(TTATA)$_{5-9}$**	2.12 x10^{-3}	6.28 x10^{-4}–5.11x10^{-3}	1/2	3	1722	GGGCTTGCTTTGCGTTATCT	GGTCACAGCATGGCTTGGTT	TD 70-50	27	[45]
DYS448	**(AGAGAT)$_{11-13}$**N$_{42}$ **(AGAGAT)$_{8-9}$**	3.94 x10^{-4}	1.41 x10^{-5}–2.11x10^{-3}	0/0	0	1747	Yfiler	Yfiler	Yfiler	Yfiler	[45]
DYS449	**(TTCT)$_{13-9}$**N$_{22}$(TTCT)$_3$N$_{12}$ **(TTCT)$_{13-19}$**	1.22 x10^{-2}	7.54 x10^{-3}–1.85x10^{-2}	14/5	19	1617	TGGAGTCTCTCAAGCCTGTTC	CCATTGCACTCTAGGTTGGAC	TD 60-50	46	[29]
DYS450	**(TTTTA)$_{7-11}$**N$_{12}$(TTTTA)$_3$	1.04 x10^{-3}	1.54 x10^{-4}–3.50x10^{-3}	0/1	1	1598	GCCTTTCCAATTTCAATTTCTGA	TGGAATATGATGCAGCTGTTTGT	TD 70-50	39	[45]
DYS452	**(TATAC)$_{5-4}$ [(CATAC)$_1$(TATAC)$_1$]$_{2-4}$** N$_{20}$(TATAC)$_3$(CATAC)$_1$ (TATAC)$_3$	4.02 x10^{-3}	1.56 x10^{-3}–8.28x10^{-3}	2/3	5	1411	TTTATTATACTCAGCTAATTAATTGGTT	GTGGTGTTCTGATGAGGATAAT	TD 70-50	16	[45]
DYS453	**(AAAT)$_{9-15}$**	3.89 x10^{-4}	1.43 x10^{-5}–2.08x10^{-3}	0/0	0	1782	GGGTAACAGAACAAGACAGT	CTAAAAGTATGGATATTCTTCG	TD 60-50	45	[45]
DYS454	**(AAAT)$_{7-13}$**	4.75 x10^{-4}	1.71 x10^{-5}–2.55x10^{-3}	0/0	0	1458	TCACAATGACCCTTTTGTGC	GTTCTTTGGCCCTGCATTTA	TD 60-50	46	[29]
DYS455	**(ATTT)$_{6.2-11}$**	4.26 x10^{-4}	1.59 x10^{-5}–2.28x10^{-3}	0/0	0	1618	ATCTGAGCCGAGAGAATGATA	GGGGTGGAAACGAGTGTT	TD 70-50	39	[45]
DYS456	**(AGAT)$_{11-23}$**	4.94 x10^{-3}	2.35 x10^{-3}–8.97x10^{-3}	6/2	8	1757	Yfiler	Yfiler	Yfiler	Yfiler	[45]
DYS458	**(GAAA)$_{11-24}$**	8.36 x10^{-3}	4.80 x10^{-3}–1.34x10^{-2}	7/7	14	1756	Yfiler	Yfiler	Yfiler	Yfiler	[45]
DYS459	**(ATTT)$_{6-11}$**	2.67 x10^{-3}	9.36 x10^{-4}–5.86x10^{-3}	2/2	4	1741	CAGGTGAACTGGGGTAAATAAT	TTGAGCAACAGAGCAAGACTTA	TD 70-50	27	[45]
DYS460	**(TAGA)$_{8-13}$**	6.22 x10^{-3}	3.19 x10^{-3}–1.07x10^{-2}	2/8	10	1717	GCCAAACTCTTTCCAAGAAG	TCTATCCTCTGCCTATCATTTATTA	TD 60-50	20	[29]
DYS461	**(TAGA)$_{8-13}$**	9.89 x10^{-4}	1.40 x10^{-4}–3.29x10^{-3}	0/1	1	1695	AGGCAGAGGATAGATGATATGGAT	TTCAGGTAAATCTGTCCAGTAGTGA	TD 60-50	19	[29]
DYS462	**(CATA)$_{9-14}$**	2.65 x10^{-3}	9.20 x10^{-4}–5.80x10^{-3}	1/3	4	1771	TGTGCTGTACCAGTTGCCTA	CCAGCCTGAGCAAGAGAGTA	TD 70-50	30	[45]
DYS463	**(AAAGG)$_{6-7}$(AAGGG)$_{9-19}$**	1.51 x10^{-3}	3.49 x10^{-4}–4.07x10^{-3}	2/0	2	1776	AATTCTAGGTTTGAGCAAAGACA	ATGAGGTTGTGTGACTTGACTG	TD 70-50	33	[45]
DYS464	**(CCTT)$_{9-20}$**N$_{46}$ (CCTT)$_3$N$_8$(CCTT)$_4$	7.27 x10^{-3}	3.96 x10^{-3}–1.20x10^{-2}	5/7	12	1745	TTACGAGCTTTGGGCTATG	CCTGGGTAACAGAGAGACTCTT	TD 70-50	31	[45]
DYS468	(CTG)$_4$N$_{44}$(CCT)$_3$N$_{40}$(CTT)$_3$N$_{35}$ (CCT)$_4$N$_8$ (CTC)$_4$ **(CTT)$_{7-9}$(ATTCAT)$_{8-10}$**	1.74 x10^{-3}	4.03 x10^{-4}–4.69x10^{-3}	1/1	2	1535	GGGAGTTCCAAACTTTTTCACA	GGGGGAAGATGACAATGATG	TD 70-50	37	[29]
DYS469	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{10-}$**	2.99 x10^{-3}	1.04 x10^{-3}–	3/1	4	1555	TTTGGGGACTGA	CCCCAGCTGGTA	TD	41	[29]

	30T $(CTT)_3N_{17}(CTT)_5N_{37}(CTT)_3$ $N_{12}(CTT)_4N_{12}(CTT)_3N_{12}(CTT)_5$ $(CCT)_4N_9(CTT)_3(CCT)_3$		$6.54x10^{-3}$				ATTCAAAA	AAATGAGT	60-50		
DYS470	**(GTT)$_{8-12}$**$N_{33}(GTT)_3$	$4.20 x10^{-4}$	$1.51 x10^{-5}$–$2.23x10^{-3}$	0/0	0	1651	GGTCCTTCAGGA ACCAGTTG	TGGCTGTAAAAC AAATATCAGCA	TD 60-50	44	[29]
DYS472	**(AAT)$_{7-9}$**	$4.46 x10^{-4}$	$1.62 x10^{-5}$–$2.37x10^{-3}$	0/0	0	1549	AGATTGTCCCAC CTGCACTC	GAGGCACTGTGT TCAGCAAA	TD 70-50	1	[29]
DYS473	$(AAT)_8N_{12}$**(AAT)$_{9-13}$**	$4.13 x10^{-4}$	$1.47 x10^{-5}$–$2.21x10^{-3}$	0/0	0	1676	CAGCCTGGATA GCAGAGTGA	CCTCTTTTCTTTG CTGGTTCCTT	TD 60-50	44	[29]
DYS474	**(AAC)$_{9-10}$**	$3.92 x10^{-4}$	$1.41 x10^{-5}$–$2.08x10^{-3}$	0/0	0	1766	CCCCTGAACTTA AAAGGTGGA	GGCATCTAGGTT TACTGTGAGGA	TD 60-50	22	[29]
DYS475	**(TAA)$_{7-9}$**$(CAA)_1(TAA)_3$	$4.14 x10^{-4}$	$1.54 x10^{-5}$–$2.21x10^{-3}$	0/0	0	1681	CCCACCAAGGG TTTTCAGA	CCCACAGAAAG ATGTTGAGG	TD 60-50	23	[29]
DYS476	**(TGA)$_{7-13}$**	$9.40 x10^{-4}$	$1.35 x10^{-4}$–$3.12x10^{-3}$	1/0	1	1779	CGACTATGATTT GGGCTGTG	AGCTGGGAAGT ACTCAATGCTC	TD 70-50	7	[29]
DYS477	**(TTG)$_{8-9}$**	$3.91 x10^{-4}$	$1.37 x10^{-5}$–$2.07x10^{-3}$	0/0	0	1765	TAACTTACAGAA AAGCTCAGGG	AAGTGAATCGA GTGCCTAGC	TD 60-50	42	[29]
DYS478	$(CAG)_4(CAA)_1(CAG)_8$	$4.04 x10^{-4}$	$1.46 x10^{-5}$–$2.17x10^{-3}$	0/0	0	1718	ACAGGCAACAA ATTGGGTA	TCAGGATAAGCT AGCAGTCTATG	TD 60-50	20	[29]
DYS480	**(TTA)$_{6-10}$**	$3.91 x10^{-4}$	$1.44 x10^{-5}$–$2.09x10^{-3}$	0/0	0	1783	CCAGCACCTAG GTTGAGGTA	CAGCACTCCAAA ATGACAGA	TD 70-50	9	[29]
DYS481	**(CTT)$_{22-32}$**	$4.97 x10^{-3}$	$2.36 x10^{-3}$–$9.03x10^{-3}$	3/5	8	1744	AGGAATGTGGC TAACGCTGT	ACAGCTCACCAG AAGGTTGC	TD 70-50	12	[29]
DYS484	**(AAT)$_{10-16}$**$N_{12}(AAT)_3(TAT)_3$	$2.61 x10^{-3}$	$9.09 x10^{-4}$–$5.73x10^{-3}$	2/2	4	1792	CCTATCATCCGC ATGGACTT	CCTGGTTGACAA AGCCAGAT	TD 60-50	21	[29]
DYS485	**(TTT)$_{0-1}$(TTA)$_{11-21}$**	$4.04 x10^{-4}$	$1.53 x10^{-5}$–$2.13x10^{-3}$	0/0	0	1730	AAAGCAGACTT CGCCACTACA	AAAAATTAGCTG GGCCTGGT	TD 70-50	9	[29]
DYS487	**(AAT)$_{10-16}$**	$1.77 x10^{-3}$	$4.08 x10^{-4}$–$4.78x10^{-3}$	1/1	2	1511	TGTGGGAGGCCT TAAGAAAA	CCTGGGCAACA GAGAAAGAC	TD 70-50	1	[29]
DYS488	**(ATA)$_{10-16}$**	$4.40 x10^{-4}$	$1.60 x10^{-5}$–$2.32x10^{-3}$	0/0	0	1576	GGGGAGGGATA GCATTAGGA	TACCCTGGTCCA CTTCAACC	TD 70-50	3	[29]
DYS489	**(TTA)$_{10-15}$**	$4.48 x10^{-4}$	$1.66 x10^{-5}$–$2.38x10^{-3}$	0/0	0	1552	ACCCAAAGATTT GTCGGCTA	AAAATTAGCCG AGCATGGTG	TD 70-50	37	[29]
DYS490	**(TTA)$_{8-16}$**	$3.95 x10^{-4}$	$1.48 x10^{-5}$–$2.10x10^{-3}$	0/0	0	1759	CCTGGCAGGAA TTATCCAGA	GCAGAGCTTGCA CTGAGCT	TD 70-50	10	[29]
DYS491	**(ATA)$_{8-14}$**	$4.09 x10^{-4}$	$1.45 x10^{-5}$–$2.17x10^{-3}$	0/0	0	1706	GGAATGGGGAG GGATAACAT	GGAGAAAATTC AATGCAGATACC	TD 70-50	15	[29]
DYS492	**(ATA)$_{9-15}$**	$3.92 x10^{-4}$	$1.45 x10^{-5}$–$2.09x10^{-3}$	0/0	0	1770	AGATGAGCCAG GCTTCAGAC	AGTAGGGGTCA GGCACAATG	TD 70-50	7	[29]
DYS493	**(AAC)$_{8-11}$**	$3.86 x10^{-4}$	$1.45 x10^{-5}$–$2.06x10^{-3}$	0/0	0	1800	ACTCCAGTCTGG GTGGACAG	CCCTGGGATTAT AGGCATGA	TD 70-50	36	[29]
DYS494	**(TA)$_{4-6}$(TAA)$_{7-11}$**	$3.89 x10^{-4}$	$1.43 x10^{-5}$–$2.07x10^{-3}$	0/0	0	1783	TTGCAACACTGT TCATTTGGA	AACAAACCTGC ATGTTCTTCAA	TD 70-50	11	[29]
DYS495	**(AAT)$_{12-19}$**	$2.09 x10^{-3}$	$6.19 x10^{-4}$–$4.97x10^{-3}$	2/1	3	1755	CCCAGCTATTCA GGAGGTTG	GCCAGAAAGTG TGAGTCATCC	TD 70-50	10	[29]
DYS497	**(TTA)$_{9-16}$**	$1.49 x10^{-3}$	$3.46 x10^{-4}$–$4.05x10^{-3}$	1/1	2	1786	AACATGTGCGTT TTCAACCA	GCATGTTGTGCA CATGTAACC	TD 70-50	13	[29]

DYS499	$(TTG)_8$	3.93×10^{-4}	1.40×10^{-5} – 2.09×10^{-3}	0/0	0	1771	TGGGTCAGAGA AAGGATTGC	GGAGGAAGAGG TTGCAATGA	TD 70-50	47	[29]
DYS502	**$(AAT)_4(TGC)_1(CAT)_{6-9}$**	3.85×10^{-4}	1.43×10^{-5} – 2.05×10^{-3}	0/0	0	1792	CAGCAAGCCAC CATACCATA	TGTGCTTTTGGA GTTTGGAG	TD 70-50	34	[29]
DYS504	**$(CCTT)_{10-20}$**$N_7(CCCT)_3$	3.24×10^{-3}	1.26×10^{-3} – 6.62×10^{-3}	1/4	5	1746	TCTACACCACTG TGCCAAGC	GGCAACAGAGC AACCCTCT	TD 70-50	8	[29]
DYS505	**$(TCCT)_{9-15}$**	1.51×10^{-3}	3.50×10^{-4} – 4.07×10^{-3}	1/1	2	1760	TCTGGCGAAGTA ACCCAAAC	TCGAGTCAGTTC ACCAGAAGG	TD 70-50	6	[29]
DYS508	**$(TATC)_{8-15}$**	3.03×10^{-3}	1.05×10^{-3} – 6.63×10^{-3}	2/2	4	1544	ACAATGGCAAT CCCAAATTC	GAACAAATAAG GTGGGATGGAT	TD 70-50	1	[29]
DYS509	**$(AAAT)_{7-11}$**$(AATAA)_1(AAAT)_3$	1.06×10^{-3}	1.55×10^{-4} – 3.53×10^{-3}	0/1	1	1590	AACATGGTGAA TCCCTGTCTCT	TGTCCCCAGGGC TTTTTAAT	TD 70-50	37	[29]
DYS510	$(GATA)_3N_{12}$**$(GATA)_{9-15}$**N_{13} $(GGAT)_4N_9(GATA)_3$	5.99×10^{-3}	3.09×10^{-3} – 1.03×10^{-2}	4/6	10	1779	TTTTTCCTCCCTT ACCACAGA	TCTGGAGAAGA CAGAACTTGTCA	TD 70-50	34	[29]
DYS511	**$(GATA)_{9-14}$**	1.52×10^{-3}	3.51×10^{-4} – 4.11×10^{-3}	1/1	2	1760	GATAGGATGGG GTGGATGTG	TGTGAATTCCCC TTCTACATCTC	TD 70-50	13	[29]
DYS512	**$(AGAT)_{7-13}$**	3.96×10^{-4}	1.44×10^{-5} – 2.11×10^{-3}	0/0	0	1738	CACGCCCAGCTA ATTTTTGT	GGGAGGAATAA AGGAAGGTTG	TD 70-50	26	[29]
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3$ $(CGTA)_1$ **$(TCTA)_{9-15}$**	6.09×10^{-3}	3.14×10^{-3} – 1.05×10^{-2}	6/4	10	1751	ATTGATCCATCC GTCTGTCC	GTTGGATGAAG GGAGAGCAG	TD 70-50	32	[29]
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{9-18}$**	6.66×10^{-3}	3.55×10^{-3} – 1.12×10^{-2}	7/4	11	1753	TTTCCAATGACC AAGACGTG	CGAACCTGCAA ATTGTTCAC	TD 60-50	22	[29]
DYS517	**$(AAAG)_{10-18}$**$N_8(AAAG)_3$	3.21×10^{-3}	1.25×10^{-3} – 6.62×10^{-3}	3/2	5	1766	TAATCGTCCCAT TTTGAGCA	TGCAATCCCAAA CTCAGAAA	TD 60-50	22	[29]
DYS518	$(AAAG)_3(GAAG)_1$**$(AAAG)_{14-22}$** $(GGAG)_1(AAAG)_4N_6$ **$(AAAG)_{11-19}$**$N_{27}(AAGG)_4$	1.84×10^{-2}	1.25×10^{-2} – 2.60×10^{-2}	8/20	28	1556	GGCAACACAAG TGAAACTGC	TCAGCTCTTACC ATGGGTGAT	TD 70-50	54	[29]
DYS520	**$(GATA)_{10-13}(CATA)_{10-11}$**	2.66×10^{-3}	9.22×10^{-4} – 5.80×10^{-3}	2/2	4	1760	AACAGCCTGCCC AACATAGT	ACCATCATGCCC TGCAATA	TD 70-50	24	[29]
DYS521	$(CTTT)_5(TCTT)_3(TTTT)_1$ $(CTTT)_5T$ **$(CTTT)_{4-14}$**	9.54×10^{-4}	1.37×10^{-4} – 3.18×10^{-3}	0/1	1	1751	GCCACAGCACCT GTTCAGTA	GCTGGGAGTGA GACCCTGTA	TD 70-50	24	[29]
DYS522	**$(ATAG)_{8-15}$**	1.04×10^{-3}	1.53×10^{-4} – 3.44×10^{-3}	1/0	1	1620	CCTTTGAAATCA TTCATAATGC	TCATAAACAGA GGGTTCTGG	TD 70-50	4	[29]
DYS525	**$(AGAT)_{8-13}$**	9.78×10^{-4}	1.42×10^{-4} – 3.26×10^{-3}	0/1	1	1712	ATTCACACCATT GCACTCCA	CCATCTGTTTAT CTTCCCATCA	TD 70-50	2	[29]
DYS526a	**$(CCTT)_{10-17}$**	2.72×10^{-3}	9.52×10^{-4} – 5.97×10^{-3}	2/2	4	1716	TCTGGTGAACTG ATCCAAACC	GGGTTACTTCGC CAGAAGGT	TD 65-50	51	[29]
DYS526b	$(CCCT)_3N_{20}$**$(CTTT)_{11-17}$** **$(CCTT)_{6-10}$**N_{113}**$(CCTT)_{10-17}$**	1.25×10^{-2}	7.88×10^{-3} – 1.87×10^{-2}	9/11	20	1651	TCTGGTGAACTG ATCCAAACC	GGGTTACTTCGC CAGAAGGT	TD 65-50	51	[29]
DYS530	**$(AAAC)_{8-11}$**	3.94×10^{-4}	1.45×10^{-5} – 2.10×10^{-3}	0/0	0	1760	CAGGGTCAAAA TCACCTTCC	CTGCGGGACAAT GAAACAC	TD 70-50	15	[29]
DYS531	**$(AAAT)_{9-13}$**	1.00×10^{-3}	1.45×10^{-4} – 3.50×10^{-3}	0/1	1	1682	GACCCACTGGC ATTCAAATC	TGCTCCCTTTCT TTGTAGACG	TD 70-50	3	[29]
DYS532	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3$ $(TTCC)_1$**$(TTCT)_{6-17}$**N_{17} $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3$ $N_6(TTCT)_3$	3.24×10^{-3}	1.13×10^{-3} – 7.10×10^{-3}	3/1	4	1441	TTGGTTTTATGC CTTTCACT	TAGGTGACAGA GCAGGATTC	TD 70-50	39	[29]

DYS533	**(TATC)$_{9-14}$**	5.01 x10^{-3}	2.39 x10^{-3}–9.11x10^{-3}	4/4	8	1730	CATCTAACATCTTTGTCATCTACC	TGATCAGTTCTTAACTCAACCA	TD 70-50	5	[29]
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{9-20}$**N$_9$(CTTT)$_3$	6.51 x10^{-3}	3.44 x10^{-3}–1.10x10^{-2}	9/2	11	1794	CATCTACCCAACATCCATCTA	GACAAAGATGTTAGATGAATAGACA	TD 60-50	18	[29]
DYS536	**(TCCT)$_{7-19}$**N$_8$(TTCT)$_4$	1.15 x10^{-3}	1.66 x10^{-4}–3.83x10^{-3}	1/0	1	1453	TTGCTTTTCTGCTTCCCTTC	ATCGCATTCCCCTCTCCTAC	52	53	[29]
DYS537	**(TCTA)$_{8-13}$**	2.38 x10^{-3}	7.12 x10^{-4}–5.70x10^{-3}	2/1	3	1539	GGTCTCCAATTCCATCCAGA	TGGAACATGCCCATTAATCA	TD 70-50	3	[29]
DYS538	**(GATA)$_{9-13}$**	3.94 x10^{-4}	1.47 x10^{-5}–2.10x10^{-3}	0/0	0	1765	CCCCTGAATCACCAGAGTTC	AACCAGCCCAAATACCCATC	TD 70-50	31	[29]
DYS539	**(TAGA)$_{8-14}$**	1.00 x10^{-3}	1.46 x10^{-4}–3.32x10^{-3}	0/1	1	1676	GTTGAAGCCCTCAATCTGGT	GGTGCAGATCTCCCAAATTC	TD 60-50	19	[29]
DYS540	**(TTAT)$_{9-14}$**	3.30 x10^{-3}	1.28 x10^{-3}–6.79x10^{-3}	2/3	5	1718	GACCGTGTACTCTGGCCAAT	CAGGAGGCTAGCTCAGGAGA	TD 70-50	7	[29]
DYS541	**(TATC)$_{10-15}$**(TTC)$_1$(TATC)$_3$	3.92 x10^{-3}	1.65 x10^{-3}–7.68x10^{-3}	2/4	6	1700	TTCTATCTGTTCATCCATCTAGG	ACCTTTAAGAAGCCTTCACC	TD 60-50	20	[29]
DYS543	(AGAT)$_3$**(GATA)$_{7.2-16}$**N$_{42}$ **(ATGT)$_{3-4}$ (ATGG)$_{2-3}$**N$_{35}$ (GAAA)$_3$	7.10 x10^{-3}	3.77 x10^{-3}–3.53x10^{-3}	4/7	11	1645	CAAGGGCCAATTATGTATGT	TGATCTTCCTGGTCACTTTT	TD 60-50	23	[29]
DYS544	(TAGA)$_3$N$_{15}$(TAGA)$_3$(TGGA)$_1$ **(TAGA)$_{6-12}$**	3.96 x10^{-4}	1.44 x10^{-5}–1.20x10^{-2}	0/0	0	1748	CTGGGCAACAGAGCAAGATT	AATGCTGGCCAAAACAAAGT	TD 70-50	32	[29]
DYS545	**(TGTT)$_{8-11}$**	3.90 x10^{-4}	1.39 x10^{-5}–2.09x10^{-3}	0/0	0	1779	GAGGGGAGTGTAGAAAGAATGC	GATCCAAGATGGTGCCATTG	TD 70-50	30	[29]
DYS546	(TTCC)$_3$N$_{23}$(TTCT)$_3$N$_{33}$(TTCC)$_3$ N$_{16}$**(TTCT)$_{9-19}$**	4.35 x10^{-3}	1.85 x10^{-3}–8.56x10^{-3}	2/4	6	1531	CCTGAGCTATTTTCCCTTTGC	TGCAGTACATCCTGGGGAAT	TD 70-50	35	[29]
DYS547	**(CCTT)$_{9-13}$T(CTTC)$_{4-5}$**N$_{56}$ **(TTTC)$_{10-22}$** N$_{10}$(CCTT)$_4$(TCTC)$_1$ **(TTTC)$_{9-16}$**N$_{14}$ (TTTC)$_3$	2.36 x10^{-2}	1.70 x10^{-2}–3.18x10^{-2}	22/17	39	1679	TCCATGTTACTGCAAAATACAC	TGACAGAGCATAAACGTGTC	TD 60-50	17	[29]
DYS549	**(GATA)$_{9-15}$**	4.55 x10^{-3}	2.05 x10^{-3}–8.58x10^{-3}	1/6	7	1684	AACCAAATTCAGGGATGTACTGA	GTCCCCTTTTCCATTTGTGA	TD 70-50	15	[29]
DYS550	(AAGG)$_4$N$_{16}$(AAGG)$_4$(AAAG)$_1$ **(AAGG)$_{6-11}$**	3.87 x10^{-4}	1.41 x10^{-5}–2.06x10^{-3}	0/0	0	1794	GCCTGGGTAACAGGAGTGAA	AGCTGAAAACTGTGCTGCTG	TD 70-50	34	[29]
DYS551	(AGAT)$_{10-16}$N$_8$(AGAC)$_3$ (AGGT)$_1$(AGAT)$_4$	3.26 x10^{-3}	1.26 x10^{-3}–6.72x10^{-3}	1/4	5	1737	CCAGCCTGGGTGACAAAGTA	AAAGTTCCTCCCAGTTGCAC	TD 70-50	38	[29]
DYS552	(TCTA)$_3$(TCTG)$_1$**(TCTA)$_{7-12}$**N$_{40}$ **(TCTA)$_{11-16}$**	2.69 x10^{-3}	9.21 x10^{-4}–5.87x10^{-3}	3/1	4	1742	CCATAGTGCCGAGGTCAAGT	AACACCTGATGCCTGGTTG	TD 70-50	38	[29]
DYS554	**(TAAA)$_{8-11}$**	9.41 x10^{-4}	1.36 x10^{-4}–3.15x10^{-3}	1/0	1	1777	CTGGGCCACAGAGTGAGAC	GGGCCAGTCTTTGCAATATC	TD 70-50	13	[29]
DYS556	**(AAAT)$_{8-12}$**	1.59 x10^{-3}	3.70 x10^{-4}–4.30x10^{-3}	1/1	2	1683	TGCTGTCACATCACCAATGA	TTTGGTTGCTGAAGCATTGA	TD 70-50	14	[29]
DYS557	(TTTC)$_4$(TTCTC)$_1$(TTTC)$_4$ (TTC)$_1$**(TTTC)$_{12-21}$**	3.80 x10^{-3}	1.60 x10^{-3}–7.45x10^{-3}	3/3	6	1758	TTTTCTGTGCCAAGCCTACA	TCTAATGCACCTTGAGGGATG	TD 60-50	21	[29]
DYS558	(TTTG)$_3$**(TTTA)$_{5-10}$**	3.98 x10^{-4}	1.42 x10^{-5}–2.13x10^{-3}	0/0	0	1741	GGTGGTCAGAAAATCCCTCA	GCAGGCCAATATTCACCATT	TD 70-50	26	[29]
DYS559	**(TAAA)$_{7-9}$**	9.63 x10^{-4}	1.40 x10^{-4}–3.19x10^{-3}	1/0	1	1750	AGCCAAGGTCATACCACTGC	TCGGTGAAGGCACCAATAAT	TD 70-50	25	[29]

DYS561	**(GATA)$_{9-13}$**(GACA)$_4$	9.41 x10^{-4}	1.36 x10^{-4}–3.11x10^{-3}	0/1	1	1783	GCCTGATGCCATCTGAAAAT	TGATCCCAACAACTGCACTC	TD 60-50	17	[29]
DYS565	**(ATAA)$_{9-14}$**	2.09 x10^{-3}	6.20 x10^{-4}–4.95x10^{-3}	1/2	3	1757	AAACCCAGGAAGCAGTGTTG	CCTGGCTCAGCACATGAATA	TD 70-50	11	[29]
DYS567	**(ATAA)$_{7-13}$**	4.08 x10^{-4}	1.48 x10^{-5}–2.14x10^{-3}	0/0	0	1713	GGAAGCTGAGGAAGGAGGAG	TTATGACCGGGATCAAGTGC	TD 70-50	10	[29]
DYS568	**(AAAT)$_{9-13}$**	1.08 x10^{-3}	1.56 x10^{-4}–3.60x10^{-3}	0/1	1	1547	GTGGCAGACAAAACCCAGTT	TTGAAAAGGGATGGGACTCA	TD 70-50	3	[29]
DYS569	**(ATTT)$_{8.2-13}$**	1.58 x10^{-3}	3.66 x10^{-4}–4.24x10^{-3}	0/2	2	1696	TCCATGGGATATGATGAGCA	GGCAGCCTGTAGGACAGAGA	TD 70-50	12	[29]
DYS570	**(TTTC)$_{14-24}$**	1.24 x10^{-2}	7.52 x10^{-3}–1.91x10^{-2}	8/9	17	1426	GAACTGTCTACAATGGCTCACG	TCAGCATAGTCAAGAAACCAGACA	TD 70-50	1	[29]
DYS571	(TTTTC)$_4$N$_7$**(TTTA)$_{9-12}$**	4.13 x10^{-4}	1.51 x10^{-5}–2.20x10^{-3}	0/0	0	1682	AGCCTTCAGCGACTGCTTTA	AGCTGAGATCATCCCATTGC	TD 70-50	47	[29]
DYS572	**(AAAT)$_{8-13}$**	2.07 x10^{-3}	6.17 x10^{-4}–4.96x10^{-3}	0/3	3	1770	CTAAGGACGCCTCCCATACA	CTCATTCCCTATGGTTTGCAC	TD 70-50	9	[29]
DYS573	**(TTTA)$_{8-13}$**	4.10 x10^{-4}	1.51 x10^{-5}–2.17x10^{-3}	0/0	0	1698	GGGGGAGAAAAAGTTTGGTG	AAAAATGGGGAGGTGGAAAT	TD 70-50	14	[29]
DYS574	**(TTAT)$_{8-12}$**	9.77 x10^{-4}	1.43 x10^{-4}–3.25x10^{-3}	0/1	1	1721	GGTGGGGCTTCCATATTTTT	AATGTAGACGACGGGTTGATG	TD 60-50	43	[29]
DYS575	**(AAAT)$_{8-11}$**	3.91 x10^{-4}	1.47 x10^{-5}–2.09x10^{-3}	0/0	0	1764	GGTGGTGGACATCCGTAATC	AGTAATGGGATGCTGGGTCA	TD 70-50	11	[29]
DYS576	**(AAAG)$_{13-22}$**	1.43 x10^{-2}	9.41 x10^{-3}–2.07x10^{-2}	12/12	24	1727	TTGGGCTGAGGAGTTCAATC	GGCAGTCTCATTTCCTGGAG	TD 70-50	12	[29]
DYS577	**(ATTC)$_{6-10}$**	4.11 x10^{-4}	1.51 x10^{-5}–2.19x10^{-3}	0/0	0	1691	TCAATGCATGTTTTTCTACGTG	GGAGGATGGTTTGAACCTGA	TD 60-50	40	[29]
DYS578	**(AAAT)$_{7-10}$**	9.95 x10^{-4}	1.43 x10^{-4}–3.30x10^{-3}	1/0	1	1686	GAGGCGGAACTTTCAGTGAG	GCTTCAACAACCCTGGACAT	TD 70-50	4	[29]
DYS579	**(TATT)$_{7-10}$**	3.94 x10^{-4}	1.40 x10^{-5}–2.10x10^{-3}	0/0	0	1755	GCCAGCAGTAGACCCAGACT	AGGCAGAGGTTGCAGTGAGT	TD 70-50	2	[29]
DYS580	**(AATA)$_{8-10}$**	4.05 x10^{-4}	1.47 x10^{-5}–2.13x10^{-3}	0/0	0	1725	GCAGTGAGCCGAGATCAGG	GGAGCAAACACTGCAATTTCC	TD 70-50	4	[29]
DYS581	**(TAGG)$_{7-9}$**	3.84 x10^{-4}	1.43 x10^{-5}–2.04x10^{-3}	0/0	0	1807	GTAGGGTCTTGAACAGCATACG	CGAGCCAAGCTGCTGTTAT	TD 70-50	36	[29]
DYS583	**(AAAC)$_{7-9}$**	3.99 x10^{-4}	1.44 x10^{-5}–2.12x10^{-3}	0/0	0	1730	GCAGGAAAATTGCTTGAACC	CCTCATCCAATAGCTCTTCCT	TD 70-50	2	[29]
DYS584	**(CAAT)$_{7-8}$**	3.90 x10^{-4}	1.43 x10^{-5}–2.10x10^{-3}	0/0	0	1777	TGCAGAATGTATGGTCTTTTTGA	CTGCCAGTCTATTGCCCTTC	TD 60-50	45	[29]
DYS585	**(TTATG)$_{8-12}$**	2.12 x10^{-3}	6.33 x10^{-4}–5.06x10^{-3}	2/1	3	1734	TGGAAGTATTCCACTCACTTGCT	CTCAAGTGGGGAAGTCAAGG	TD 60-50	42	[29]
DYS587	**(CAATA)$_{8-16}$** [(CAGTA)$_1$(CAATA)$_1$]$_3$	2.62 x10^{-3}	9.16 x10^{-4}–5.75x10^{-3}	2/2	4	1782	CCTAAAGCGAAGAGACCATGA	TGAAGGCCAAAGAGTGAAAGA	TD 60-50	18	[29]
DYS588	**(GCATT)$_{9-16}$**	3.92 x10^{-4}	1.47 x10^{-5}–2.10x10^{-3}	0/0	0	1747	GAATGCAGAACCCTCAAGGA	AGCCTGGGTGACAGAAACAC	TD 60-50	42	[29]
DYS590	**(TTTTG)$_{5-9}$**	3.91 x10^{-4}	1.45 x10^{-5}–2.06x10^{-3}	0/0	0	1780	GGGAACATAGTCGGGCTGTA	GGGTGACAGAGCAAGAATCC	TD 70-50	5	[29]

DYS593	$(AAAAC)_4$**$(AAAAT)_{7-10}$**	1.51×10^{-3}	3.47×10^{-4} – 4.06×10^{-3}	1/1	2	1775	CTTGAACCCAGG AAGCAGAC	TTATGCCCAAGT GACACTGC	TD 70-50	29	[29]
DYS594	**$(AAATA)_{8-13}$**	1.03×10^{-3}	1.46×10^{-4} – 3.41×10^{-3}	1/0	1	1635	GATGTGCCTAAT GCCACAGA	CCCTGGTGTTAA TCGTGTCC	TD 70-50	5	[29]
DYS595	**$(ATTTA)_{6-9}$**	3.96×10^{-4}	1.46×10^{-5} – 2.10×10^{-3}	0/0	0	1750	TGTTTTCGGTTC CTCTGTCC	AGGGGAACAAC ACACACTGG	TD 70-50	28	[29]
DYS596	$(GGA)_5(GTA)_1(GGA)_3(GAA)_3$ **$[(GGA)_1(GAA)_1]_{8-10}$**	4.24×10^{-4}	1.52×10^{-5} – 2.28×10^{-3}	0/0	0	1630	ATAACCGTGCCC TTTACTGC	TTTTGACAAGCC CAAAGTTCT	TD 60-50	44	[29]
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9$ $(TTC)_5(CTC)_1(TTC)_3N_{15}(TTC)_4$ $(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}$ $(TTC)_3T(TTC)_4N_7(TTC)_3N_9$ $(TTC)_4(TCC)_1$ **$(TTC)_{7-21}$**N_{23} $(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	8.89×10^{-3}	4.86×10^{-3} – 1.47×10^{-2}	3/9	12	1426	TACAGGTGTGCA CCATGAGG	CTTGGCAACATA GCAGATCC	TD 70-50	35	[29]
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1$ **$(TCT)_{19-31}$**	1.45×10^{-2}	9.61×10^{-3} – 2.09×10^{-2}	11/14	25	1767	CCCCCATGCCAG TAAGAATA	TGAGGGAAGGC AAAAGAAAA	TD 60-50	42	[29]
DYS613	$(ATG)_8(ATA)_1$**$(ATG)_{8-9}$**	4.35×10^{-4}	1.60×10^{-5} – 2.32×10^{-3}	0/0	0	1588	ATAGAAGGCAA ATTCTTTATCAA	AAAGTTAATGAC GCCTTGTC	TD 60-50	23	[29]
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4$ $(CTT)_4(CCT)_1(CTT)_3N_{18}(CCT)_3$ $(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1$ **$(CTT)_{12-22}$**$N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3$ $[(CTC)_1(TTT)_1](CTT)_5$	4.32×10^{-3}	1.94×10^{-3} – 8.14×10^{-3}	2/5	7	1776	GTGGCGATGTTG TGAGTGTT	GCCACCAAAAG GTTTTCAGA	TD 70-50	33	[29]
DYS615	**$(TTG)_{7-8}$**	3.91×10^{-4}	1.43×10^{-5} – 2.09×10^{-3}	0/0	0	1766	GGTCGAAGAAG GTGTCACAGA	TGATTCTGCTAA TTCCCATGC	TD 70-50	25	[29]
DYS616	**$(TAT)_{8-16}$**$(CAT)_1(TAT)_3$	1.72×10^{-3}	4.03×10^{-4} – 4.64×10^{-3}	1/1	2	1564	GGCAAACAGAT AGCAATTTACA	TTGTTCTGCCCA GCAGTAT	TD 70-50	35	[29]
DYS617	**$(TTA)_{11-15}$**	4.13×10^{-4}	1.53×10^{-5} – 2.21×10^{-3}	0/0	0	1684	AGCATGATGCCT TCAGCTTT	GGATTGGGGAG TGATAGCAT	TD 70-50	5	[29]
DYS618	**$(TAT)_{8-14}$**	3.95×10^{-4}	1.46×10^{-5} – 2.09×10^{-3}	0/0	0	1766	CCCATACCCTTG GTGTTGTC	GAGGGCTATGG GAGGGATAG	TD 70-50	13	[29]
DYS619	**$(AAT)_{6-10}$**	4.69×10^{-4}	1.70×10^{-5} – 2.50×10^{-3}	0/0	0	1479	GGCGACAGAGC GAGACTCTA	GGCATGTGAGTT GAGGAACA	TD 70-50	16	[29]
DYS620	**$(ATA)_{8-9}$**	4.11×10^{-4}	1.47×10^{-5} – 2.22×10^{-3}	0/0	0	1678	TGACGAGTTAAT GGGTGCAG	TGAGTTTGCTCC TCTAGCTTTC	TD 60-50	40	[29]
DYS621	**$(TTA)_{7-9}$**	4.44×10^{-4}	1.70×10^{-5} – 2.38×10^{-3}	0/0	0	1543	GCCCAAATTAA AAGGCACAA	TGACGAGTTAGT GGGTGCAG	TD 70-50	35	[29]
DYS622	$(GAAA)_6(AGAAG)_1$**$(GAAA)_{8-16}$**	3.40×10^{-3}	1.32×10^{-3} – 7.01×10^{-3}	2/3	5	1663	TCCAGCCTCGGT GATAAGAG	GGCTGAAGTGG GTTGTGTTA	TD 60-50	44	[29]
DYS624	**$(GGAT)_{8-10}$** **$(G/A$**$GAT)_1N_{35}(GGAT)_3$	4.06×10^{-4}	1.55×10^{-5} – 2.18×10^{-3}	0/0	0	1699	GCATCTCAAATC CTTTGTGGA	TCCACCTGCTTT TCTCTTCA	TD 60-50	43	[29]
DYS625	$(CTTT)_4(TTCT)_1(CTTT)_3(TTT)_1$ $(CTTT)_4(TT)_1(CTTT)_3N_{47}$ **$(CTTT)_{3-5}$**$(CT)_1(CTTT)_4(CCTT)_1$ $CTTT)_3N_{10}(CTTT)_3$	9.58×10^{-4}	1.40×10^{-4} – 3.18×10^{-3}	0/1	1	1746	TCATCACACATG GCCTAATTG	GGCAAGTCACAT GCATTACAA	TD 60-50	22	[29]
DYS626	**$(GAAA)_{14-23}$**$N_{24}(GAAA)_3N_6$	1.22×10^{-2}	7.70×10^{-3} –	13/7	20	1689	GCAAGACCCCA	AAGAAGAATTTT	TD	23	[29]

	$(GAAA)_5(AAA)_1$**$(GAAA)_{2-3}$** $(GAAG)_1(GAAA)_3$		$1.82x10^{-2}$				TAGCAAAAG	GGGACATGTTT	60-50		
DYS627	$(AGAA)_3N_{16}(AGAG)_3$ **$(AAAG)_{12-24}$**N_{81} $(AAGG)_3$	$1.23\ x10^{-2}$	$7.80\ x10^{-3}$–$1.81x10^{-2}$	12/9	21	1766	CTAGGTGACAG CGCAGGATT	GGATAATGAGC AAATGGCAAG	TD 60-50	21	[29]
DYS629	**$(TATC)_{5-12}$**	$9.91\ x10^{-4}$	$1.41\ x10^{-4}$–$3.31x10^{-3}$	1/0	1	1689	GGGATTATTACA ATTCAAGGTC	TATGGGTAAATG GCAAAAGT	TD 60-50	19	[29]
DYS630	$(AAAG)_4(AGAG)_3N_{18}$ **$(AAAG)_{12-21}$**	$4.86\ x10^{-3}$	$2.31\ x10^{-3}$–$8.85x10^{-3}$	5/3	8	1784	GCCTTTGGACAG AGCAAGAC	AGCCATGGAAA GCTGTGAGT	TD 70-50	25	[29]
DYS631	$(AATA)_4(CATA)_1$**$(AATA)_{7-11}$**	$9.77\ x10^{-4}$	$1.40\ x10^{-4}$–$3.25x10^{-3}$	0/1	1	1721	CACTCCAGCCTC GGAGATAG	GCGCTCTGTGGA CATTATCA	TD 60-50	43	[29]
DYS632	**$(CATT)_{8-10}$**	$3.97\ x10^{-4}$	$1.47\ x10^{-5}$–$2.13x10^{-3}$	0/0	0	1745	GGCCGTTGCAA AATAAACTG	TCTGGGCAACAG AAGGAGAC	TD 70-50	24	[29]
DYS633	$(AAAT)_5N_{16}$**$(AAAT)_{7-9}$**	$3.81\ x10^{-4}$	$1.38\ x10^{-5}$–$2.02x10^{-3}$	0/0	0	1814	GGCAACAAGAG CAAAACTCC	CCACCAGGGAA GTGTCTTTC	TD 60-50	46	[29]
DYS634	$(GGAA)_6N_{10}$**$(AAGG)_{7-10}$** $N_{12}(AGGGG)_3$	$4.20\ x10^{-4}$	$1.51\ x10^{-5}$–$2.25x10^{-3}$	0/0	0	1646	TCAGAAGCATG CTAGAACCCTA	TTGCTCCTTACA GAAGAGGTGA	TD 60-50	19	[29]
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2$ $(TGTA)_2(TCTA)_2$ **$(TATG)_{0-2}$** **$(TCTA)_{4-17}$**	$3.85\ x10^{-3}$	$1.63\ x10^{-3}$–$7.55x10^{-3}$	1/5	6	1732	Yfiler	Yfiler	Yfiler	Yfiler	[29]
DYS637	$(AAAT)_4$**$(ACAT)_{8-14}$**	$1.04\ x10^{-3}$	$1.53\ x10^{-4}$–$3.42x10^{-3}$	0/1	1	1623	AAGCCAGTCAA CCAAACACA	TGCTGGGGTTGA AGGTAAAA	TD 60-50	41	[29]
DYS638	**$(TTTA)_{8-13}$**	$1.04\ x10^{-3}$	$1.47\ x10^{-4}$–$3.45x10^{-3}$	1/0	1	1617	ACAATTTCCCTT GGGGCTAC	CATGGTGGTAGG CACCTGTA	TD 70-50	6	[29]
DYS640	**$(AAAT)_{9-13}$**	$3.98\ x10^{-4}$	$1.41\ x10^{-5}$–$2.16x10^{-3}$	0/0	0	1716	TGGGAAAAACC ATGAGATCC	TAGGGTCAAGCC CGTTCATA	TD 70-50	15	[29]
DYS641	**$(TAAA)_{8-12}$**	$3.90\ x10^{-4}$	$1.41\ x10^{-5}$–$2.09x10^{-3}$	0/0	0	1768	CTTGAGCCCAGG AAGCATAG	CCACACGATGCA ATTTTGTC	TD 70-50	6	[29]
DYS642	**$(TAAA)_{6-10}$**	$3.91\ x10^{-4}$	$1.45\ x10^{-5}$–$2.07x10^{-3}$	0/0	0	1785	CATTGTGCACGT GTACCCTAA	AAAGGGTTGTGC TGCATGAT	TD 70-50	33	[29]
DYS643	**$(CTTTT)_{6-15}$**	$1.50\ x10^{-3}$	$3.49\ x10^{-4}$–$4.05x10^{-3}$	2/0	2	1773	AAGCCATGCCTG GTTAAACT	TGTAACCAAACA CCACCCATT	TD 70-50	14	[29]
DYS644	**$(TTTTA)_{10-11}$****$(TTTA)_{0-1}$** **$(TTTTA)_{0-13}$**	$3.22\ x10^{-3}$	$1.25\ x10^{-3}$–$6.62x10^{-3}$	3/2	5	1761	TGACTTCGGGGT AGTTCCAG	CCTGGGCAAAA GAGTGAGAC	TD 70-50	8	[29]
DYS645	**$(TGTTT)_{7-9}$**	$4.07\ x10^{-4}$	$1.49\ x10^{-5}$–$2.14x10^{-3}$	0/0	0	1698	GGTTACGGGTG GCAATCATA	ACTGCCAGACTC ACACATGG	TD 60-50	40	[29]
Y-GATA-A10	**$(ATCT)_{11-16}$**	$3.32\ x10^{-3}$	$1.25\ x10^{-3}$–$6.80x10^{-3}$	3/2	5	1713	CCTGCCATCTCT ATTTATCTTGCA TATA	ATAAATGGAGA TAGTGGGTGGAT T	TD 60-50	41	[29]
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3$**$(TAGA)_{8-15}$** $N_{22}(TAGA)_4$	$3.22\ x10^{-3}$	$1.28\ x10^{-3}$–$6.62x10^{-3}$	1/4	5	1755	Yfiler	Yfiler	Yfiler	Yfiler	[29]

Markers with median mutation rates above 10^{-2} (the RM Y-STR set) are highlighted in red. Additionally included are PCR primers, PCR annealing temperature and locus assignment to the 54 multiplexes used for genotyping.

Notes: The repeat nomenclature used is in accordance with rules defined by Kayser *et al.* (2004). Separation of repeat blocks by "N" represents the break point between the separate loci present within complex markers (as described in Methods and Materials). Repeat arrays observed to be variable through sequence analysis are highlighted in bold. The allele ranges given are those seen with the 1966 father-son pairs of European origin.
The "Total number of Meioses" reported is the number of meioses for the marker, and is not the number of allele transmissions for multicopy markers.
The mutations reported for the Yfiler loci have been previously reported in Reference 28.

PCR Protocols:

TD60-50			**TD65-50**			**TD65-55**			**TD70-50**		
95C	10 min		95C	15 min		95C	10 min		95C	15 min	
94C	30s		94C	30s		94C	30s		94C	30s	
60-1C	30s	X10	65-1C	45s	X20	65-1C	30s	X10	70-1C	45s	X20
72C	45s		72C	1 min		72C	45s		72C	1 min	
94C	30s		94C	30s		94C	30s		94C	30s	
50C	30s	X25	50C	30s	X15	55C	30s	X25	50C	30s	X15
72C	45s		72C	45s		72C	45s		72C	45s	
60C	45min		60C	45min		60C	45min		60C	45min	
15C	forever		15C	forever		15C	forever		15C	forever	

PCR Protocols for Extra Genotyping of RM Y-STRs:

RM 1 (DYF387S1, DYF399S1, DYS570, DYS576)		**RM 2 (DYS518, DYS526a/b. DYS626, DYS627)**		**RM 3 (DYF403S1a/b, DYF404S1, DYS449, DYS547, DYS612)**	
PCR Buffer	1x	PCR Buffer	1x	PCR Buffer	1x
$MgCl_2$	2.27mM	$MgCl_2$	1.5mM	$MgCl_2$	2.0mM
dNTPs	220µM	dNTPs	250µM	dNTPs	250µM
DYF387S1 Primer	0.09µM	DYS518 Primer	0.5µM	DYF403S1a/b Primer	0.6µM
DYF399S1 Primer	0.36µM	DYS526a/b Primer	0.35µM	DYSF404S1 Primer	0.1µM
DYS570 Primer	0.09µM	DYS626 Primer	0.2µM	DYS449 Primer	0.1µM
DYS576 Primer	0.09µM	DYS627Primer	0.15µM	DYS547 Primer	0.6µM
				DYS612 Primer	0.2µM
Taq	0.25U	Taq	0.35U	Taq	0.5U
DNA	2ng	DNA	2ng	DNA	2ng
PCR Protocol	TD70-50	PCR Protocol	TD65-55	PCR Protocol	TD65-55

Table S2. Details of the 924 Y-STR Mutations Observed among DNA-Confirmed Father-Son Pairs (See Footnote for Explanation)

Locus	Father Allele	Son Allele	Father's Age	Father Reference #
DYF382S1	**(GGAT)$_{13}$**(AGAT)$_1$(GGAT)$_3$N$_8$(GGAC)$_3$	**(GGAT)$_{14}$**(AGAT)$_1$(GGAT)$_3$N$_8$(GGAC)$_3$	59	1953
DYF386S1	**(AAT)$_{12}$**	**(AAT)$_{13}$**	27	20
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{13}$**	32	84
DYF386S1	**(AAT)$_{13}$**	**(AAT)$_{12}$**	38	94
DYF386S1	**(AAT)$_{15}$**	**(AAT)$_{13}$**	20	208
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{13}$**	25	317
DYF386S1	**(AAT)$_{11}$**	**(AAT)$_{12}$**	19	641
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{13}$**	27	1195
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{15}$**	40	1558
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{13}$**	42	1644
DYF386S1	**(AAT)$_{14}$**	**(AAT)$_{13}$**	52	1864
DYF387S1	21	24	21	46
DYF387S1	23	22	48	74
DYF387S1	23	24	36	150
DYF387S1	20	21	29	155
DYF387S1	24	23	24	259
DYF387S1	22	21	28	677
DYF387S1	24	23	40	738
DYF387S1	25	24	22	817
DYF387S1	25	26	36	830
DYF387S1	25	26	18	852
DYF387S1	23	24	28	880
DYF387S1	24	23	19	916
DYF387S1	21	22	33	955
DYF387S1	22	23	43	1159
DYF387S1	23	24	Unknown	1202

DYF387S1	24	23	30	1274
DYF387S1	23	22	37	1319
DYF387S1	23	21	Unknown	1328
DYF387S1	24	25	31	1390
DYF387S1	23	24	39	1451
DYF387S1	22	21	24	1469
DYF387S1	22	23	38	1494
DYF387S1	21	22	39	1552
DYF387S1	21	22	20	1592
DYF387S1	23	22	42	1644
DYF387S1	23	22	23	1710
DYF387S1	23	22	18	1750
DYF387S1	23	25	54	1911
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	37	36
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{14}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	34	372
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	28	674
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	21	769
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{11}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	49	945
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{11}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	28	1035
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	30	1177
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	56	1272
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	Unknown	1352
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{13}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	31	1518
DYF388S1	$(CTTC)_6\mathbf{(CTTT)_{14}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	$(CTTC)_6\mathbf{(CTTT)_{12}}N_{18}(CTTC)_3(TTTC)_1(CTTC)_3N_8(CTTC)_3N_{32}(CTTC)_3$	28	1734

DYF390S1	**$(TTTA)_{11}$**	**$(TTTA)_{10}$**	21	1667
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{26}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{25}$**$(CAG)_1$	32	19
DYF393S1	$(AAG)_{4(}AA)_1$**$(AAG)_{28}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{29}$**$(CAG)_1$	32	84
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{19}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{20}$**$(CAG)_1$	34	183
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{26}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{25}$**$(CAG)_1$	32	213
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{25}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{24}$**$(CAG)_1$	26	303
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{22}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{23}$**$(CAG)_1$	31	927
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{26}$**$(CAG)_2$	$(AAG)_4(AA)_1$**$(AAG)_{27}$**$(CAG)_2$	23	941
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{22}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{23}$**$(CAG)_1$	64	951
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{27}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{26}$**$(CAG)_1$	21	1207
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{22}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{24}$**$(CAG)_1$	17	1406
DYF393S1	$(AAG)_{4(}AA)_1$**$(AAG)_{28}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{29}$**$(CAG)_1$	19	1530
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{27}$**$(CAG)_1$	$(AAG)_{4(}AA)_1$**$(AAG)_{28}$**$(CAG)_1$	26	1551
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{23}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{24}$**$(CAG)_1$	36	1672
DYF393S1	$(AAG)_4(AA)_1$**$(AAG)_{25}$**$(CAG)_1$	$(AAG)_4(AA)_1$**$(AAG)_{24}$**$(CAG)_1$	55	1928
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	22	14
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	46	21
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	36	22
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	30	25
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	32	32
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	16	55
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	32	59
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	30	62
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	46	72
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	46	72
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	25	79
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	25	80

DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	28	91
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	32	95
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	30	99
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	27	119
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	48	122
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	33	126
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	36	136
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	28	153
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	33	189
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	39	200
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	22	203
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	22	229
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	50	270
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	28	287
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	32	290
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	21	299
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	27	302
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	38	336
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	50	356
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{22}$**	28	367
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	34	372
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{22}$**	28	373
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	35	389
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	32	401
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	53	453
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	34	459

DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	26	480
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	28	484
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	26	488
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	39	492
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	27	494
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	35	500
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	19	546
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	34	559
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{22}$**	30	586
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	29	603
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	56	608
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	32	614
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	43	624
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	25	630
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	30	640
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	43	657
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	25	666
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	23	675
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	18	680
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	23	687
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	20	706
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	33	718
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	21	720
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{14}$**	22	747
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	28	772
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	28	805

DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	22	817
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	20	824
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	20	827
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	25	877
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	31	881
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	19	900
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	37	904
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{14}$**	34	911
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	19	916
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	24	926
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	22	986
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	36	989
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	35	1001
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	41	1008
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	41	1008
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	33	1046
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	33	1046
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	31	1072
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	22	1088
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	36	1091
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	23	1095
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	25	1104
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	43	1138
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	20	1154
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	36	1155
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	34	1158

DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	34	1158
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	43	1159
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{13}$**	$(GAAA)_3N_8$**$(GAAA)_{14}$**	21	1163
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	21	1207
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	Unknown	1263
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	Unknown	1265
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	Unknown	1268
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	39	1327
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	27	1397
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{14}$**	$(GAAA)_3N_8$**$(GAAA)_{13}$**	42	1407
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	42	1411
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	40	1443
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	17	1446
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	24	1455
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	18	1456
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	24	1466
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	24	1466
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	39	1471
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{14}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	Unknown	1479
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	28	1554
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	37	1577
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	40	1606
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	25	1612
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	17	1620
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	Unknown	1650
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	24	1651

DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	24	1658
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{14}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	37	1663
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	32	1664
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	17	1665
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{14}$**	20	1670
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	34	1691
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	28	1696
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	23	1722
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{17}$**	30	1733
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	26	1760
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	29	1773
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{20}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	31	1798
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{15}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	51	1813
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	19	1841
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_7$**$(GAAA)_{21}$**	55	1844
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{22}$**	$(GAAA)_3N_8$**$(GAAA)_{23}$**	59	1867
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	53	1869
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	73	1884
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{18}$**	$(GAAA)_3N_8$**$(GAAA)_{19}$**	52	1891
DYF399S1	$(GAAA)_3N_7$**$(GAAA)_{21}$**	$(GAAA)_3N_8$**$(GAAA)_{20}$**	52	1891
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{16}$**	$(GAAA)_3N_8$**$(GAAA)_{15}$**	55	1909
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{19}$**	$(GAAA)_3N_7$**$(GAAA)_{18}$**	60	1913
DYF399S1	$(GAAA)_3N_8$**$(GAAA)_{17}$**	$(GAAA)_3N_8$**$(GAAA)_{16}$**	50	1941
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{16}$**$G(AAGG)_6$	37	36
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{17}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	34	372
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$	28	674

	$(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	$(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{16}$**$G(AAGG)_6$		
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{16}$**$G(AAGG)_6$	21	769
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1$ $(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{14}$**$G(AAGG)_6$	Unknown	1241
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1$ $(AAGG)_3N_{13}$**$(AAAG)_{16}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	56	1272
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1$ $(AAGG)_3N_{13}$**$(AAAG)_{16}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	31	1518
DYF401S1	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1$ $(AAGG)_3N_{13}$**$(AAAG)_{17}$**$G(AAGG)_6$	$(AAGG)_3(AAGC)_1(AAGG)_3N_{39}(AAGG)_3N_8(AAGG)_3$ $(AAAG)_1(AAGG)_3N_{13}$**$(AAAG)_{15}$**$G(AAGG)_6$	28	1734
DYF403S1a	342	338	20	73
DYF403S1a	321	316	32	128
DYF403S1a	316	321	27	132
DYF403S1a	316,329,338	321,325,334	17	175
DYF403S1a	346	350	37	186
DYF403S1a	342	346	22	201
DYF403S1a	354	350	37	406
DYF403S1a	350	354	20	423
DYF403S1a	342	346	19	546
DYF403S1a	325	329	24	681
DYF403S1a	325	321	39	749
DYF403S1a	334	338	22	817
DYF403S1a	321	342	28	841
DYF403S1a	338	342	37	904
DYF403S1a	308	312	34	911
DYF403S1a	342	346	18	943
DYF403S1a	312	316	20	977
DYF403S1a	342	346	46	1033
DYF403S1a	321	316	21	1053
DYF403S1a	350	354	39	1071
DYF403S1a	342	346	27	1085

DYF403S1a	325	329	44	1110
DYF403S1a	342	338	22	1323
DYF403S1a	346	350	36	1336
DYF403S1a	312	316	Unknown	1353
DYF403S1a	354	350	45	1364
DYF403S1a	342	338	44	1378
DYF403S1a	342	338	42	1411
DYF403S1a	346	350	42	1441
DYF403S1a	338	342	24	1480
DYF403S1a	325	329	40	1531
DYF403S1a	346	342	28	1554
DYF403S1a	312	316	33	1561
DYF403S1a	321	316	25	1634
DYF403S1a	342	334	36	1643
DYF403S1a	329	334	24	1704
DYF403S1a	312	316	26	1725
DYF403S1a	312	316	40	1785
DYF403S1a	312	316	31	1798
DYF403S1a	329	334	43	1818
DYF403S1a	346	342	27	1840
DYF403S1a	346	350	43	1883
DYF403S1a	329	334	57	1896
DYF403S1a	334	321	64	1912
DYF403S1a	346	342	50	1941
DYF403S1a	325,346	329,339	56	1947
DYF403S1b	50	49	40	28
DYF403S1b	46.1	45.1	32	115
DYF403S1b	50	49	33	137
DYF403S1b	49	47	17	175
DYF403S1b	51	50	53	453

DYF403S1b	51	50	18	470
DYF403S1b	50	49	39	749
DYF403S1b	53	52	19	916
DYF403S1b	52	53	21	1090
DYF403S1b	50	49	Unknown	1288
DYF403S1b	52	51	25	1381
DYF403S1b	46.1	47.1	54	1447
DYF403S1b	49	50	Unknown	1479
DYF403S1b	48	49	23	1761
DYF403S1b	49	48	56	1947
DYF403S1b	46.1	47.1	54	1951
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	28	9
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{14}$**N$_{42}$(TTTC)$_3$	26	376
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	29	415
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	29	481
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	20	706
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	22	757
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	18	910
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	32	1007
DYF404S1	**(TTTC)$_{14}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	23	1012
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	27	1049
DYF404S1	**(TTTC)$_{18}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	31	1084
DYF404S1	**(TTTC)$_{14}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	38	1114
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	21	1396
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	23	1546
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{14}$**N$_{42}$(TTTC)$_3$	40	1578
DYF404S1	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{18}$**N$_{42}$(TTTC)$_3$	36	1655
DYF404S1	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	26	1657
DYF404S1	**(TTTC)$_{16}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	36	1687
DYF404S1	**(TTTC)$_{15}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{14}$**N$_{42}$(TTTC)$_3$	19	1739

DYF404S1	**(TTTC)$_{18}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	50	1881
DYF404S1	**(TTTC)$_{17}$**N$_{42}$(TTTC)$_3$	**(TTTC)$_{18}$**N$_{42}$(TTTC)$_3$	60	1913
DYF405S1	**(GGAA)$_{11}$**N$_{115}$(GGAA)$_3$(GAAA)$_1$(GGAA)$_3$	**(GGAA)$_{12}$**N$_{115}$(GGAA)$_3$(GAAA)$_1$(GGAA)$_3$	31	438
DYF405S1	**(GGAA)$_{14}$**N$_{115}$(GGAA)$_3$(GAAA)$_1$(GGAA)$_3$	**(GGAA)$_{13}$**N$_{115}$(GGAA)$_3$(GAAA)$_1$(GGAA)$_3$	34	629
DYF406S1	**(TATC)$_{12}$**	**(TATC)$_{11}$**	26	204
DYF406S1	**(TATC)$_{11}$**	**(TATC)$_{10}$**	47	347
DYF406S1	**(TATC)$_{12}$**	**(TATC)$_{13}$**	35	518
DYF406S1	**(TATC)$_{11}$**	**(TATC)$_{10}$**	33	1011
DYF406S1	**(TATC)$_{12}$**	**(TATC)$_{13}$**	41	1122
DYF406S1	**(TATC)$_{12}$**	**(TATC)$_{13}$**	Unknown	1263
DYF410S1	**(AAAT)$_9$**	**(AAAT)$_{10}$**	Unknown	1457
DYF410S1	**(AAAT)$_9$**	**(AAAT)$_{10}$**	21	1667
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{13}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{14}$**	46	21
DYS19	(TAGA)$_3$(TAGG)$_1$(**TAGA)$_{11}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{12}$**	43	472
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{14}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{13}$**	24	726
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{14}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{15}$**	31	927
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{12}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{13}$**	Unknown	1224
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{14}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{13}$**	29	1257
DYS19	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{14}$**	(TAGA)$_3$(TAGG)$_1$**(TAGA)$_{13}$**	24	1767
DYS385a	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$ **(AAGG)$_6$**(GAAA)$_{13}$	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$ **(AAGG)$_5$**(GAAA)$_{13}$	22	602
DYS385a	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{13}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{14}$**	30	1000
DYS385a	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{14}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{15}$**	60	1695
DYS385b	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{15}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{16}$**	39	501
DYS385b	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{15}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{16}$**	48	781
DYS385b	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{14}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{15}$**	24	835
DYS385b	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{14}$**	(AAGG)$_4$N$_{14}$(AAAG)$_3$N$_{12}$(AAAG)$_3$N$_{29}$(AAGG)$_6$ **(GAAA)$_{15}$**	21	896

DYS385b	$(AAGG)_4N_{14}(AAAG)_3N_{12}(AAAG)_3N_{29}(AAGG)_6$ **$(GAAA)_{14}$**	$(AAGG)_4N_{14}(AAAG)_3N_{12}(AAAG)_3N_{29}(AAGG)_6$ **$(GAAA)_{15}$**	23	1080
DYS385b	$(AAGG)_4N_{14}(AAAG)_3N_{12}(AAAG)_3N_{29}(AAGG)_6$ **$(GAAA)_{11}$**	$(AAGG)_4N_{14}(AAAG)_3N_{12}(AAAG)_3N_{29}(AAGG)_6$ **$(GAAA)_{12}$**	52	1527
DYS389I	$(TCTG)_3$**$(TCTA)_{12}$**	$(TCTG)_3$**$(TCTA)_{11}$**	32	12
DYS389I	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{10}$**	23	96
DYS389I	$(TCTG)_3$**$(TCTA)_{10}$**	$(TCTG)_3$**$(TCTA)_{11}$**	23	207
DYS389I	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{10}$**	26	214
DYS389I	$(TCTG)_3$**$(TCTA)_{9}$**	$(TCTG)_3$**$(TCTA)_{10}$**	23	1119
DYS389I	$(TCTG)_3$**$(TCTA)_{10}$**	$(TCTG)_3$**$(TCTA)_{11}$**	Unknown	1265
DYS389I	$(TCTG)_3$**$(TCTA)_{10}$**	$(TCTG)_3$**$(TCTA)_{9}$**	39	1700
DYS389I	$(TCTG)_3$**$(TCTA)_{10}$**	$(TCTG)_3$**$(TCTA)_{11}$**	46	1946
DYS389I	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{10}$**	33	1966
DYS389II	$(TCTG)_5$**$(TCTA)_{12}$**$N_{28}(TCTG)_3(TCTA)_{10}$	$(TCTG)_5$**$(TCTA)_{11}$**$N_{28}(TCTG)_3(TCTA)_{10}$	32	401
DYS389II	$(TCTG)_5$**$(TCTA)_{14}$**$N_{28}(TCTG)_3(TCTA)_{11}$	$(TCTG)_5$**$(TCTA)_{13}$**$N_{28}(TCTG)_3(TCTA)_{11}$	36	519
DYS389II	$(TCTG)_5$**$(TCTA)_{13}$**$N_{28}(TCTG)_3(TCTA)_{11}$	$(TCTG)_5$**$(TCTA)_{12}$**$N_{28}(TCTG)_3(TCTA)_{11}$	21	721
DYS389II	$(TCTG)_5$**$(TCTA)_{12}$**$N_{28}(TCTG)_3(TCTA)_{10}$	$(TCTG)_5$**$(TCTA)_{13}$**$N_{28}(TCTG)_3(TCTA)_{10}$	Unknown	1221
DYS389II	$(TCTG)_5$**$(TCTA)_{12}$**$N_{28}(TCTG)_3(TCTA)_{9}$	$(TCTG)_5$**$(TCTA)_{13}$**$N_{28}(TCTG)_3(TCTA)_{9}$	24	1312
DYS389II	$(TCTG)_5$**$(TCTA)_{13}$**$N_{28}(TCTG)_3(TCTA)_{9}$	$(TCTG)_5$**$(TCTA)_{12}$**$N_{28}(TCTG)_3(TCTA)_{9}$	54	1942
DYS390	$(TCTG)_8$**$(TCTA)_{12}$**$(TCTG)_1(TCTG)_4$	$(TCTG)_8$**$(TCTA)_{11}$**$(TCTG)_1(TCTG)_4$	30	975
DYS390	$(TCTG)_8$**$(TCTA)_{12}$**$(TCTG)_1(TCTG)_4$	$(TCTG)_8$**$(TCTA)_{11}$**$(TCTG)_1(TCTG)_4$	24	1148
DYS391	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{10}$**	20	240
DYS391	$(TCTG)_3$**$(TCTA)_{10}$**	$(TCTG)_3$**$(TCTA)_{11}$**	22	689
DYS391	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{10}$**	31	881
DYS391	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{12}$**	50	884
DYS391	$(TCTG)_3$**$(TCTA)_{11}$**	$(TCTG)_3$**$(TCTA)_{12}$**	42	1411
DYS392	**$(TAT)_{13}$**	**$(TAT)_{14}$**	60	1802
DYS393	**$(AGAT)_{14}$**	**$(AGAT)_{13}$**	22	1028
DYS393	**$(AGAT)_{13}$**	**$(AGAT)_{14}$**	42	1411
DYS393	**$(AGAT)_{14}$**	**$(AGAT)_{15}$**	51	1852
DYS425	**$(TGT)_{13}$**	**$(TGT)_{12}$**	31	1084

DYS425	**(TGT)$_{12}$**	**(TGT)$_{13}$**	41	1476
DYS435	**(TGGA)$_{11}$**	**(TGGA)$_{10}$**	19	916
DYS437	**(TCTA)$_{8}$**(TCTG)$_2$(TCTA)$_4$	**(TCTA)$_{9}$**(TCTG)$_2$(TCTA)$_4$	32	1025
DYS437	**(TCTA)$_{9}$**(TCTG)$_2$(TCTA)$_4$	**(TCTA)$_{10}$**(TCTG)$_2$(TCTA)$_4$	53	1869
DYS438	**(TTTTC)$_{12}$**	**(TTTTC)$_{10}$, (TTTTC)$_{12}$**	46	23
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{10}$**	(GATA)$_3$N$_{32}$**(GATA)$_{11}$**	24	516
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{13}$**	(GATA)$_3$N$_{32}$**(GATA)$_{14}$**	36	617
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{13}$**	(GATA)$_3$N$_{32}$**(GATA)$_{12}$**	23	620
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{13}$**	(GATA)$_3$N$_{32}$**(GATA)$_{12}$**	40	1204
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{14}$**	(GATA)$_3$N$_{32}$**(GATA)$_{13}$**	37	1211
DYS439	(GATA)$_3$N$_{32}$**(GATA)$_{13}$**	(GATA)$_3$N$_{32}$**(GATA)$_{12}$**	21	1463
DYS441	**(TTCC)$_{14}$**	**(TTCC)$_{15}$**	38	589
DYS442	**(GATA)$_{13}$**(GACA)$_3$	**(GATA)$_{12}$**(GACA)$_3$	32	213
DYS442	**(GATA)$_{13}$**(GACA)$_3$	**(GATA)$_{12}$**(GACA)$_3$	26	354
DYS442	**(GATA)$_{13}$**(GACA)$_3$	**(GATA)$_{12}$**(GACA)$_3$	45	409
DYS442	**(GATA)$_{15}$**(GACA)$_3$	**(GATA)$_{14}$**(GACA)$_3$	28	425
DYS442	**(GATA)$_{16}$**(GACA)$_3$	**(GATA)$_{15}$**(GACA)$_3$	30	533
DYS442	**(GATA)$_{14}$**(GACA)$_3$	**(GATA)$_{13}$**(GACA)$_3$	26	775
DYS442	**(GATA)$_{15}$**(GACA)$_3$	**(GATA)$_{14}$**(GACA)$_3$	27	953
DYS442	**(GATA)$_{14}$**(GACA)$_3$	**(GATA)$_{15}$**(GACA)$_3$	30	1181
DYS442	**(GATA)$_{13}$**(GACA)$_3$	**(GATA)$_{12}$**(GACA)$_3$	16	1238
DYS442	**(GATA)$_{12}$**(GACA)$_3$	**(GATA)$_{11}$**(GACA)$_3$	39	1239
DYS442	**(GATA)$_{14}$**(GACA)$_3$	**(GATA)$_{13}$**(GACA)$_3$	Unknown	1245
DYS442	**(GATA)$_{12}$**(GACA)$_3$	**(GATA)$_{13}$**(GACA)$_3$	28	1537
DYS442	**(GATA)$_{12}$**(GACA)$_3$	**(GATA)$_{11}$**(GACA)$_3$	73	1884
DYS442	**(GATA)$_{13}$**(GACA)$_3$	**(GATA)$_{12}$**(GACA)$_3$	51	1888
DYS443	**(TTCC)$_{15}$**(CTT)$_3$	**(TTCC)$_{14}$**(CTT)$_3$	18	69
DYS443	**(TTCC)$_{14}$**(CTT)$_3$	**(TTCC)$_{15}$**(CTT)$_3$	35	97
DYS443	**(TTCC)$_{14}$**(CTT)$_3$	**(TTCC)$_{15}$**(CTT)$_3$	28	473
DYS444	**(TAGA)$_{12}$**	**(TAGA)$_{11}$**	46	23

DYS444	**(TAGA)$_{13}$**	**(TAGA)$_{12}$**	20	73
DYS444	**(TAGA)$_{13}$**	**(TAGA)$_{12}$**	30	448
DYS444	**(TAGA)$_{14}$**	**(TAGA)$_{15}$**	25	673
DYS444	**(TAGA)$_{15}$**	**(TAGA)$_{14}$**	30	1067
DYS444	**(TAGA)$_{15}$**	**(TAGA)$_{14}$**	22	1131
DYS444	**(TAGA)$_{15}$**	**(TAGA)$_{14}$**	28	1294
DYS444	**(TAGA)$_{12}$**	**(TAGA)$_{13}$**	33	1680
DYS444	**(TAGA)$_{13}$**	**(TAGA)$_{12}$**	51	1813
DYS445	**(TTTA)$_{12}$**	**(TTTA)$_{11}$**	57	464
DYS445	**(TTTA)$_{11}$**	**(TTTA)$_{12}$**	22	886
DYS445	**(TTTA)$_{13}$**	**(TTTA)$_{14}$**	21	1448
DYS446	**(TCTCT)$_{13}$**	**(TCTCT)$_{14}$**	41	313
DYS446	**(TCTCT)$_{11}$**	**(TCTCT)$_{10}$**	51	1442
DYS446	**(TCTCT)$_{12}$**	**(TCTCT)$_{11}$**	55	1844
DYS446	**(TCTCT)$_{12}$**	**(TCTCT)$_{13}$**	53	1893
DYS447	(TTATA)$_6$(TTATT)$_1$**(TTATA)$_8$**(TTATT)$_1$(TTATA)$_7$	(TTATA)$_6$(TTATT)$_1$**(TTATA)$_9$**(TTATT)$_1$(TTATA)$_7$	33	690
DYS447	(TTATA)$_7$(TTATT)$_1$**(TTATA)$_{10}$(**TTATT)$_1$(TTATA)$_7$	(TTATA)$_7$(TTATT)$_1$**(TTATA)$_9$(**TTATT)$_1$(TTATA)$_7$	47	1302
DYS447	(TTATA)$_6$(TTATT)$_1$(TTATA)$_9$(TTATT)$_1$**(TTATA)$_9$**	(TTATA)$_6$(TTATT)$_1$(TTATA)$_9$(TTATT)$_1$**(TTATA)$_8$**	56	1677
DYS449	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{16}$**	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{15}$**	29	78
DYS449	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{19}$	**(TTCT)$_{14}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{19}$	27	170
DYS449	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{17}$	**(TTCT)$_{17}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{17}$	23	251
DYS449	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{17}$	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{17}$	38	449
DYS449	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{18}$**	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{19}$**	39	492
DYS449	(TTCT)$_{17}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{13}$**	(TTCT)$_{17}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)1$_4$**	35	531
DYS449	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{14}$**	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{15}$**	34	568
DYS449	(TTCT)$_{16}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{16}$**	(TTCT)$_{16}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{17}$**	21	786
DYS449	(TTCT)$_{16}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{17}$**	(TTCT)$_{16}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{18}$**	25	840
DYS449	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{13}$	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{13}$	22	894
DYS449	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{18}$**	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{17}$**	37	904
DYS449	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{17}$**	(TTCT)$_{15}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{16}$**	33	966

DYS449	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{16}$	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{16}$	24	1167
DYS449	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{14}$	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{14}$	22	1349
DYS449	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{14}$	**(TTCT)$_{16}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{14}$	45	1364
DYS449	**(TTCT)$_{18}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{16}$	**(TTCT)$_{19}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{16}$	37	1418
DYS449	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{14}$**	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{15}$**	21	1505
DYS449	**(TTCT)$_{15}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{15}$	**(TTCT)$_{14}$**N$_{22}$(TTCT)$_3$N$_{12}$(TTCT)$_{15}$	22	1526
DYS449	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{15}$**	(TTCT)$_{14}$N$_{22}$(TTCT)$_3$N$_{12}$**(TTCT)$_{16}$**	54	1845
DYS450	**(TTTTA)$_9$**N$_{12}$(TTTTA)$_3$	**(TTTTA)$_8$**N$_{12}$(TTTTA)$_3$	44	1619
DYS452	**(TATAC)$_{12}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	**(TATAC)$_{13}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	17	967
DYS452	**(TATAC)$_{11}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	**(TATAC)$_{12}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	26	971
DYS452	**(TATAC)$_{11}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	**(TATAC)$_{10}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	33	1046
DYS452	**(TATAC)$_{10}$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	**(TATAC)$_9$**[(CATAC)$_1$(TATAC)$_1$]$_2$N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	41	1453
DYS452	(TATAC)$_8$**[(CATAC)$_1$(TATAC)$_1$]$_4$**N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	(TATAC)$_8$**[(CATAC)$_1$(TATAC)$_1$]$_3$**N$_{20}$(TATAC)$_3$ (CATAC)$_1$(TATAC)$_3$	55	1858
DYS456	**(AGAT)$_{15}$**	**(AGAT)$_{16}$**	34	308
DYS456	**(AGAT)$_{16}$**	**(AGAT)$_{17}$**	32	401
DYS456	**(AGAT)$_{15}$**	**(AGAT)$_{16}$**	28	525
DYS456	**(AGAT)$_{16}$**	**(AGAT)$_{17}$**	24	560
DYS456	**(AGAT)$_{15}$**	**(AGAT)$_{16}$**	36	830
DYS456	**(AGAT)$_{17}$**	**(AGAT)$_{16}$**	20	1037
DYS456	**(AGAT)$_{17}$**	**(AGAT)$_{16}$**	Unknown	1333
DYS456	**(AGAT)$_{16}$**	**(AGAT)$_{17}$**	29	1790
DYS458	**(GAAA)$_{18}$**	**(GAAA)$_{17}$**	25	307
DYS458	**(GAAA)$_{18}$**	**(GAAA)$_{19}$**	41	313
DYS458	**(GAAA)$_{17}$**	**(GAAA)$_{18}$**	28	466
DYS458	**(GAAA)$_{17}$**	**(GAAA)$_{18}$**	27	734
DYS458	**(GAAA)$_{16}$**	**(GAAA)$_{15}$**	24	771
DYS458	**(GAAA)$_{17}$**	**(GAAA)$_{18}$**	29	826

DYS458	**$(GAAA)_{15}$**	**$(GAAA)_{16}$**	Unknown	1063
DYS458	**$(GAAA)_{16}$**	**$(GAAA)_{15}$**	19	1132
DYS458	**$(GAAA)_{17}$**	**$(GAAA)_{16}$**	34	1428
DYS458	**$(GAAA)_{16}$**	**$(GAAA)_{17}$**	37	1454
DYS458	**$(GAAA)_{17}$**	**$(GAAA)_{16}$**	19	1508
DYS458	**$(GAAA)_{17}$**	**$(GAAA)_{16}$**	Unknown	1613
DYS458	**$(GAAA)_{18}$**	**$(GAAA)_{17}$**	64	1912
DYS458	**$(GAAA)_{18}$**	**$(GAAA)_{19}$**	65	1920
DYS459	**$(ATTT)_{10}$**	**$(ATTT)_{9}$**	29	246
DYS459	**$(ATTT)_{9}$**	**$(ATTT)_{10}$**	26	573
DYS459	**$(ATTT)_{10}$**	**$(ATTT)_{9}$**	43	928
DYS459	**$(ATTT)_{10}$**	**$(ATTT)_{11}$**	27	1195
DYS460	**$(TAGA)_{13}$**	**$(TAGA)_{12}$**	27	41
DYS460	**$(TAGA)_{9}$**	**$(TAGA)_{10}$**	29	481
DYS460	**$(TAGA)_{11}$**	**$(TAGA)_{10}$**	35	522
DYS460	**$(TAGA)_{12}$**	**$(TAGA)_{11}$**	24	560
DYS460	**$(TAGA)_{11}$**	**$(TAGA)_{10}$**	27	777
DYS460	**$(TAGA)_{11}$**	**$(TAGA)_{10}$**	30	1062
DYS460	**$(TAGA)_{12}$**	**$(TAGA)_{11}$**	33	1112
DYS460	**$(TAGA)_{11}$**	**$(TAGA)_{10}$**	29	1601
DYS460	**$(TAGA)_{10}$**	**$(TAGA)_{11}$**	21	1728
DYS460	**$(TAGA)_{13}$**	**$(TAGA)_{12}$**	28	1734
DYS461	**$(TAGA)_{11}$**	**$(TAGA)_{10}$**	23	1676
DYS462	**$(CATA)_{11}$**	**$(CATA)_{10}$**	18	692
DYS462	**$(CATA)_{13}$**	**$(CATA)_{12}$**	30	1425
DYS462	**$(CATA)_{11}$**	**$(CATA)_{10}$**	39	1502
DYS462	**$(CATA)_{11}$**	**$(CATA)_{12}$**	64	1912
DYS463	$(AAAGG)_6$**$(AAGGG)_{15}$**	$(AAAGG)_6$**$(AAGGG)_{16}$**	36	327
DYS463	$(AAAGG)_6$**$(AAGGG)_{13}$**	$(AAAGG)_6$**$(AAGGG)_{14}$**	54	1447
DYS464	**$(CCTT)_{16}$**$N_{46}(CCTT)_3N_8(CCTT)_4$	**$(CCTT)_{17}$**$N_{46}(CCTT)_3N_8(CCTT)_4$	25	4

DYS464	**(CCTT)$_{15}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{14}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	18	470
DYS464	**(CCTT)$_{17}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	25	512
DYS464	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{19}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	53	760
DYS464	**(CCTT)$_{13}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{14}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	18	847
DYS464	**(CCTT)$_{18}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	19	900
DYS464	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{15}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	20	1185
DYS464	**(CCTT)$_{17}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	31	1339
DYS464	**(CCTT)$_{15}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	22	1526
DYS464	**(CCTT)$_{18}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{19}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	43	1540
DYS464	**(CCTT)$_{17}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{16}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	19	1784
DYS464	**(CCTT)$_{18}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	**(CCTT)$_{17}$**N$_{46}$(CCTT)$_3$N$_8$(CCTT)$_4$	56	1892
DYS468	(CTG)$_4$N$_{44}$(CCT)$_3$N$_{40}$(CTT)$_3$N$_{35}$(CCT)$_4$N$_8$ (CTC)$_4$**(CTT)$_8$**(ATTCAT)$_8$	(CTG)$_4$N$_{44}$(CCT)3N$_{40}$(CTT)$_3$N$_{35}$(CCT)$_4$N$_8$ (CTC)$_4$**(CTT)$_9$**(ATTCAT)$_8$	29	1743
DYS468	(CTG)$_4$N$_{44}$(CCT)$_3$N$_{40}$(CTT)$_3$N$_{35}$(CCT)$_4$N$_8$ (CTC)$_4$(CTT)$_9$**(ATTCAT)$_9$**	(CTG)$_4$N$_{44}$(CCT)$_3$N$_{40}$(CTT)$_3$N$_{35}$(CCT)$_4$N$_8$ (CTC)$_4$(CTT)$_9$**(ATTCAT)$_8$**	60	1802
DYS469	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{20}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{21}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$ (CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	24	107
DYS469	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{15}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{16}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	21	769
DYS469	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{15}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{16}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	29	1491
DYS469	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{16}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_3$7(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	(CTT)$_3$N$_{39}$(CTT)$_4$(GTT)$_1$**(CTT)$_{15}$**T(CTT)$_3$N$_{17}$ (CTT)$_5$N$_{37}$(CTT)$_3$N$_{12}$(CTT)$_4$N$_{12}$(CTT)$_3$N$_{12}$ (CTT)$_5$(CCT)$_4$N$_9$(CTT)$_3$(CCT)$_3$	29	1693
DYS476	**(TGA)$_{11}$**	**(TGA)$_{12}$**	59	1867
DYS481	**(CTT)$_{28}$**	**(CTT)$_{29}$**	30	99
DYS481	**(CTT)$_{22}$**	**(CTT)$_{23}$**	32	655
DYS481	**(CTT)$_{30}$**	**(CTT)$_{29}$**	24	778
DYS481	**(CTT)$_{32}$**	**(CTT)$_{31}$**	17	845
DYS481	**(CTT)$_{31}$**	**(CTT)$_{30}$**	24	1370
DYS481	**(CTT)$_{23}$**	**(CTT)$_{21}$**	42	1411

DYS481	**(CTT)$_{25}$**	**(CTT)$_{24}$**	36	1672
DYS481	**(CTT)$_{22}$**	**(CTT)$_{23}$**	54	1895
DYS484	**(AAT)$_{13}$**N$_{12}$(AAT)$_3$(TAT)$_3$	**(AAT)$_{11}$**N$_{12}$(AAT)$_3$(TAT)$_3$	22	45
DYS484	**(AAT)$_{13}$**N$_{12}$(AAT)$_3$(TAT)$_3$	**(AAT)$_{14}$**N$_{12}$(AAT)$_3$(TAT)$_3$	35	875
DYS484	**(AAT)$_{12}$**N$_{12}$(AAT)$_3$(TAT)$_3$	**(AAT)$_{13}$**N$_{12}$(AAT)$_3$(TAT)$_3$	25	1213
DYS484	**(AAT)$_{12}$**N$_{12}$(AAT)$_3$(TAT)$_3$	**(AAT)$_{10}$**N$_{12}$(AAT)$_3$(TAT)$_3$	26	1653
DYS487	**(AAT)$_{13}$**	**(AAT)$_{14}$**	21	172
DYS487	**(AAT)$_{14}$**	**(AAT)$_{13}$**	28	1410
DYS495	**(AAT)$_{15}$**	**(AAT)$_{16}$**	26	775
DYS495	**(AAT)$_{15}$**	**(AAT)$_{16}$**	30	1274
DYS495	**(AAT)$_{17}$**	**(AAT)$_{16}$**	31	1596
DYS497	**(TTA)$_{15}$**	**(TTA)$_{14}$**	25	58
DYS497	**(TTA)$_{15}$**	**(TTA)$_{16}$**	40	305
DYS504	**(CCTT)$_{17}$**N$_7$(CCCT)$_3$	**(CCTT)$_{16}$**N$_7$(CCCT)$_3$	25	275
DYS504	**(CCTT)$_{19}$**N$_7$(CCCT)$_3$	**(CCTT)$_{18}$**N$_7$(CCCT)$_3$	Unknown	1223
DYS504	**(CCTT)$_{17}$**N$_7$(CCCT)$_3$	**(CCTT)$_{18}$**N$_7$(CCCT)$_3$	39	1502
DYS504	**(CCTT)$_{18}$**N$_7$(CCCT)$_3$	**(CCTT)$_{17}$**N$_7$(CCCT)$_3$	30	1796
DYS504	**(CCTT)$_{18}$**N$_7$(CCCT)$_3$	**(CCTT)$_{17}$**N$_7$(CCCT)$_3$	54	1895
DYS505	**(TCCT)$_{13}$**	**(TCCT)$_{12}$**	64	951
DYS505	**(TCCT)$_{12}$**	**(TCCT)$_{13}$**	25	1070
DYS508	**(TATC)$_{10}$**	**(TATC)$_{11}$**	32	1369
DYS508	**(TATC)$_{11}$**	**(TATC)$_{12}$**	21	1635
DYS508	**(TATC)$_{11}$**	**(TATC)$_{10}$**	20	1862
DYS508	**(TATC)$_{14}$**	**(TATC)$_{13}$**	67	1954
DYS509	**(AAAT)$_{10}$**(AATAA)$_1$(AAAT)$_3$	**(AAAT)$_9$**(AATAA)$_1$(AAAT)$_3$	18	680
DYS510	(GATA)$_3$N$_{12}$**(GATA)$_{12}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	(GATA)$_3$N$_{12}$**(GATA)$_{13}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	24	17
DYS510	(GATA)$_3$N$_{12}$**(GATA)$_{12}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	(GATA)$_3$N$_{12}$**(GATA)$_{11}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	64	166
DYS510	(GATA)$_3$N$_{12}$**(GATA)$_{12}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	(GATA)$_3$N$_{12}$**(GATA)$_{11}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	25	185
DYS510	(GATA)$_3$N$_{12}$**(GATA)$_{15}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	(GATA)$_3$N$_{12}$**(GATA)$_{14}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	19	761
DYS510	(GATA)$_3$N$_{12}$**(GATA)$_{11}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	(GATA)3N$_{12}$**(GATA)$_{10}$**N$_{13}$(GGAT)$_4$N$_9$(GATA)$_3$	19	916

DYS510	$(GATA)_3N_{12}$**$(GATA)_{14}$**$N_{13}(GGAT)_4N_9(GATA)_3$	$(GATA)_3N_{12}$**$(GATA)_{15}$**$N_{13}(GGAT)_4N_9(GATA)_3$	43	928
DYS510	$(GATA)_3N_{12}$**$(GATA)_{12}$**$N_{13}(GGAT)_4N_9(GATA)_3$	$(GATA)_3N_{12}$**$(GATA)_{11}$**$N_{13}(GGAT)_4N_9(GATA)_3$	33	1112
DYS510	$(GATA)_3N_{12}$**$(GATA)_{13}$**$N_{13}(GGAT)_4N_9(GATA)_3$	$(GATA)_3N_{12}$**$(GATA)_{12}$**$N_{13}(GGAT)_4N_9(GATA)_3$	34	1118
DYS510	$(GATA)_3N_{12}$**$(GATA)_{14}$**$N_{13}(GGAT)_4N_9(GATA)_3$	$(GATA)_3N_{12}$**$(GATA)_{15}$**$N_{13}(GGAT)_4N_9(GATA)_3$	45	1364
DYS510	$(GATA)_3N_{12}$**$(GATA)_{12}$**$N_{13}(GGAT)_4N_9(GATA)_3$	$(GATA)_3N_{12}$**$(GATA)_{13}$**$N_{13}(GGAT)_4N_9(GATA)_3$	28	1758
DYS511	**$(GATA)_{13}$**	**$(GATA)_{12}$**	22	418
DYS511	**$(GATA)_{11}$**	**$(GATA)_{12}$**	52	1804
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	33	29
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{14}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	23	134
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	33	187
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{14}$**	30	1181
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{14}$**	21	1216
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{14}$**	Unknown	1308
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{11}$**	22	1323
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	36	1421
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{13}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	36	1672
DYS513	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{11}$**	$(TCTA)_4(TCCA)_1(TATC)_3(CGTA)_1$**$(TCTA)_{12}$**	60	1695
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{16}$**	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	28	106
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{14}$**	$(TTCT)_4N_{30}$**$(TTCT)_{13}$**	37	904
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{12}$**	$(TTCT)_4N_{30}$**$(TTCT)_{13}$**	44	973
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	$(TTCT)_4N_{30}$**$(TTCT)_{16}$**	34	1030
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{13}$**	$(TTCT)_4N_{30}$**$(TTCT)_{14}$**	Unknown	1241
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{12}$**	$(TTCT)_4N_{30}$**$(TTCT)_{13}$**	38	1524
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{14}$**	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	42	1628
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	$(TTCT)_4N_{30}$**$(TTCT)_{16}$**	22	1778
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	$(TTCT)_4N_{30}$**$(TTCT)_{16}$**	24	1782
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{12}$**	$(TTCT)_4N_{30}$**$(TTCT)_{11}$**	53	1869
DYS516	$(TTCT)_4N_{30}$**$(TTCT)_{17}$**	$(TTCT)_4N_{30}$**$(TTCT)_{15}$**	50	1881
DYS517	**$(AAAG)_{16}$**$N_8(AAAG)_3$	**$(AAAG)_{15}$**$N_8(AAAG)_3$	26	802
DYS517	**$(AAAG)_{14}$**$N_8(AAAG)_3$	**$(AAAG)_{15}$**$N_8(AAAG)_3$	30	1796

DYS517	**(AAAG)$_{16}$**N$_8$(AAAG)$_3$	**(AAAG)$_{15}$**N$_8$(AAAG)$_3$	63	1807
DYS517	**(AAAG)$_{14}$**N$_8$(AAAG)$_3$	**(AAAG)$_{15}$**N$_8$(AAAG)$_3$	54	1860
DYS517	**(AAAG)$_{14}$**N$_8$(AAAG)$_3$	**(AAAG)$_{15}$**N$_8$(AAAG)$_3$	53	1869
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{17}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{15}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{17}$N$_{27}$(AAGG)$_4$	33	29
DYS518	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{14}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{14}$**N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{14}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{15}$**N$_{27}$(AAGG)$_4$	32	56
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{17}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{12}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{12}$N$_{27}$(AAGG)$_4$	48	74
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{15}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{14}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	30	87
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{18}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{16}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{17}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{16}$N$_{27}$(AAGG)$_4$	34	88
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{17}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{13}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{13}$N$_{27}$(AAGG)$_4$	29	89
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{19}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{17}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{18}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{17}$N$_{27}$(AAGG)$_4$	50	270
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{18}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{19}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	25	426
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{22}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{13}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{21}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{13}$N$_{27}$(AAGG)$_4$	26	433
DYS518	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{12}$**N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{11}$**N$_{27}$(AAGG)$_4$	28	525
DYS518	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{17}$**N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{16}$**N$_{27}$(AAGG)$_4$	24	571
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{18}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{14}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{17}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{14}$N$_{27}$(AAGG)$_4$	21	593
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$N$_6$(AAAG)$_1$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{15}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{17}$N$_{27}$ (AAGG)$_4$	23	687
DYS518	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{16}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{14}$**N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{16}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{15}$**N$_{27}$(AAGG)$_4$	20	703
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{17}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{15}$N$_{27}$(AAGG)$_4$	20	741
DYS518	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{16}$**N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$(AAAG)$_{15}$(GGAG)$_1$(AAAG)$_4$ N$_6$**(AAAG)$_{17}$**N$_{27}$(AAGG)$_4$	22	747
DYS518	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{15}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{16}$N$_{27}$(AAGG)$_4$	(AAAG)$_3$(GAAG)$_1$**(AAAG)$_{16}$**(GGAG)$_1$(AAAG)$_4$ N$_6$(AAAG)$_{16}$N$_{27}$(AAGG)$_4$	15	763

DYS518	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{17}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{14}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{16}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{16}N_{27}(AAGG)_4$	22	817
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{16}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{18}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{16}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{17}}N_{27}(AAGG)_4$	23	888
DYS518	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{15}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{16}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{14}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{16}N_{27}(AAGG)_4$	19	916
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{16}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{15}}N_{27}(AAGG)_4$	56	1043
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{17}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{16}}N_{27}(AAGG)_4$	37	1107
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{18}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{17}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{18}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{18}}N_{27}(AAGG)_4$	19	1115
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{17}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{17}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{16}}N_{27}(AAGG)_4$	21	1273
DYS518	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{15}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{13}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{16}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{13}N_{27}(AAGG)_4$	45	1364
DYS518	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{16}}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{17}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{15}}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{15}}N_{27}(AAGG)_4$	42	1411
DYS518	$(AAAG)_3(GAAG)_1(AAAG)_{16}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{18}}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1(AAAG)_{16}(GGAG)_1(AAAG)_4 N_6\mathbf{(AAAG)_{19}}N_{27}(AAGG)_4$	32	1545
DYS518	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{16}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{15}N_{27}(AAGG)_4$	$(AAAG)_3(GAAG)_1\mathbf{(AAAG)_{15}}(GGAG)_1(AAAG)_4 N_6(AAAG)_{15}N_{27}(AAGG)_4$	29	1790
DYS520	$\mathbf{(GATA)_{12}}(CATA)_{11}$	$\mathbf{(GATA)_{11}}(CATA)_{11}$	32	56
DYS520	$\mathbf{(GATA)_{12}}(CATA)_{11}$	$\mathbf{(GATA)_{11}}(CATA)_{11}$	34	88
DYS520	$(GATA)_{12}\mathbf{(CATA)_{10}}$	$(GATA)_{12}\mathbf{(CATA)_{11}}$	31	141
DYS520	$\mathbf{(GATA)_{11}}(CATA)_{11}$	$\mathbf{(GATA)_{12}}(CATA)_{11}$	31	434
DYS521	$(CTTT)_5(TCTT)_3(TTTT)_1(CTTT)_5T\mathbf{(CTTT)_{13}}$	$(CTTT)_5(TCTT)_3(TTTT)_1(CTTT)_5T\mathbf{(CTTT)_{12}}$	25	133
DYS522	$\mathbf{(ATAG)_{10}}$	$\mathbf{(ATAG)_{11}}$	22	1088
DYS525	$\mathbf{(AGAT)_{11}}$	$\mathbf{(AGAT)_{10}}$	24	571
DYS526a	$\mathbf{(CCTT)_{16}}$	$\mathbf{(CCTT)_{15}}$	64	166
DYS526a	$\mathbf{(CCTT)_{13}}$	$\mathbf{(CCTT)_{14}}$	53	453
DYS526a	$\mathbf{(CCTT)_{14}}$	$\mathbf{(CCTT)_{13}}$	31	1315
DYS526a	$\mathbf{(CCTT)_{11}}$	$\mathbf{(CCTT)_{12}}$	31	1652
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{11}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{13}}(CCTT)_9N_{113}(CCTT)_{11}$	24	17
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	50	42

DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{17}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	34	88
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{12}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{12}$	25	185
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{17}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	41	298
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	41	386
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{11}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{12}}(CCTT)_9N_{113}(CCTT)_{14}$	31	505
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{10}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{17}}(CCTT)_9N_{113}(CCTT)_{10}$	32	523
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{17}}(CCTT)_9N_{113}(CCTT)_{10}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{10}$	39	654
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{17}}(CCTT)_9N_{113}(CCTT)_{14}$	25	918
DYS526b	$(CCCT)_3N_{20}(CTTT)_{15}\mathbf{(CCTT)_9}N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}(CTTT)_{15}\mathbf{(CCTT)_8}N_{113}(CCTT)_{14}$	36	983
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	37	1107
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	41	1122
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{14}$	22	1161
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{13}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{14}$	45	1171
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	48	1250
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{13}}(CCTT)_9N_{113}(CCTT)_{12}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{12}$	54	1447
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{13}}(CCTT)_9N_{113}(CCTT)_{13}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{12}}(CCTT)_9N_{113}(CCTT)_{13}$	21	1555
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{14}}(CCTT)_9N_{113}(CCTT)_{13}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{13}$	29	1662
DYS526b	$(CCCT)_3N_{20}\mathbf{(CTTT)_{15}}(CCTT)_9N_{113}(CCTT)_{14}$	$(CCCT)_3N_{20}\mathbf{(CTTT)_{16}}(CCTT)_9N_{113}(CCTT)_{14}$	50	1881
DYS531	$\mathbf{(AAAT)_{11}}$	$\mathbf{(AAAT)_9}$	22	747
DYS532	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{12}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{13}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	26	759
DYS532	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{12}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{11}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	30	1101
DYS532	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{12}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{13}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	29	1255
DYS532	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{12}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	$(TCCC)_3N_5(TTCC)_5N_9(TTCT)_3(TTCC)_1\mathbf{(TTCT)_{13}}N_{17}$ $(TTCT)_3N_{13}(TTCC)_4N_{70}(TTCT)_3N_6(TTCT)_3$	30	1347
DYS533	$\mathbf{(TATC)_{13}}$	$\mathbf{(TATC)_{12}}$	34	27
DYS533	$\mathbf{(TATC)_{13}}$	$\mathbf{(TATC)_{12}}$	29	892
DYS533	$\mathbf{(TATC)_{13}}$	$\mathbf{(TATC)_{12}}$	37	905
DYS533	$\mathbf{(TATC)_{13}}$	$\mathbf{(TATC)_{14}}$	18	1039
DYS533	$\mathbf{(TATC)_{12}}$	$\mathbf{(TATC)_{13}}$	42	1054

DYS533	**(TATC)$_{14}$**	**(TATC)$_{15}$**	34	1158
DYS533	**(TATC)$_{12}$**	**(TATC)$_{13}$**	21	1166
DYS533	**(TATC)$_{13}$**	**(TATC)$_{12}$**	40	1281
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{16}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{17}$**N$_9$(CTTT)$_3$	37	135
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{16}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{17}$**N$_9$(CTTT)$_3$	27	167
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{15}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{16}$**N$_9$(CTTT)$_3$	17	235
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{14}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{15}$**N$_9$(CTTT)$_3$	41	250
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{14}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{15}$**N$_9$(CTTT)$_3$	34	308
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{17}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{16}$**N$_9$(CTTT)$_3$	39	419
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{18}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{19}$**N$_9$(CTTT)$_3$	28	674
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{13}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{14}$**N$_9$(CTTT)$_3$	23	1205
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{16}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{17}$**N$_9$(CTTT)$_3$	45	1364
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{14}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{13}$**N$_9$(CTTT)$_3$	58	1808
DYS534	(CTTT)$_3$N$_8$**(CTTT)$_{17}$**N$_9$(CTTT)$_3$	(CTTT)$_3$N$_8$**(CTTT)$_{18}$**N$_9$(CTTT)$_3$	61	1836
DYS536	**(TCCT)$_{12}$**N$_8$(TTCT)$_4$	**(TCCT)$_{13}$**N$_8$(TTCT)$_4$	20	1092
DYS537	**(TCTA)$_{12}$**	**(TCTA)$_{13}$**	29	609
DYS537	**(TCTA)$_{13}$**	**(TCTA)$_{12}$**	27	1248
DYS537	**(TCTA)$_{11}$**	**(TCTA)$_{12}$**	40	1427
DYS539	**(TAGA)$_{11}$**	**(TAGA)$_{10}$**	63	1902
DYS540	**(TTAT)$_{12}$**	**(TTAT)$_{13}$**	31	141
DYS540	**(TTAT)$_{12}$**	**(TTAT)$_{11}$**	59	152
DYS540	**(TTAT)$_{11}$**	**(TTAT)$_{10}$**	19	682
DYS540	**(TTAT)$_{11}$**	**(TTAT)$_{12}$**	38	1020
DYS540	**(TTAT)$_{12}$**	**(TTAT)$_{11}$**	31	1134
DYS541	**(TATC)$_{12}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{13}$**(TTC)$_1$(TATC)$_3$	34	151
DYS541	**(TATC)$_{12}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{11}$**(TTC)$_1$(TATC)$_3$	34	239
DYS541	**(TATC)$_{14}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{13}$**(TTC)$_1$(TATC)$_3$	33	339
DYS541	**(TATC)$_{13}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{12}$**(TTC)$_1$(TATC)$_3$	36	733
DYS541	**(TATC)$_{14}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{13}$**(TTC)$_1$(TATC)$_3$	25	1415
DYS541	**(TATC)$_{12}$**(TTC)$_1$(TATC)$_3$	**(TATC)$_{13}$**(TTC)$_1$(TATC)$_3$	64	1843

DYS543	$(AGAT)_3$**$(GATA)_{11}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_4(ATGG)2N_{35}(GAAA)_3$	23	16
DYS543	$(AGAT)_3$**$(GATA)_{15}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{14}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	40	774
DYS543	$(AGAT)_3$**$(GATA)_{15}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{14}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	33	844
DYS543	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{11}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	43	939
DYS543	$(AGAT)_3$**$(GATA)_{13}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{14}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	42	1054
DYS543	$(AGAT)_3$**$(GATA)_{15}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{16}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	Unknown	1063
DYS543	$(AGAT)_3$**$(GATA)_{13}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	Unknown	1223
DYS543	$(AGAT)_3$**$(GATA)_{15}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{14}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	31	1229
DYS543	$(AGAT)_3$**$(GATA)_{13}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_3(ATGG)_3N_{35}(GAAA)_3$	31	1315
DYS543	$(AGAT)_3$**$(GATA)_{11}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	Unknown	1591
DYS543	$(AGAT)_3$**$(GATA)_{13}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	$(AGAT)_3$**$(GATA)_{12}$**$N_{42}(ATGT)_4(ATGG)_2N_{35}(GAAA)_3$	28	1712
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{17}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{18}$**	34	371
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{14}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{13}$**	20	706
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{16}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{17}$**	20	756
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{17}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{16}$**	31	878
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{18}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{17}$**	23	1119
DYS546	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{16}$**	$(TTCC)_3N_{23}(TTCT)_3N_{33}(TTCC)_3N_{16}$**$(TTCT)_{14}$**	55	1840
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}$**$(TTTC)_{16}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}$**$(TTTC)_{17}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	28	1
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{12}$**$N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{13}$**$N_{14}(TTTC)_3$	46	10
DYS547	$(CCTT)_{11}T(CTTC)_5N_{56}$**$(TTTC)_{17}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{14}N_{14}(TTTC)_3$	$(CCTT)_{11}T(CTTC)_5N_{56}$**$(TTTC)_{18}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{14}N_{14}(TTTC)_3$	59	152
DYS547	**$(CCTT)_{13}$**$T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	**$(CCTT)_{12}$**$T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	34	243
DYS547	$(CCTT)_{13}T(CTTC)_5N_{56}(TTTC)_{14}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{12}$**$N_{14}(TTTC)_3$	$(CCTT)_{13}T(CTTC)_5N_{56}(TTTC)_{14}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{11}$**$N_{14}(TTTC)_3$	31	268
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{17}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{12}$**$N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{17}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{11}$**$N_{14}(TTTC)_3$	50	270
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}$**$(TTTC)_{18}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}$**$(TTTC)_{19}$**$N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	33	339
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{17}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{11}$**$N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{17}N_{10}(CCTT)_4$ $(TCTC)_1$**$(TTTC)_{10}$**$N_{14}(TTTC)_3$	36	378
DYS547	$(CCTT)_{13}T(CTTC)_4N_{56}$**$(TTTC)_{16}$**$N_{10}(CCTT)_4$	$(CCTT)_{13}T(CTTC)_4N_{56}$**$(TTTC)_{17}$**$N_{10}(CCTT)_4$	28	425

	$(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$		
DYS547	$(CCTT)_{13}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	$(CCTT)_{13}T(CTTC)_5N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	28	484
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	31	613
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{11}}N_{14}(TTTC)_3$	39	654
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{15}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{14}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	27	710
DYS547	$(CCTT)_{13}T(CTTC)_5N_{56}\mathbf{(TTTC)_{15}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	$(CCTT)_{13}T(CTTC)_5N_{56}\mathbf{(TTTC)_{14}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	25	711
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	59	846
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	37	904
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{19}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	22	986
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{22}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_9N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{21}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_9N_{14}(TTTC)_3$	55	1022
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{13}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{14}}N_{14}(TTTC)_3$	43	1153
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{19}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	31	1229
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{13}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{14}}N_{14}(TTTC)_3$	29	1276
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{19}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	28	1294
DYS547	$(CCTT)_{11}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	$(CCTT)_{11}T(CTTC)_4N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{13}}N_{14}(TTTC)_3$	30	1297
DYS547	$(CCTT)_{11}T(CTTC)_5N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{11}}N_{14}(TTTC)_3$	$(CCTT)_{11}T(CTTC)_5N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	32	1321
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{15}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{13}}N_{14}(TTTC)_3$	41	1379
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}\mathbf{(TTTC)_{18}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}\mathbf{(TTTC)_{19}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{10}N_{14}(TTTC)_3$	24	1466
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{10}}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{11}}N_{14}(TTTC)_3$	42	1485
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{15}}N_{10}(CCTT)_4$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$	29	1491

	$(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	$(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$		
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	23	1510
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{11}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{10}}N_{14}(TTTC)_3$	38	1524
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{10}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{TTTC)_{17}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{10}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{16}}N_{14}(TTTC)_3$	36	1582
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{13}N_{14}(TTTC)_3$	28	1640
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{15}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{14}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	22	1648
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	37	1663
DYS547	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_4N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	Unknown	1723
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{17}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{12}N_{14}(TTTC)_3$	54	1860
DYS547	$(CCTT)_{10}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{13}}N_{14}(TTTC)_3$	$(CCTT)_{10}T(CTTC)_5N_{56}(TTTC)_{16}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	53	1871
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{16}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}\mathbf{(TTTC)_{15}}N_{10}(CCTT)_4$ $(TCTC)_1(TTTC)_{11}N_{14}(TTTC)_3$	55	1910
DYS547	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{14}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{11}}N_{14}(TTTC)_3$	$(CCTT)_{12}T(CTTC)_5N_{56}(TTTC)_{14}N_{10}(CCTT)_4$ $(TCTC)_1\mathbf{(TTTC)_{12}}N_{14}(TTTC)_3$	65	1920
DYS549	$\mathbf{(GATA)_{13}}$	$\mathbf{(GATA)_{12}}$	30	87
DYS549	$\mathbf{(GATA)_{13}}$	$\mathbf{(GATA)_{12}}$	47	113
DYS549	$\mathbf{(GATA)_{12}}$	$\mathbf{(GATA)_{11}}$	27	119
DYS549	$\mathbf{(GATA)_{12}}$	$\mathbf{(GATA)_{13}}$	38	336
DYS549	$\mathbf{(GATA)_{14}}$	$\mathbf{(GATA)_{13}}$	43	472
DYS549	$\mathbf{(GATA)_{12}}$	$\mathbf{(GATA)_{11}}$	25	517
DYS549	$\mathbf{(GATA)_{12}}$	$\mathbf{(GATA)_{11}}$	22	625
DYS551	$\mathbf{(AGAT)_{15}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	$\mathbf{(AGAT)_{14}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	21	436
DYS551	$\mathbf{(AGAT)_{14}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	$\mathbf{(AGAT)_{13}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	22	604
DYS551	$\mathbf{(AGAT)_{15}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	$\mathbf{(AGAT)_{14}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	41	862
DYS551	$\mathbf{(AGAT)_{14}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	$\mathbf{(AGAT)_{13}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	51	1212
DYS551	$\mathbf{(AGAT)_{13}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	$\mathbf{(AGAT)_{14}}N_8(AGAC)_3(AGGT)_1(AGAT)_4$	27	1671

DYS552	$(TCTA)_3(TCTG)_1$**$(TCTA)_9$**$N_{40}(TCTA)_{15}$	$(TCTA)_3(TCTG)_1$**$(TCTA)_7$**$N_{40}(TCTA)_{15}$	25	471
DYS552	$(TCTA)_3(TCTG)_1(TCTA)_10N_{40}$**$(TCTA)_{15}$**	$(TCTA)_3(TCTG)_1(TCTA)_{10}N_{40}$**$(TCTA)_{16}$**	59	846
DYS552	$(TCTA)_3(TCTG)_1(TCTA)_{10}N_{40}$**$(TCTA)_{14}$**	$(TCTA)_3(TCTG)_1(TCTA)_{10}N_{40}$**$(TCTA)_{15}$**	18	847
DYS552	$(TCTA)_3(TCTG)_1$**$(TCTA)_{11}$**$N_{40}(TCTA)_{14}$	$(TCTA)_3(TCTG)_1$**$(TCTA)_{12}$**$N_{40}(TCTA)_{14}$	31	1486
DYS554	**$(TAAA)_{10}$**	**$(TAAA)_{11}$**	37	1277
DYS556	**$(AAAT)_{12}$**	**$(AAAT)_{11}$**	30	1101
DYS556	**$(AAAT)_{11}$**	**$(AAAT)_{12}$**	21	1448
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{15}$**	24	17
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{15}$**	23	52
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{15}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	34	394
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{15}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	38	589
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{17}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	38	1494
DYS557	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{15}$**	$(TTTC)_4(TTCTC)_1(TTTC)_4(TTC)_1$**$(TTTC)_{16}$**	17	1517
DYS559	**$(TAAA)_9$**	**$(TAAA)_8$**	27	1357
DYS561	**$(GATA)_{13}$**$(GACA)_4$	**$(GATA)_{12}$**$(GACA)_4$	34	359
DYS565	**$(ATAA)_{13}$**	**$(ATAA)_{12}$**	34	101
DYS565	**$(ATAA)_{13}$**	**$(ATAA)_{12}$**	43	624
DYS565	**$(ATAA)_{13}$**	**$(ATAA)_{14}$**	27	1673
DYS568	**$(AAAT)_{12}$**	**$(AAAT)_{13}$**	35	1547
DYS569	**$(ATTT)_{12}$**	**$(ATTT)_{11}$**	31	598
DYS569	**$(ATTT)_{12}$**	**$(ATTT)_{11}$**	21	1053
DYS570	**$(TTTC)_{17}$**	**$(TTTC)_{16}$**	34	92
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{20}$**	39	112
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{18}$**	20	240
DYS570	**$(TTTC)_{20}$**	**$(TTTC)_{19}$**	37	293
DYS570	**$(TTTC)_{17}$**	**$(TTTC)_{18}$**	41	313
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{17}$**	16	316
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{18}$**	25	317
DYS570	**$(TTTC)_{20}$**	**$(TTTC)_{21}$**	32	614
DYS570	**$(TTTC)_{20}$**	**$(TTTC)_{21}$**	24	855

DYS570	**$(TTTC)_{20}$**	**$(TTTC)_{19}$**	30	867
DYS570	**$(TTTC)_{21}$**	**$(TTTC)_{22}$**	22	922
DYS570	**$(TTTC)_{18}$**	**$(TTTC)_{19}$**	36	1061
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{20}$**	20	1253
DYS570	**$(TTTC)_{16}$**	**$(TTTC)_{15}$**	41	1256
DYS570	**$(TTTC)_{21}$**	**$(TTTC)_{20}$**	45	1364
DYS570	**$(TTTC)_{17}$**	**$(TTTC)_{18}$**	54	1895
DYS570	**$(TTTC)_{19}$**	**$(TTTC)_{18}$**	66	1901
DYS572	**$(AAAT)_{11}$**	**$(AAAT)_{10}$**	35	735
DYS572	**$(AAAT)_{11}$**	**$(AAAT)_{10}$**	24	1342
DYS572	**$(AAAT)_{11}$**	**$(AAAT)_{10}$**	28	1696
DYS574	**$(TTAT)_{10}$**	**$(TTAT)_{9}$**	43	1818
DYS576	**$(AAAG)_{17}$**	**$(AAAG)_{18}$**	28	153
DYS576	**$(AAAG)_{19}$**	**$(AAAG)_{18}$**	34	236
DYS576	**$(AAAG)_{17}$**	**$(AAAG)_{18}$**	34	243
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{17}$**	47	347
DYS576	**$(AAAG)_{19}$**	**$(AAAG)_{18}$**	17	635
DYS576	**$(AAAG)_{19}$**	**$(AAAG)_{18}$**	37	715
DYS576	**$(AAAG)_{20}$**	**$(AAAG)_{21}$**	23	716
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{17}$**	38	719
DYS576	**$(AAAG)_{20}$**	**$(AAAG)_{21}$**	29	789
DYS576	**$(AAAG)_{20}$**	**$(AAAG)_{19}$**	50	884
DYS576	**$(AAAG)_{17}$**	**$(AAAG)_{18}$**	42	1054
DYS576	**$(AAAG)_{19}$**	**$(AAAG)_{18}$**	36	1061
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{19}$**	Unknown	1200
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{19}$**	40	1204
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{19}$**	51	1212
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{17}$**	Unknown	1224
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{19}$**	Unknown	1265
DYS576	**$(AAAG)_{18}$**	**$(AAAG)_{19}$**	38	1278

DYS576	**(AAAG)$_{17}$**	**(AAAG)$_{16}$**	22	1403
DYS576	**(AAAG)$_{19}$**	**(AAAG)$_{18}$**	42	1411
DYS576	**(AAAG)$_{18}$**	**(AAAG)$_{17}$**	26	1440
DYS576	**(AAAG)$_{18}$**	**(AAAG)$_{19}$**	47	1675
DYS576	**(AAAG)$_{18}$**	**(AAAG)$_{19}$**	55	1844
DYS576	**(AAAG)$_{20}$**	**(AAAG)$_{19}$**	54	1939
DYS578	**(AAAT)$_{8}$**	**(AAAT)$_{9}$**	Unknown	1353
DYS585	**(TTATG)$_{9}$**	**(TTATG)$_{10}$**	35	794
DYS585	**(TTATG)$_{9}$**	**(TTATG)$_{8}$**	26	1105
DYS585	**(TTATG)$_{9}$**	**(TTATG)$_{10}$**	17	1109
DYS587	**(CAATA)$_{11}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	**(CAATA)$_{10}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	24	83
DYS587	**(CAATA)$_{11}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	**(CAATA)$_{12}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	59	152
DYS587	**(CAATA)$_{12}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	**(CAATA)$_{11}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	25	260
DYS587	**(CAATA)$_{12}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	**(CAATA)$_{13}$**[(CAGTA)$_1$(CAATA)$_1$]$_3$	63	917
DYS593	(AAAAC)$_4$**(AAAAT)$_{8}$**	(AAAAC)$_4$**(AAAAT)$_{7}$**	26	1082
DYS593	(AAAAC)$_4$**(AAAAT)$_{8}$**	(AAAAC)$_4$**(AAAAT)$_{9}$**	Unknown	1353
DYS594	**(AAATA)$_{10}$**	**(AAATA)$_{11}$**	31	1134
DYS611	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$ N$_{15}$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{19}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_1$ $_5$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{20}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	30	99
DYS611	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$ N$_{15}$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{17}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_1$ $_5$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{16}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	31	164
DYS611	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_{15}$ (TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{18}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_1$ $_5$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{16}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	20	254
DYS611	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_{15}$ (TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{15}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_1$ $_5$(TTC)$_4$(CT)$_1$(TTC)$_3$(CTC)$_1$(TTC)$_3$N$_{20}$(TTC)$_3$T (TTC)$_4$N$_7$ (TTC)$_3$N$_9$(TTC)$_4$(TCC)$_1$**(TTC)$_{14}$**N$_{23}$(TTC)$_4$N$_4$ [(TTC)$_1$(CTC)$_1$]$_2$[(CTC)$_1$(TTC)$_1$]$_3$	25	517
DYS611	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_{15}$	(TTC)$_5$N$_9$(TTC)$_4$(CTC)$_1$(TTC)$_3$N$_9$(TTC)$_5$(CTC)$_1$(TTC)$_3$N$_1$	18	956

	$(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{17}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{18}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$		
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{16}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{15}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	48	969
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{16}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{15}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	34	990
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{16}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{15}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	45	1171
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{16}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{14}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	21	1216
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{17}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{16}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	40	1281
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{15}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{14}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	30	1401
DYS611	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_{15}$ $(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{19}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	$(TTC)_5N_9(TTC)_4(CTC)_1(TTC)_3N_9(TTC)_5(CTC)_1(TTC)_3N_1$ $_5(TTC)_4(CT)_1(TTC)_3(CTC)_1(TTC)_3N_{20}(TTC)_3T\ (TTC)_4N_7$ $(TTC)_3N_9(TTC)_4(TCC)_1\mathbf{(TTC)_{18}}N_{23}(TTC)_4N_4$ $[(TTC)_1(CTC)_1]_2[(CTC)_1(TTC)_1]_3$	53	1839
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	25	4
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	34	124
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	33	127
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{28}}$	31	141
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	49	161
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	26	248

DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	34	258
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	21	593
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	53	659
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	19	696
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	32	770
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{22}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{21}}$	36	830
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	35	875
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	24	933
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	27	1044
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{28}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	21	1053
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	Unknown	1224
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	49	1335
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	23	1359
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	20	1460
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{23}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	36	1582
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{23}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{24}}$	Unknown	1613
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	41	1786
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{28}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{27}}$	32	1792
DYS612	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{25}}$	$(CCT)_5(CTT)_1(TCT)_4(CCT)_1\mathbf{(TCT)_{26}}$	51	1888
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{19}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	22	219
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{20}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{19}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	24	855
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{17}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1](CTT)_5$	19	916
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{19}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	45	1283
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{19}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	27	1583

DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{19}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	19	1784
DYS614	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}$ $(CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{18}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	$(CTT)_4(CCT)_1(CTT)_3N_{15}(CCT)_4(CTT)_4(CCT)_1(CTT)_3N_{18}($ $CCT)_3(CTT)_5N_{20}[(CTT)_1(CTG)_1]_3(CT)_1\mathbf{(CTT)_{16}}N_8(CTT)_4$ $[(CTC)_1(CTT)_1]_3[(CTC)_1(TTT)_1]_1(CTT)_5$	52	1965
DYS616	$\mathbf{(TAT)_{14}}(CAT)_1(TAT)_3$	$\mathbf{(TAT)_{15}}(CAT)_1(TAT)_3$	25	40
DYS616	$\mathbf{(TAT)_{15}}(CAT)_1(TAT)_3$	$\mathbf{(TAT)_{14}}(CAT)_1(TAT)_3$	41	417
DYS622	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{12}}$	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{13}}$	33	187
DYS622	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{14}}$	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{15}}$	34	308
DYS622	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{14}}$	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{13}}$	30	842
DYS622	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{11}}$	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{10}}$	19	1006
DYS622	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{13}}$	$(GAAA)_6(AGAAG)_1\mathbf{(GAAA)_{12}}$	21	1436
DYS625	$(CTTT)_4(TTCT)_1(CTTT)_3(TTT)_1(CTTT)_4(TT)_1$ $(CTTT)_3N_{47}\mathbf{(CTTT)_4}(CT)_1(CTTT)_4(CCTT)_1$ $(CTTT)_3N_{10}(CTTT)_3$	$(CTTT)_4(TTCT)_1(CTTT)_3(TTT)_1(CTTT)_4(TT)_1$ $(CTTT)_3N_{47}\mathbf{(CTTT)_3}(CT)_1(CTTT)_4(CCTT)_1$ $(CTTT)_3N_{10}(CTTT)_3$	38	445
DYS626	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{20}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	42	383
DYS626	$\mathbf{(GAAA)_{16}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{17}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	37	388
DYS626	$\mathbf{(GAAA)_{17}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	35	500
DYS626	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{17}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	38	529
DYS626	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	24	571
DYS626	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	40	612
DYS626	$\mathbf{(GAAA)_{17}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	29	650
DYS626	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{20}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	36	733
DYS626	$\mathbf{(GAAA)_{18}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	41	779
DYS626	$\mathbf{(GAAA)_{20}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	$\mathbf{(GAAA)_{19}}N_{24}(GAAA)_3N_6(GAAA)_5(AAA)_1$ $(GAAA)_2(GAAG)_1(GAAA)_3$	29	901

DYS626	**(GAAA)$_{20}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{21}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	27	953
DYS626	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{20}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	39	1071
DYS626	**(GAAA)$_{17}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{18}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	17	1109
DYS626	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{20}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	33	1112
DYS626	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{20}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	27	1389
DYS626	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{18}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	25	1445
DYS626	**(GAAA)$_{16}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{15}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	25	1514
DYS626	**(GAAA)$_{18}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	19	1530
DYS626	**(GAAA)$_{19}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{20}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	59	1823
DYS626	**(GAAA)$_{22}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	**(GAAA)$_{21}$**N$_{24}$(GAAA)$_3$N$_6$(GAAA)$_5$(AAA)$_1$ (GAAA)$_2$(GAAG)$_1$(GAAA)$_3$	56	1907
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{21}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	25	4
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{22}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{21}$**N$_{81}$(AAGG)$_3$	36	49
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{18}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	29	82
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{18}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	39	112
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{18}$**N$_{81}$(AAGG)$_3$	27	170
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{21}$**N$_{81}$(AAGG)$_3$	34	243
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{18}$**N$_{81}$(AAGG)$_3$	20	256
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	21	328
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	31	331
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{18}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{17}$**N$_{81}$(AAGG)$_3$	37	355
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{21}$**N$_{81}$(AAGG)$_3$	23	496
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{23}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{22}$**N$_{81}$(AAGG)$_3$	35	500
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	36	619
DYS627	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{20}$**N$_{81}$(AAGG)$_3$	(AGAA)$_3$N$_{16}$(AGAG)$_3$**(AAAG)$_{19}$**N$_{81}$(AAGG)$_3$	25	711

DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{19}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{18}}N_{81}(AAGG)_3$	20	742
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{19}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{20}}N_{81}(AAGG)_3$	29	789
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{19}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{20}}N_{81}(AAGG)_3$	Unknown	1310
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{15}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{16}}N_{81}(AAGG)_3$	22	1323
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{18}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{19}}N_{81}(AAGG)_3$	42	1407
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{22}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{23}}N_{81}(AAGG)_3$	17	1416
DYS627	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{19}}N_{81}(AAGG)_3$	$(AGAA)_3N_{16}(AGAG)_3\mathbf{(AAAG)_{20}}N_{81}(AAGG)_3$	54	1860
DYS629	$\mathbf{(TATC)_9}$	$\mathbf{(TATC)_{10}}$	29	609
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{14}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{15}}$	21	46
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{15}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{14}}$	33	53
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{18}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{17}}$	23	96
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{16}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{15}}$	40	255
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{15}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{16}}$	30	448
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{13}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{14}}$	21	478
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{17}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{18}}$	39	501
DYS630	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{14}}$	$(AAAG)_4(AGAG)_3N_{18}\mathbf{(AAAG)_{15}}$	36	665
DYS631	$(AATA)_4(CATA)_1\mathbf{(AATA)_{11}}$	$(AATA)_4(CATA)_1\mathbf{(AATA)_{10}}$	47	347
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{12}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{11}}$	53	35
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{13,14}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{13}}$	33	528
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{13}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{12}}$	36	617
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{12}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{11}}$	26	800
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{12}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{11}}$	29	1674
DYS635	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{11}}$	$(TCTA)_4(TGTA)_2(TCTA)_2(TGTA)_2(TCTA)_2\mathbf{(TCTA)_{12}}$	52	1891
DYS637	$(AAAT)_4\mathbf{(ACAT)_{11}}$	$(AAAT)_4\mathbf{(ACAT)_{10}}$	25	950
DYS638	$\mathbf{(TTTA)_{11}}$	$\mathbf{(TTTA)_{12}}$	56	1677
DYS643	$\mathbf{(AAAT)_{11}}$	$\mathbf{(AAAT)_{12}}$	32	95
DYS643	$\mathbf{(AAAT)_{13}}$	$\mathbf{(AAAT)_{14}}$	19	1697
DYS644	$(TTTTA)_{10}\mathbf{(TTTTA)_7}$	$(TTTTA)_{10}\mathbf{(TTTTA)_8}$	22	487
DYS644	$(TTTTA)_{10}\mathbf{(TTTTA)_6}$	$(TTTTA)_{10}\mathbf{(TTTTA)_5}$	24	681
DYS644	$\mathbf{(TTTTA)_{10}}(TTTA)_1(TTTTA)_{13}$	$\mathbf{(TTTTA)_{11}}(TTTA)_1(TTTTA)_{13}$	21	1667

DYS644	$(TTTTA)_{10}\mathbf{(TTTTA)_6}$	$(TTTTA)_{10}\mathbf{(TTTTA)_7}$	19	1717
DYS644	$(TTTTA)_{10}\mathbf{(TTTTA)_7}$	$(TTTTA)_{10}\mathbf{(TTTTA)_6}$	50	1832
Y-GATA-A10	$\mathbf{(ATCT)_{13}}$	$\mathbf{(ATCT)_{14}}$	41	417
Y-GATA-A10	$\mathbf{(ATCT)_{14}}$	$\mathbf{(ATCT)_{15}}$	35	735
Y-GATA-A10	$\mathbf{(ATCT)_{13}}$	$\mathbf{(ATCT)_{12}}$	24	855
Y-GATA-A10	$\mathbf{(ATCT)_{13}}$	$\mathbf{(ATCT)_{12}}$	46	1252
Y-GATA-A10	$\mathbf{(ATCT)_{13}}$	$\mathbf{(ATCT)_{14}}$	40	1606
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{12}}N_{22}(TAGA)_4$	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{11}}N_{22}(TAGA)_4$	23	251
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{11}}N_{22}(TAGA)_4$	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{12}}N_{22}(TAGA)_4$	19	1004
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{12}}N_{22}(TAGA)_4$	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{11}}N_{22}(TAGA)_4$	29	1051
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{13}}N_{22}(TAGA)_4$	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{12}}N_{22}(TAGA)_4$	42	1411
Y-GATA-H4	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{13}}N_{22}(TAGA)_4$	$(TAGA)_3N_{12}(TAGG)_3\mathbf{(TAGA)_{12}}N_{22}(TAGA)_4$	53	1799

The repeat structure of both the father and son's alleles at the mutated Y-STR are given where possible. In the case of multicopy markers with multiple variable segments within the STR, total repeat numbers or amplicon size is given in the absence of sequence information. The age of the father at the time of the son's birth is given, as is an individual pair reference.

Table S3. Ability of 13 Rapidly-Mutating RM Y-STRs and 17 YFiler Y-STRs to Differentiate between Pairs of Male Relatives by One or More Mutations

Number of Meioses Separating Pair	RM Y-STR Mutations	RM Y-STR Locus Comparisons	Yfiler Mutations	Yfiler Locus Comparisons
1	1	9	0	17
1	1	12	0	17
1	1	12	0	17
1	1	11	0	17
1	1	10	0	17
1	1	12	0	17
1	2	5	0	17
1	0	13	0	17
1	1	12	0	17
1	0	13	0	17
1	0	13	0	17
1	1	13	0	17
1	0	13	0	17
1	0	13	0	17
1	3	11	0	17
1	1	10	0	17
1	0	13	0	17
1	1	10	0	17
1	1	4	0	17
1	1	12	0	17
2	1	12	0	17
2	2	11	0	17
2	1	8	0	17
2	2	11	0	17
2	2	13	0	17
2	1	9	0	17
2	2	13	0	17
2	0	13	0	17
2	0	13	0	17
2	0	13	0	17
2	1	13	0	17
2	0	13	0	17
2	0	13	0	17
2	1	12	0	17
2	3	13	0	17
2	0	13	0	17

2	0	13	0	17
2	0	13	1	17
2	0	13	0	17
2	0	13	0	17
2	3	13	0	17
2	0	12	0	17
2	4	13	0	17
2	1	13	0	17
2	3	13	0	17
2	0	13	0	17
2	0	13	0	17
2	0	13	0	17
2	1	13	0	17
2	0	13	0	17
2	1	10	1	17
2	1	13	0	17
2	1	13	0	17
2	2	3	0	17
3	0	13	0	17
3	0	13	0	17
3	0	13	0	17
3	2	12	0	17
3	2	12	0	17
3	2	13	0	17
3	3	13	0	17
4	0	13	0	17
4	1	13	0	17
4	1	13	0	17
5	1	5	0	17
5	1	13	0	17
5	1	12	0	17
5	2	12	0	17
6	3	9	0	17
6	1	10	0	17
6	1	13	2	17
6	5	12	1	17
6	3	13	0	17
6	4	13	0	17
6	3	13	0	17
6	0	13	0	17
6	2	13	0	17

7	0	13	0	17
7	4	13	1	17
8	3	13	0	17
8	4	13	0	17
8	2	13	0	17
8	0	13	0	17
8	0	13	1	17
8	4	13	0	17
8	2	13	0	17
9	1	13	1	17
10	1	13	0	17
10	4	12	1	17
10	2	13	0	17
10	3	13	0	17
10	3	13	1	17
10	1	12	2	17
10	0	12	1	17
11	6	13	0	17
11	6	13	0	17
11	3	12	0	17
11	4	13	2	17
11	1	13	1	17
11	3	13	0	17
13	4	12	1	17
13	5	13	0	17
20	4	13	0	17
Total	**158**	**1246**	**17**	**1751**
Average	**1.53**	**12.10**	**0.17**	**17**