

**Table S4. Branch defining variants on the E2 phylogeny**

<b>SNP position (GRCh37)</b>	<b>Haplogroup</b>	<b>Defining marker</b>	<b>ISOGG marker</b>	<b>Yfull marker</b>	<b>Ref</b>	<b>Allele Seq</b>	<b>Node</b>
2700266	E2a	M78_eq	CTS58		A	T	node3
6914284	E2a	M78_eq	CTS627		A	G	node3
6943527	E2a	M78_eq	CTS675		A	G	node3
7804308	E2a	M78_eq	PF2108		C	T	node3
7819560	E2a	M78_eq	PF2109		G	A	node3
7921060	E2a	M78_eq	PF2110		G	A	node3
7921827	E2a	M78_eq	PF2111		T	C	node3
7923011	E2a	M78_eq	PF2112		C	T	node3
8232450	E2a	M78_eq	PF2114		C	A	node3
8361073	E2a	M78_eq	PF2115		G	T	node3
8483852	E2a	M78_eq	F1244		C	T	node3
8586933	E2a	M78_eq	PF2117		T	C	node3
8775837	E2a	M78_eq	PF2118		T	A	node3
9898716	E2a	M78_eq	PF2119		G	A	node3
14062488	E2a	M78_eq			A	T	node3
14242950	E2a	M78_eq	CTS2270		G	A	node3
14359692	E2a	M78_eq	CTS2551		G	T	node3
14410669	E2a	M78_eq	CTS2661		C	T	node3
14696327	E2a	M78_eq	CTS3171		C	A	node3
14790675	E2a	M78_eq	CTS3278		A	C	node3
15095592	E2a	M78_eq	CTS3657		C	T	node3
15479586	E2a	M78_eq	CTS4208		T	C	node3
15520497	E2a	M78_eq	CTS4256		T	C	node3
15574144	E2a	M78_eq	L544		T	C	node3
16362850	E2a	M78_eq	CTS5561		A	T	node3
16438097	E2a	M78_eq	CTS5697		C	T	node3
16925303	E2a	M78_eq	CTS6475		G	A	node3
17090474	E2a	M78_eq			G	A	node3
17102625	E2a	M78_eq	CTS6780		T	C	node3
17127989	E2a	M78_eq	CTS6828		G	A	node3
17331551	E2a	M78_eq	CTS7166		C	T	node3
17400322	E2a	M78_eq	CTS7281		C	T	node3
17516070	E2a	M78_eq	L546		C	T	node3
17707097	E2a	M78_eq	CTS7853		T	C	node3
17744738	E2a	M78_eq	CTS7924		A	G	node3
17792632	E2a	M78_eq	CTS8002		C	A	node3
18149476	E2a	M78_eq	CTS8685		T	G	node3
18538216	E2a	M78_eq	CTS8899		C	A	node3
18710064	E2a	M78_eq	CTS9140		C	T	node3
18765146	E2a	M78_eq	CTS9236		T	C	node3
18918010	E2a	M78_eq	CTS9471		A	T	node3
18949452	E2a	M78_eq	CTS9527		C	T	node3
19044813	E2a	M78_eq			T	A	node3
19372895	E2a	M78_eq	L547		C	T	node3
19396726	E2a	M78_eq	CTS10323		T	C	node3
19420177	E2a/J2b4	M78_eq	CTS10357		G	A	node3

19564788	E2a	M78_eq		C	T	node3	
19565462	E2a	M78_eq	CTS10617	C	G	node3	
21036413	E2a	M78_eq	PF2173	C	T	node3	
21117557	E2a	M78_eq	PF1951	C	A	node3	
21188925	E2a	M78_eq	PF2174	A	C	node3	
21369924	E2a	M78_eq	PF2175	G	A	node3	
21645802	E2a	M78_eq	PF2180	G	C	node3	
21775724	E2a	M78_eq	Z1212	T	G	node3	
21860060	E2a	M78_eq	PF2185	G	C	node3	
21893303	E2a	M78	M78	C	T	node3	
22080316	E2a	M78_eq	PF2188	G	A	node3	
22473778	E2a	M78_eq		A	G	node3	
22557921	E2a	M78_eq	PF2195	C	T	node3	
22898839	E2a	M78_eq	CTS11015	T	C	node3	
22940845	E2a	M78_eq	CTS11082	T	A	node3	
22999966	E2a	M78_eq	CTS11191	A	G	node3	
23161406	E2a	M78_eq	CTS11560	G	A	node3	
23499601	E2a	M78_eq	PF2201	T	C	node3	
23973415	E2a	M78_eq	L539	G	A	node3	
2849724	E2a3	Z1902_eq	CTS256	T	C	node4	
22823155	E2a3	Z1902	CTS10890	A	G	node4	
6823099	E2a3-V32	V32_eq	V12	A	G	node5	
7560735	E2a3-V32	V32_eq	FGC7696	G	A	node5	
7674978	E2a3-V32	V32_eq	Z1217	C	T	node5	
8488796	E2a3-V32	V32_eq	FGC7692	Y2863	G	A	node5
8650741	E2a3-V32	V32_eq	FGC2152	Y6741	G	A	node5
9858686	E2a3-V32	V32_eq	FGC2163	Y2868	C	G	node5
14088696	E2a3-V32	V32_eq		G	A	node5	
14202887	E2a3-V32	V32_eq	CTS2163	A	G	node5	
14595380	E2a3-V32	V32_eq	CTS2967	G	A	node5	
14645286	E2a3-V32	V32_eq	CTS3073	G	C	node5	
15040454	E2a3-V32	V32_eq	CTS3578	C	A	node5	
15459213	E2a3-V32	V32_eq	CTS4185	T	C	node5	
15664140	E2a3-V32	V32_eq	CTS4473	C	T	node5	
15738879	E2a3-V32	V32_eq	CTS4622	A	G	node5	
16089433	E2a3-V32	V32_eq	CTS5254.1	G	C	node5	
16260541	E2a3-V32	V32_eq	CTS5412	A	T	node5	
16411884	E2a3-V32	V32_eq	CTS5646	C	T	node5	
16731682	E2a3-V32	V32_eq	CTS6211	A	G	node5	
17138662	E2a3-V32	V32_eq	CTS6839	G	A	node5	
17240229	E2a3-V32	V32_eq	CTS7017	G	T	node5	
17312965	E2a3-V32	V32_eq	CTS7136	C	T	node5	
18613279	E2a3-V32	V32_eq	CTS9007	T	G	node5	
18776848	E2a3-V32	V32_eq	CTS9249	G	A	node5	
18953096	E2a3-V32	V32_eq	FGC2168	Y6743	G	A	node5
19467705	E2a3-V32	V32_eq	CTS10461	T	C	node5	
21706148	E2a3-V32	V32_eq	FGC2158	Y6745	G	A	node5
22035827	E2a3-V32	V32_eq	FGC2155	Y6746	G	A	node5
22459481	E2a3-V32	V32_eq		A	C	node5	
23161549	E2a3-V32	V32_eq	CTS11561	G	T	node5	

23424135	E2a3-V32	V32_eq	CTS12019		T	C	node5
2806928	E2a1'2	Z1919_eq	CTS202		C	G	node7
2807008	E2a1'2	Z1919_eq		Y2478	A	G	node7
15499572	E2a1'2	Z1919	CTS4231		G	A	node7
15502485	E2a1'2	Z1919_eq	CTS4235		T	A	node7
18547277	E2a1'2	Z1919_eq			C	G	node7
6810069	E2a2	V22_eq	CTS508		G	A	node8
6850437	E2a2	V22_eq	AM00909		G	A	node8
6859957	E2a2	V22	V22		T	C	node8
6930150	E2a2	V22_eq	AM00910	Y2521	C	T	node8
7744127	E2a2	V22_eq	FGC7786	Y2523	T	C	node8
9038846	E2a2	V22_eq		Y2526	G	A	node8
9394458	E2a2	V22_eq	FGC7782	Y2528	G	A	node8
14216946	E2a2	V22_eq	AM00882		G	T	node8
14500476	E2a2	V22_eq	AM00885		G	A	node8
15708392	E2a2	V22_eq	AM00887		G	A	node8
16190569	E2a2	V22_eq			C	T	node8
16890322	E2a2	V22_eq	AM00894		G	A	node8
18266842	E2a2	V22_eq	AM00899		C	T	node8
18725131	E2a2	V22_eq	AM00900^	Y2543	G	T	node8
18957059	E2a2	V22_eq	CTS9547		C	G	node8
20814718	E2a2	V22_eq	FGC2671	Y2547	A	C	node8
21620683	E2a2	V22_eq	AM00902	Y8900	T	C	node8
21866497	E2a2	V22_eq	AM00903	Y8901	G	A	node8
23123241	E2a2	V22_eq		Y2554	A	C	node8
23376716	E2a2	V22_eq	AM00905		C	T	node8
24481832	E2a2	V22_eq	FGC2674	Y2557	G	C	node8
8117312	E2a1	L618_eq	PF6786		C	A	node16
8262442	E2a1	L618_eq	PF2215		A	G	node16
14060964	E2a1	L618_eq	CTS1773		G	A	node16
14151247	E2a1	L618_eq	CTS2003		C	G	node16
14370275	E2a1	L618_eq	PF2221		G	A	node16
14528643	E2a1	L618_eq			G	A	node16
14801129	E2a1	L618_eq	CTS3287		A	G	node16
15134772	E2a1	L618_eq	CTS3728		A	C	node16
15229329	E2a1	L618_eq	CTS3860		G	A	node16
15339697	E2a1	L618	L618		T	C	node16
16189080	E2a1	L618_eq	CTS5291		T	G	node16
16345952	E2a1	L618_eq	CTS5527		A	G	node16
16712047	E2a1	L618_eq	CTS6178		C	G	node16
17171194	E2a1	L618_eq	CTS6884		C	T	node16
17356852	E2a1	L618_eq	CTS7217	Y71514	G	C	node16
17396160	E2a1	L618_eq	CTS7273		C	T	node16
18666667	E2a1	L618_eq	CTS9086		G	A	node16
22073053	E2a1	L618_eq	PF2246		G	A	node16
22832818	E2a1	L618_eq	CTS10912		A	T	node16
23298785	E2a1	L618_eq			T	C	node16
23381382	E2a1	L618_eq	CTS11953		T	C	node16
23992777	E2a1	L618_eq	PF2252		G	A	node16
6814246	E2a1-V13	V13_eq	PF2210		T	C	node17

6842263	E2a1-V13	V13	PF2211		G	A	node17
7015122	E2a1-V13	V13_eq	CTS791		A	G	node17
7389526	E2a1-V13	V13_eq	CTS1408		C	A	node17
7675494	E2a1-V13	V13_eq	PF2213		G	A	node17
14231555	E2a1-V13	V13_eq	L542		C	G	node17
14280432	E2a1-V13	V13_eq	CTS2374	Y90916	G	A	node17
15134166	E2a1-V13	V13_eq	CTS3726		C	T	node17
15226328	E2a1-V13	V13_eq	CTS3849.1		T	C	node17
15944985	E2a1-V13	V13_eq	CTS4993		A	C	node17
16229691	E2a1-V13	V13_eq	CTS5371		C	A	node17
16563095	E2a1-V13	V13_eq	CTS5935		G	A	node17
16744509	E2a1-V13	V13_eq	CTS6229		G	A	node17
17416901	E2a1-V13	V13_eq	CTS7315		A	G	node17
17578390	E2a1-V13	V13_eq	CTS7633		C	G	node17
17818487	E2a1-V13	V13_eq	CTS8061		C	A	node17
19246289	E2a1-V13	V13_eq	CTS10084		C	T	node17
21228969	E2a1-V13	V13_eq	FGC11422	Y3865	C	A	node17
14455381	E2a1-Y37092	Y37092_eq			G	A	node18
15924910	E2a1-Y37092	Y37092_eq		Y95144	C	G	node18
16507606	E2a1-Y37092	Y37092_eq	CTS5850		A	G	node18
21549272	E2a1-Y37092	Y37092_eq			C	T	node18
23524057	E2a1-Y37092	Y37092		Y37092	A	G	node18
7306212	E2a1-CTS1273	CTS1273	CTS1273		C	T	node19
8897845	E2a1-CTS1273	CTS1273_eq	PF2217		G	T	node19
16509525	E2a1-CTS1273	CTS1273_eq	CTS5856		G	A	node19
19059502	E2a1-CTS1273	CTS1273_eq	CTS9761		C	T	node19
7681503	E2a1-Z18995	Z18995			T	C	node56
8450465	E2a1-Z18995	Z18995_eq			A	G	node56
15522263	E2a1-Z18995	Z18995_eq			T	C	node56
17363772	E2a1-Z18995	Z18995_eq			G	A	node56
19143456	E2a1-Z18995	Z18995_eq		Y36966	C	T	node56
19317259	E2a1-Z18995	Z18995_eq			T	C	node56
21441926	E2a1-Z18995	Z18995_eq			G	A	node56
21759898	E2a1-Z18995	Z18995_eq			A	C	node56
22566420	E2a1-Z18995	Z18995_eq	Z18995		G	A	node56
8455951	E2a1-Z38334	Z38334	Z38334		C	T	node58
8495138	E2a1-Z38334	Z38334_eq	BY4643		G	A	node58
14356759	E2a1-Z38334	Z38334_eq	BY4642		C	A	node58
15009847	E2a1-Z38334	Z38334_eq	BY4644		A	G	node58
15562691	E2a1-Z38334	Z38334_eq	BY4645		G	A	node58
19497714	E2a1-Z38334	Z38334_eq	BY4648		C	G	node58
21481400	E2a1-Z38334	Z38334_eq	BY4649		G	T	node58
21594825	E2a1-Z38334	Z38334_eq	BY4650		C	T	node58
6679194	E2a1-B415	B415	B415		A	C	GS000013763-ASM
7329580	E2a1-B415	B415_eq	Z37881		G	A	GS000013763-ASM
7945389	E2a1-B415	B415_eq	Z37882		C	T	GS000013763-ASM
8250952	E2a1-B415	B415_eq	Z37883		T	A	GS000013763-ASM
8250958	E2a1-B415	B415_eq			G	A	GS000013763-ASM
14045434	E2a1-B415	B415_eq			C	A	GS000013763-ASM
14217737	E2a1-B415	B415_eq			C	T	GS000013763-ASM

14897811	E2a1-B415	B415_eq		T	A	GS000013763-ASM
15209908	E2a1-B415	B415_eq		C	T	GS000013763-ASM
17843678	E2a1-B415	B415_eq		A	G	GS000013763-ASM
17886925	E2a1-B415	B415_eq		T	C	GS000013763-ASM
18839692	E2a1-B415	B415_eq		T	G	GS000013763-ASM
18983738	E2a1-B415	B415_eq		C	G	GS000013763-ASM
18984635	E2a1-B415	B415_eq		C	G	GS000013763-ASM
19130953	E2a1-B415	B415_eq		C	T	GS000013763-ASM
21567595	E2a1-B415	B415_eq		G	A	GS000013763-ASM
21750693	E2a1-B415	B415_eq		A	G	GS000013763-ASM
22570586	E2a1-B415	B415_eq		T	C	GS000013763-ASM
22710013	E2a1-B415	B415_eq		C	T	GS000013763-ASM
22817124	E2a1-B415	B415_eq		G	T	GS000013763-ASM
23166011	E2a1-B415	B415_eq		A	G	GS000013763-ASM
2843719	E2a1-B932	B932		T	A	GRC15560110
6844449	E2a1-B932	B932_eq		C	T	GRC15560110
6919395	E2a1-B932	B932_eq		T	A	GRC15560110
7879354	E2a1-B932	B932_eq		C	T	GRC15560110
7946865	E2a1-B932	B932_eq		G	A	GRC15560110
8219568	E2a1-B932	B932_eq		A	G	GRC15560110
8244831	E2a1-B932	B932_eq		C	T	GRC15560110
8406954	E2a1-B932	B932_eq		C	T	GRC15560110
8616900	E2a1-B932	B932_eq	V2363.2	G	A	GRC15560110
8743746	E2a1-B932	B932_eq		A	G	GRC15560110
8798231	E2a1-B932	B932_eq		G	A	GRC15560110
9093409	E2a1-B932	B932_eq		A	G	GRC15560110
9398589	E2a1-B932	B932_eq		T	G	GRC15560110
9398607	E2a1-B932	B932_eq		G	T	GRC15560110
9398630	E2a1-B932	B932_eq	A172	G	A	GRC15560110
9641040	E2a1-B932	B932_eq		T	G	GRC15560110
14085140	E2a1-B932	B932_eq		T	A	GRC15560110
14264467	E2a1-B932	B932_eq		C	G	GRC15560110
14407508	E2a1-B932	B932_eq		A	G	GRC15560110
15145806	E2a1-B932	B932_eq		G	T	GRC15560110
15710216	E2a1-B932	B932_eq		G	A	GRC15560110
16224112	E2a1-B932	B932_eq		T	C	GRC15560110
16407891	E2a1-B932	B932_eq		G	A	GRC15560110
16903523	E2a1-B932	B932_eq		C	A	GRC15560110
17049608	E2a1-B932	B932_eq		C	A	GRC15560110
17206250	E2a1-B932	B932_eq		G	A	GRC15560110
17630276	E2a1-B932	B932_eq		T	A	GRC15560110
18663526	E2a1-B932	B932_eq		G	T	GRC15560110
18689376	E2a1-B932	B932_eq		T	C	GRC15560110
18931014	E2a1-B932	B932_eq		A	T	GRC15560110
19238371	E2a1-B932	B932_eq		C	A	GRC15560110
19342017	E2a1-B932	B932_eq		G	T	GRC15560110
19461345	E2a1-B932	B932_eq		C	T	GRC15560110
21204679	E2a1-B932	B932_eq		T	G	GRC15560110
22004994	E2a1-B932	B932_eq		G	C	GRC15560110
22281359	E2a1-B932	B932_eq		T	G	GRC15560110

22680613	E2a1-B932	B932_eq			C	T	GRC15560110
22924752	E2a1-B932	B932_eq			G	A	GRC15560110
23033851	E2a1-B932	B932_eq			T	C	GRC15560110
23072018	E2a1-B932	B932_eq			A	G	GRC15560110
23737770	E2a1-B932	B932_eq			G	A	GRC15560110
23975106	E2a1-B932	B932_eq			G	A	GRC15560110
6922366	E2a1-Y7018	Y7018_eq	Y7022	Y7022	A	G	node40
7047798	E2a1-Y7018	Y7018_eq		Y7017	T	G	node40
8405716	E2a1-Y7018	Y7018	Y7018	Y7018	A	C	node40
9760300	E2a1-Y7018	Y7018_eq		Y7024	C	T	node40
15415045	E2a1-Y7018	Y7018_eq	Y7038	Y7038	T	A	node40
16240321	E2a1-Y7018	Y7018_eq	Y7028	Y7028	C	G	node40
16768120	E2a1-Y7018	Y7018_eq	Y7029	Y7029	G	A	node40
17128987	E2a1-Y7018	Y7018_eq	Y7030	Y7030	C	T	node40
17609135	E2a1-Y7018	Y7018_eq	Y7031	Y7031	T	C	node40
18122091	E2a1-Y7018	Y7018_eq	S3003		C	T	node40
18867536	E2a1-Y7018	Y7018_eq	Y7032	Y7032	C	T	node40
19320827	E2a1-Y7018	Y7018_eq	Y7033	Y7033	G	T	node40
20811692	E2a1-Y7018	Y7018_eq	Y7034	Y7034	G	A	node40
22094962	E2a1-Y7018	Y7018_eq	S3015		G	C	node40
22672188	E2a1-Y7018	Y7018_eq		Y7019	C	T	node40
23138391	E2a1-Y7018	Y7018_eq	Y7020	Y7020	T	C	node40
23331493	E2a1-Y7018	Y7018_eq	Y7039	Y7039	G	C	node40
21742206	E2a1-B2005	B2005			G	A	node50
24366475	E2a1-B2005	B2005_eq			G	A	node50
6967093	E2a1-Y7023	Y7023	Y7023	Y7023	C	T	node43
15375309	E2a1-Y7023	Y7023_eq	Y7026	Y7026	G	A	node43
17941248	E2a1-A783	A783	A783		C	T	node47
20819574	E2a1-A783	A783_eq	A1157	Y31934	G	T	node47
8072035	E2a1-A779	A779	A779		A	C	node48
8863705	E2a1-A779	A779_eq	A780	Y64634	G	A	node48
14045746	E2a1-A779	A779_eq	A781		A	G	node48
15522186	E2a1-A779	A779_eq	BY5856		A	G	node48
19469567	E2a1-A779	A779_eq	A784		C	T	node48
21126057	E2a1-A779	A779_eq	A785		T	G	node48
21132225	E2a1-A779	A779_eq	A1158		G	A	node48
6965314	E2a1-CTS141	CTS141_eq			T	C	NA20510-200-37-ASM
7087086	E2a1-CTS141	CTS141_eq	CTS919		C	T	NA20510-200-37-ASM
7191663	E2a1-CTS141	CTS141_eq	CTS1087		G	A	NA20510-200-37-ASM
7875874	E2a1-CTS141	CTS141_eq			G	A	NA20510-200-37-ASM
8883886	E2a1-CTS141	CTS141_eq			C	T	NA20510-200-37-ASM
9086214	E2a1-CTS141	CTS141_eq			T	C	NA20510-200-37-ASM
14486267	E2a1-CTS141	CTS141_eq	CTS2791		C	T	NA20510-200-37-ASM
14970165	E2a1-CTS141	CTS141_eq			A	G	NA20510-200-37-ASM
15274045	E2a1-CTS141	CTS141_eq	CTS3927		T	C	NA20510-200-37-ASM
16203886	E2a1-CTS141	CTS141_eq			C	G	NA20510-200-37-ASM
16222390	E2a1-CTS141	CTS141_eq			C	G	NA20510-200-37-ASM
16298631	E2a1-CTS141	CTS141_eq			A	T	NA20510-200-37-ASM
17758652	E2a1-CTS141	CTS141_eq			G	T	NA20510-200-37-ASM
17986487	E2a1-CTS141	CTS141_eq			C	A	NA20510-200-37-ASM

18750341	E2a1-CTS141	CTS141_eq	CTS9208		A	C	NA20510-200-37-ASM
20819923	E2a1-CTS141	CTS141_eq			T	C	NA20510-200-37-ASM
21341438	E2a1-CTS141	CTS141_eq			C	A	NA20510-200-37-ASM
21573335	E2a1-CTS141	CTS141_eq			T	G	NA20510-200-37-ASM
23751323	E2a1-CTS141	CTS141_eq			T	C	NA20510-200-37-ASM
7741276	E2a1-BY7443	BY7443	BY7443		C	T	node39
14314417	E2a1-BY7443	BY7443_eq			T	A	node39
24452871	E2a1-BY7443	BY7443_eq			C	T	node39
6886317	E2a1-PR4600	PR4600	Z36876		C	A	GS000016441-ASM
7970947	E2a1-PR4600	PR4600_eq	Z36879		T	G	GS000016441-ASM
8029071	E2a1-PR4600	PR4600_eq	Z36880		T	C	GS000016441-ASM
8090452	E2a1-PR4600	PR4600_eq			G	A	GS000016441-ASM
8203114	E2a1-PR4600	PR4600_eq			C	A	GS000016441-ASM
8403816	E2a1-PR4600	PR4600_eq			G	A	GS000016441-ASM
9831546	E2a1-PR4600	PR4600_eq			C	T	GS000016441-ASM
14003637	E2a1-PR4600	PR4600_eq			A	C	GS000016441-ASM
15449010	E2a1-PR4600	PR4600_eq			A	T	GS000016441-ASM
17007223	E2a1-PR4600	PR4600_eq			A	T	GS000016441-ASM
17614803	E2a1-PR4600	PR4600_eq			A	T	GS000016441-ASM
17977187	E2a1-PR4600	PR4600_eq			G	A	GS000016441-ASM
18614655	E2a1-PR4600	PR4600_eq			G	A	GS000016441-ASM
19106257	E2a1-PR4600	PR4600_eq			G	T	GS000016441-ASM
19332005	E2a1-PR4600	PR4600_eq			A	G	GS000016441-ASM
19376372	E2a1-PR4600	PR4600_eq			T	C	GS000016441-ASM
21826330	E2a1-PR4600	PR4600_eq			T	C	GS000016441-ASM
22582457	E2a1-PR4600	PR4600_eq			C	T	GS000016441-ASM
23132054	E2a1-PR4600	PR4600_eq			G	A	GS000016441-ASM
9419376	E2a1-Y3762	Y3762	S12376		T	C	node20
23627617	E2a1-Y3762	Y3762_eq	SK888	Y3762	C	T	node20
6746212	E2a1-BY4600	BY4600	BY4600		G	A	node27
7520481	E2a1-BY4600	BY4600_eq	BY4606		T	C	node27
14460190	E2a1-BY4600	BY4600_eq	BY4609		T	G	node27
16365269	E2a1-BY4600	BY4600_eq	BY4584		A	C	node27
18781587	E2a1-BY4600	BY4600_eq	BY4602		G	T	node27
19058185	E2a1-BY4600	BY4600_eq	BY4603		G	T	node27
19279012	E2a1-BY4600	BY4600_eq	BY4604		G	T	node27
14150389	E2a1-CTS2001	CTS2001	CTS2001		G	C	node21
16863579	E2a1-CTS2001	CTS2001_eq	CTS6377		A	G	node21
17818226	E2a1-CTS2001	CTS2001_eq	S20250		G	A	node21
17831354	E2a1-CTS2001	CTS2001_eq	CTS8092		G	A	node21
18820189	E2a1-CTS2001	CTS2001_eq	CTS9320		T	C	node21
23746303	E2a1-CTS2001	CTS2001_eq	FGC36575	Y3761	C	A	node21
23981470	E2a1-CTS2001	CTS2001_eq	S26015		G	A	node21
18387345	E2a1-Z17107	Z17107	Z17107		C	T	node25
23410889	E2a1-Z17107	Z17107_eq	BY4425		C	T	node25
14345567	E2a1-BY4281	BY4281	BY4281		T	C	node24
16633337	E2a1-BY4281	BY4281_eq	BY4330		G	A	node24
15420516	E2a1-B2004	B2004			C	T	node23
19312066	E2a1-B2004	B2004_eq			A	T	node23
14211447	E2a1-S7461	S7461_eq	A8612		C	T	node29

17669148	E2a1-S7461	S7461_eq	BY5023	Y19357	C	A	node29
24357328	E2a1-S7461	S7461	S7461		T	C	node29
2876055	E2a1-Y112162	Y112162_eq			C	T	node38
6426817	E2a1-Y112162	Y112162_eq			G	C	node38
6653219	E2a1-Y112162	Y112162_eq			A	G	node38
7533615	E2a1-Y112162	Y112162_eq			T	C	node38
7607707	E2a1-Y112162	Y112162_eq			A	G	node38
7644631	E2a1-Y112162	Y112162_eq			G	A	node38
8148851	E2a1-Y112162	Y112162_eq			G	A	node38
8715673	E2a1-Y112162	Y112162_eq			C	T	node38
9114071	E2a1-Y112162	Y112162_eq			C	T	node38
14193706	E2a1-Y112162	Y112162_eq			G	T	node38
15742846	E2a1-Y112162	Y112162_eq			C	T	node38
15940538	E2a1-Y112162	Y112162_eq			C	T	node38
15950681	E2a1-Y112162	Y112162_eq			G	T	node38
16176234	E2a1-Y112162	Y112162_eq			T	G	node38
16732166	E2a1-Y112162	Y112162_eq			G	A	node38
18598300	E2a1-Y112162	Y112162_eq			T	C	node38
18600204	E2a1-Y112162	Y112162_eq			T	C	node38
19441148	E2a1-Y112162	Y112162_eq			C	A	node38
21333359	E2a1-Y112162	Y112162_eq			T	C	node38
21390128	E2a1-Y112162	Y112162_eq			G	A	node38
22035994	E2a1-Y112162	Y112162_eq			G	A	node38
22899033	E2a1-Y112162	Y112162_eq			C	A	node38
23269255	E2a1-Y112162	Y112162_eq			A	G	node38
23385232	E2a1-Y112162	Y112162_eq			A	G	node38
23729885	E2a1-Y112162	Y112162		Y112162	A	G	node38
24436419	E2a1-Y112162	Y112162_eq			G	A	node38
6766481	E2a1-B1079	B1079			T	C	GRC15560113
7068530	E2a1-B1079	B1079_eq			T	C	GRC15560113
15692508	E2a1-B1079	B1079_eq			T	C	GRC15560113
14198950	E2a1-B1080	B1080			C	T	GRC15560124
14663524	E2a1-B1080	B1080_eq			T	C	GRC15560124
16961635	E2a1-B1080	B1080_eq			T	A	GRC15560124
16961641	E2a1-B1080	B1080_eq			C	T	GRC15560124
19225360	E2a1-B1080	B1080_eq			T	C	GRC15560124
20838284	E2a1-B1080	B1080_eq			T	C	GRC15560124
6705058	E2a1-BY5150	BY5150_eq			C	T	node37
6839180	E2a1-BY5150	BY5150_eq			A	G	node37
6906707	E2a1-BY5150	BY5150_eq			A	G	node37
8206672	E2a1-BY5150	BY5150_eq			A	G	node37
8777942	E2a1-BY5150	BY5150_eq			A	G	node37
8866530	E2a1-BY5150	BY5150_eq			G	A	node37
14095973	E2a1-BY5150	BY5150_eq			G	A	node37
14233702	E2a1-BY5150	BY5150_eq			C	T	node37
14769579	E2a1-BY5150	BY5150_eq			C	A	node37
15174755	E2a1-BY5150	BY5150_eq			G	A	node37
16051558	E2a1-BY5150	BY5150_eq			G	A	node37
16178636	E2a1-BY5150	BY5150_eq			T	G	node37
16350048	E2a1-BY5150	BY5150	BY5150		C	T	node37



16861941	E2a1-BY5150	BY5150_eq		A	G	node37	
17868979	E2a1-BY5150	BY5150_eq		C	A	node37	
17896838	E2a1-BY5150	BY5150_eq		T	C	node37	
18250924	E2a1-BY5150	BY5150_eq	Y35954	C	A	node37	
18250927	E2a1-BY5150	BY5150_eq	Y35955	A	G	node37	
19258100	E2a1-BY5150	BY5150_eq		T	C	node37	
19334206	E2a1-BY5150	BY5150_eq		C	T	node37	
21344039	E2a1-BY5150	BY5150_eq		G	A	node37	
21467277	E2a1-BY5150	BY5150_eq		A	G	node37	
21952618	E2a1-BY5150	BY5150_eq		T	C	node37	
23031597	E2a1-BY5150	BY5150_eq		C	T	node37	
23506588	E2a1-BY5150	BY5150_eq		G	A	node37	
6702612	E2a1-Y28220	Y28220_eq		C	G	node32	
6794929	E2a1-Y28220	Y28220_eq		G	T	node32	
6895930	E2a1-Y28220	Y28220_eq		T	C	node32	
7756476	E2a1-Y28220	Y28220_eq		C	A	node32	
8511690	E2a1-Y28220	Y28220_eq		C	A	node32	
9402421	E2a1-Y28220	Y28220_eq		A	T	node32	
9865938	E2a1-Y28220	Y28220_eq		C	T	node32	
14001146	E2a1-Y28220	Y28220_eq		A	G	node32	
14418231	E2a1-Y28220	Y28220_eq		A	G	node32	
15072445	E2a1-Y28220	Y28220_eq		T	C	node32	
15079287	E2a1-Y28220	Y28220_eq		C	T	node32	
16659660	E2a1-Y28220	Y28220_eq		G	A	node32	
17279571	E2a1-Y28220	Y28220_eq		A	C	node32	
17577643	E2a1-Y28220	Y28220_eq		T	G	node32	
21035448	E2a1-Y28220	Y28220_eq	FGC42973	G	A	node32	
21210293	E2a1-Y28220	Y28220_eq		A	C	node32	
21306341	E2a1-Y28220	Y28220_eq		C	A	node32	
21614242	E2a1-Y28220	Y28220_eq		C	A	node32	
23654401	E2a1-Y28220	Y28220	Y28220	G	A	node32	
24873761	E2a1-Y28220	Y28220_eq		C	T	node32	
21834905	E2a1-B1091	B1091	S2979	G	T	node60	
15626083	E2a1-B476	B476	Z16659	A	C	node61	
7032754	E2a1-Y3183	Y3183	Y3183	Y3183	C	G	node66
18802520	E2a1-Y3183	Y3183_eq	S2972	G	A	node66	
19534963	E2a1-Y3183	Y3183_eq	Z16660	C	G	node66	
17529506	E2a1-Y18676	Y18676	Y18676	Y18676	T	G	node67
18655511	E2a1-Y18676	Y18676_eq	A7135	A	G	node67	
21326389	E2a1-Y18676	Y18676_eq	A7136	G	A	node67	
22302885	E2a1-Y18676	Y18676_eq		Y18674	G	T	node67
14308694	E2a1-Z21357	Z21357	Z21357	G	A	node63	
17872452	E2a1-Z21357	Z21357_eq	S20329	C	T	node63	
19023060	E2a1-Z21357	Z21357_eq	Z21363	T	C	node63	
2877779	E2a1-Y33737	Y33737_eq		G	A	GRC15560154	
6965761	E2a1-Y33737	Y33737_eq		C	A	GRC15560154	
7206470	E2a1-Y33737	Y33737_eq		C	T	GRC15560154	
7716006	E2a1-Y33737	Y33737_eq		C	T	GRC15560154	
8718669	E2a1-Y33737	Y33737_eq		G	T	GRC15560154	
9894847	E2a1-Y33737	Y33737_eq		T	A	GRC15560154	

16912227	E2a1-Y33737	Y33737_eq			T	C	GRC15560154
17924032	E2a1-Y33737	Y33737	Y33737	Y33737	G	A	GRC15560154
18046948	E2a1-Y33737	Y33737_eq			A	C	GRC15560154
18750909	E2a1-Y33737	Y33737_eq	YP1378	YP1378	T	A	GRC15560154
19061573	E2a1-Y33737	Y33737_eq			C	A	GRC15560154
21366581	E2a1-Y33737	Y33737_eq			C	T	GRC15560154
21662394	E2a1-Y33737	Y33737_eq			C	T	GRC15560154
24483843	E2a1-Y33737	Y33737_eq			C	T	GRC15560154
7220584	E2a1-B414	B414	B414		G	A	node64
8102727	E2a1-B414	B414_eq	BY5503	Y19525	A	C	node64
17135027	E2a1-B414	B414_eq	Z38769		G	A	node64
17445266	E2a1-B414	B414_eq	BY5510	Y19528	C	G	node64
21881219	E2a1-B414	B414_eq	BY5520	Y19524	T	C	node64
22697391	E2a1-B414	B414_eq	Z38770		A	G	node64
24400140	E2a1-B414	B414_eq	PF4882		T	C	node64
7709197	E2a1-B1093	B1093			C	T	node65
14192646	E2a1-B1093	B1093_eq			T	C	node65
15519794	E2a1-B1093	B1093_eq			G	C	node65
16811083	E2a1-B1093	B1093_eq			T	G	node65
17663216	E2a1-B1093	B1093_eq			C	T	node65
17971947	E2a1-B1093	B1093_eq			T	A	node65
21488350	E2a1-B1093	B1093_eq			C	A	node65
22584163	E2a1-B1093	B1093_eq			A	G	node65
22959420	E2a1-B1093	B1093_eq			C	T	node65
23443522	E2a1-B1093	B1093_eq			C	A	node65
15994261	E2a1-B409	B409_eq	FGC11451	Y14129	A	G	node68
23067493	E2a1-B409	B409	B409	Y13926	C	T	node68
23240327	E2a1-B409	B409_eq	FGC11457	Y14130	C	T	node68
15994261	E2a1-B409	B409_eq	FGC11451	Y14129	A	G	node68
23067493	E2a1-B409	B409	B409	Y13926	C	T	node68
23240327	E2a1-B409	B409_eq	FGC11457	Y14130	C	T	node68
6668236	E2a1-B412	B412	B412		A	G	GS000035021-ASM
8432791	E2a1-B412	B412_eq			G	T	GS000035021-ASM
14253900	E2a1-B412	B412_eq	Z37873		G	T	GS000035021-ASM
14308970	E2a1-B412	B412_eq	Z37874		A	G	GS000035021-ASM
14453459	E2a1-B412	B412_eq	Z37875		A	G	GS000035021-ASM
15642303	E2a1-B412	B412_eq			T	G	GS000035021-ASM
15868828	E2a1-B412	B412_eq			G	A	GS000035021-ASM
16061470	E2a1-B412	B412_eq			T	C	GS000035021-ASM
17100236	E2a1-B412	B412_eq			G	T	GS000035021-ASM
17236116	E2a1-B412	B412_eq			A	C	GS000035021-ASM
23069249	E2a1-B412	B412_eq			T	G	GS000035021-ASM
24071400	E2a1-B412	B412_eq			A	T	GS000035021-ASM
4567341	E2a1-Z37869	Z37869_eq			C	A	node74
7106942	E2a1-Z37869	Z37869	Z37869		G	A	node74
7609187	E2a1-Z37869	Z37869_eq	Z37870		G	C	node74
7989406	E2a1-Z37869	Z37869_eq	Z37871		T	A	node74
9648097	E2a1-Z37869	Z37869_eq			T	A	node74
14834926	E2a1-Z37869	Z37869_eq			A	G	node74
15610952	E2a1-Z37869	Z37869_eq			C	G	node74

17271514	E2a1-Z37869	Z37869_eq		G	A	node74
17673416	E2a1-Z37869	Z37869_eq		G	C	node74
18173834	E2a1-Z37869	Z37869_eq		C	T	node74
18841774	E2a1-Z37869	Z37869_eq		T	C	node74
20827875	E2a1-Z37869	Z37869_eq		G	A	node74
21185722	E2a1-Z37869	Z37869_eq		A	G	node74
8649703	E2a1-B410	B410		G	A	GS000017206-ASM
16203014	E2a1-B410	B410_eq		T	C	GS000017206-ASM
16220441	E2a1-B410	B410_eq		T	G	GS000017206-ASM
19116617	E2a1-B410	B410_eq		G	C	GS000017206-ASM
23962621	E2a1-B410	B410_eq		T	G	GS000017206-ASM
7290454	E2b'c	Z827	CTS1243	G	C	node80
22557810	E2b'c	Z827_eq	M5323	C	A	node80
2710013	E2c	L335	L335	A	G	node122
7234609	E2c	L335_eq		C	T	node122
7322178	E2c	L335_eq	CTS1303	C	T	node122
7432723	E2c	L335_eq	CTS1483	G	A	node122
7682321	E2c	L335_eq	PF2319	G	A	node122
8132579	E2c	L335_eq	M5086	G	A	node122
8134356	E2c	L335_eq	M5087	C	T	node122
8407831	E2c	L335_eq	PF2321	T	G	node122
8438286	E2c	L335_eq	M5096	C	T	node122
8871735	E2c	L335_eq	M5107	A	G	node122
14109025	E2c	L335_eq	CTS1883	C	A	node122
14253637	E2c	L335_eq		T	G	node122
14320818	E2c	L335_eq	CTS2473	G	A	node122
14541624	E2c	L335_eq	CTS2885	A	C	node122
14817699	E2c	L335_eq	CTS3305	C	A	node122
15085950	E2c	L335_eq	CTS3633	A	C	node122
15384898	E2c	L335_eq	CTS4084	T	G	node122
15452759	E2c	L335_eq	CTS4176	G	A	node122
15512696	E2c	L335_eq	CTS4247	G	A	node122
15879807	E2c	L335_eq	CTS4867	T	C	node122
16223362	E2c	L335_eq	CTS5359	A	T	node122
16390272	E2c	L335_eq	CTS5604	T	A	node122
16899460	E2c	L335_eq	CTS6444	T	G	node122
17091865	E2c	L335_eq	CTS6754	G	A	node122
17118046	E2c	L335_eq	CTS6806	C	T	node122
17190078	E2c	L335_eq	CTS6911	T	C	node122
17210606	E2c	L335_eq	CTS6956	C	T	node122
17218063	E2c	L335_eq	CTS6976	A	C	node122
17235818	E2c	L335_eq	CTS7014	T	C	node122
17486942	E2c	L335_eq	CTS7451	C	G	node122
17670232	E2c	L335_eq	CTS7795	A	G	node122
17670258	E2c	L335_eq	CTS7796	T	C	node122
17707097	E2c	L335_eq	CTS7853	T	C	node122
17951084	E2c	L335_eq		A	G	node122
18128763	E2c	L335_eq	CTS8649	G	A	node122
18416012	E2c	L335_eq	PF2382	T	C	node122
18419547	E2c	L335_eq	PF2383	A	G	node122

18749043	E2c	L335_eq	CTS9204		C	T	node122
19119266	E2c	L335_eq	M5271		G	A	node122
19193159	E2c	L335_eq	M5272		G	A	node122
19453727	E2c	L335_eq	CTS10433		C	G	node122
19475462	E2c	L335_eq	CTS10477		G	A	node122
21066342	E2c	L335_eq	M5285		A	G	node122
21299917	E2c	L335_eq	M5289		G	A	node122
21397600	E2c	L335_eq	M5298		A	C	node122
21508604	E2c	L335_eq	M5042		T	A	node122
21807861	E2c	L335_eq	M5310		C	A	node122
21989906	E2c	L335_eq	M5317		A	T	node122
22023773	E2c	L335_eq	M5319		A	G	node122
22233084	E2c	L335_eq		Y7120	C	T	node122
22751863	E2c	L335_eq	M310.1		C	T	node122
23314799	E2c	L335_eq	M5354		T	G	node122
23367445	E2c	L335_eq	CTS11929		T	C	node122
23385983	E2c	L335_eq	CTS11964		G	A	node122
23809883	E2c	L335_eq	M5050		C	T	node122
23976740	E2c	L335_eq	M5366		C	G	node122
24396804	E2c	L335_eq	M5367		G	A	node122
2849444	E2c-FGC29278	FGC29278_eq	FGC18907	Y10526	A	T	GRC15560109
6619943	E2c-FGC29278	FGC29278_eq			C	T	GRC15560109
6630265	E2c-FGC29278	FGC29278_eq			C	G	GRC15560109
6913925	E2c-FGC29278	FGC29278_eq			A	G	GRC15560109
6980402	E2c-FGC29278	FGC29278_eq	FGC18919	Y10541	A	T	GRC15560109
7031971	E2c-FGC29278	FGC29278_eq	FGC18951		C	T	GRC15560109
7358947	E2c-FGC29278	FGC29278_eq			C	G	GRC15560109
7510439	E2c-FGC29278	FGC29278_eq	FGC18954		G	A	GRC15560109
7717565	E2c-FGC29278	FGC29278_eq	Y11300	Y11300	C	T	GRC15560109
7915107	E2c-FGC29278	FGC29278_eq	FGC18957		G	A	GRC15560109
7953646	E2c-FGC29278	FGC29278_eq	Y10545	Y10545	T	A	GRC15560109
7953668	E2c-FGC29278	FGC29278_eq	Y10546	Y10546	C	G	GRC15560109
8240076	E2c-FGC29278	FGC29278_eq			G	T	GRC15560109
8299572	E2c-FGC29278	FGC29278_eq	FGC18905	Y10547	C	A	GRC15560109
8566810	E2c-FGC29278	FGC29278_eq	Y10528	Y10528	G	A	GRC15560109
8866311	E2c-FGC29278	FGC29278_eq	FGC18927	Y10548	A	T	GRC15560109
8871301	E2c-FGC29278	FGC29278_eq	PF2431		G	A	GRC15560109
9013535	E2c-FGC29278	FGC29278_eq			G	A	GRC15560109
9160926	E2c-FGC29278	FGC29278_eq			C	T	GRC15560109
9436273	E2c-FGC29278	FGC29278_eq			G	A	GRC15560109
9823657	E2c-FGC29278	FGC29278_eq	PF3985		A	T	GRC15560109
9882218	E2c-FGC29278	FGC29278_eq		Y12494	G	A	GRC15560109
9898590	E2c-FGC29278	FGC29278_eq			T	A	GRC15560109
14054728	E2c-FGC29278	FGC29278_eq	FGC18890	Y11575	T	C	GRC15560109
14150016	E2c-FGC29278	FGC29278_eq	FGC18921	Y11577	G	T	GRC15560109
14238224	E2c-FGC29278	FGC29278_eq	PF2436		C	G	GRC15560109
14242423	E2c-FGC29278	FGC29278_eq			A	G	GRC15560109
14388965	E2c-FGC29278	FGC29278_eq			G	A	GRC15560109
14588776	E2c-FGC29278	FGC29278_eq			T	C	GRC15560109
14618515	E2c-FGC29278	FGC29278_eq			A	G	GRC15560109

14624246	E2c-FGC29278 FGC29278_eq	Y17625	Y17625	G	A	GRC15560109
14710005	E2c-FGC29278 FGC29278_eq	Y10549	Y10549	G	T	GRC15560109
14800387	E2c-FGC29278 FGC29278_eq	PF2441		G	C	GRC15560109
14840425	E2c-FGC29278 FGC29278_eq			G	A	GRC15560109
15084879	E2c-FGC29278 FGC29278_eq	FGC18911	Y10550	G	C	GRC15560109
15174468	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
15350388	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
15409320	E2c-FGC29278 FGC29278_eq	FGC18973		A	G	GRC15560109
15874923	E2c-FGC29278 FGC29278_eq			T	C	GRC15560109
16070411	E2c-FGC29278 FGC29278_eq			G	A	GRC15560109
16202753	E2c-FGC29278 FGC29278_eq	FGC18976		T	C	GRC15560109
16203960	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
16488587	E2c-FGC29278 FGC29278_eq	PF2442		G	A	GRC15560109
16641572	E2c-FGC29278 FGC29278_eq			G	C	GRC15560109
16819048	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
16839669	E2c-FGC29278 FGC29278_eq	PH2592	Y11579	C	A	GRC15560109
16918470	E2c-FGC29278 FGC29278_eq			A	T	GRC15560109
17086229	E2c-FGC29278 FGC29278_eq	FGC18982		T	A	GRC15560109
17101076	E2c-FGC29278 FGC29278_eq	FGC18889	Y10532	G	C	GRC15560109
17362456	E2c-FGC29278 FGC29278_eq	FGC18894		C	A	GRC15560109
17403162	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
17553953	E2c-FGC29278 FGC29278_eq			G	A	GRC15560109
17588294	E2c-FGC29278 FGC29278_eq			T	C	GRC15560109
17680974	E2c-FGC29278 FGC29278_eq			G	A	GRC15560109
17710363	E2c-FGC29278 FGC29278_eq	FGC18893	Y10533	C	T	GRC15560109
17791857	E2c-FGC29278 FGC29278_eq			C	T	GRC15560109
17807438	E2c-FGC29278 FGC29278_eq	FGC18989		G	A	GRC15560109
17947776	E2c-FGC29278 FGC29278_eq	FGC18886^	Y10534	G	A	GRC15560109
17963328	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
18017960	E2c-FGC29278 FGC29278_eq			T	C	GRC15560109
18549211	E2c-FGC29278 FGC29278	FGC29278	Y11580	C	T	GRC15560109
18634525	E2c-FGC29278 FGC29278_eq			T	C	GRC15560109
18666182	E2c-FGC29278 FGC29278_eq	FGC18924	Y10552	G	A	GRC15560109
18908841	E2c-FGC29278 FGC29278_eq			G	T	GRC15560109
19225098	E2c-FGC29278 FGC29278_eq	FGC18935	Y10553	A	T	GRC15560109
19395442	E2c-FGC29278 FGC29278_eq	FGC18995	Y104604	G	T	GRC15560109
19414326	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
19534840	E2c-FGC29278 FGC29278_eq			G	A	GRC15560109
21138770	E2c-FGC29278 FGC29278_eq			A	G	GRC15560109
21150479	E2c-FGC29278 FGC29278_eq	FGC18938	Y10554	T	C	GRC15560109
21200368	E2c-FGC29278 FGC29278_eq	FGC18932	Y10555	G	T	GRC15560109
21560394	E2c-FGC29278 FGC29278_eq			T	A	GRC15560109
21564098	E2c-FGC29278 FGC29278_eq	FGC19001		A	T	GRC15560109
22471516	E2c-FGC29278 FGC29278_eq			G	T	GRC15560109
22671180	E2c-FGC29278 FGC29278_eq	FGC18900	Y10535	C	A	GRC15560109
22732140	E2c-FGC29278 FGC29278_eq	FGC18892	Y10536	G	A	GRC15560109
22821793	E2c-FGC29278 FGC29278_eq	FGC19009		C	A	GRC15560109
22832015	E2c-FGC29278 FGC29278_eq		Y10557	T	A	GRC15560109
22920663	E2c-FGC29278 FGC29278_eq	BY9865		G	C	GRC15560109
23203259	E2c-FGC29278 FGC29278_eq	FGC18937	Y10558	A	G	GRC15560109

23364760	E2c-FGC29278	FGC29278_eq	PF2466		T	A	GRC15560109
23514921	E2c-FGC29278	FGC29278_eq	FGC18915	Y10559	A	G	GRC15560109
23540632	E2c-FGC29278	FGC29278_eq	FGC18930	Y10560	A	T	GRC15560109
23607994	E2c-FGC29278	FGC29278_eq			T	G	GRC15560109
23768261	E2c-FGC29278	FGC29278_eq	FGC18923	Y10561	G	A	GRC15560109
23781353	E2c-FGC29278	FGC29278_eq	FGC18916	Y11585	C	A	GRC15560109
23846028	E2c-FGC29278	FGC29278_eq		Y10537	C	T	GRC15560109
23967941	E2c-FGC29278	FGC29278_eq	PF2469		T	C	GRC15560109
23968555	E2c-FGC29278	FGC29278_eq	PF2470		C	T	GRC15560109
24392260	E2c-FGC29278	FGC29278_eq	FGC19015		G	A	GRC15560109
24420690	E2c-FGC29278	FGC29278_eq	FGC18913^	Y10538	A	G	GRC15560109
24483836	E2c-FGC29278	FGC29278_eq	FGC18922	Y10562	C	T	GRC15560109
2723620	E2c-M81	M81_eq	CTS87		C	G	node123
6631579	E2c-M81	M81_eq	M5055		A	T	node123
7317593	E2c-M81	M81_eq	CTS1294	Y83889	C	G	node123
7376480	E2c-M81	M81_eq	M5068		G	A	node123
7612987	E2c-M81	M81_eq	M5075		G	A	node123
7752540	E2c-M81	M81_eq	M5080		T	C	node123
7830010	E2c-M81	M81_eq	M5081		T	C	node123
8415334	E2c-M81	M81_eq	M5093		G	A	node123
8422356	E2c-M81	M81_eq			G	A	node123
8517662	E2c-M81	M81_eq	M5097		C	T	node123
8518796	E2c-M81	M81_eq	M5098		A	C	node123
8540752	E2c-M81	M81_eq	M5099		G	A	node123
8658928	E2c-M81	M81_eq	M5023		C	T	node123
8709331	E2c-M81	M81_eq	M5103		C	T	node123
8726283	E2c-M81	M81_eq	M5104		A	G	node123
8846573	E2c-M81	M81_eq	M5024		C	G	node123
8881572	E2c-M81	M81_eq	M5008		G	A	node123
8899540	E2c-M81	M81_eq			C	T	node123
8900662	E2c-M81	M81_eq	M5110		T	C	node123
9135484	E2c-M81	M81_eq	M5114		T	C	node123
9392061	E2c-M81	M81_eq	FGC22808	Y7121	C	A	node123
14082877	E2c-M81	M81_eq	CTS1819		C	T	node123
14222737	E2c-M81	M81_eq	M5128		C	T	node123
14365288	E2c-M81	M81_eq	CTS2559		C	A	node123
14375437	E2c-M81	M81_eq	CTS2587		G	C	node123
14858228	E2c-M81	M81_eq	CTS3350		T	A	node123
14888783	E2c-M81	M81_eq	M183		A	C	node123
14906675	E2c-M81	M81_eq	CTS3415		G	C	node123
14931308	E2c-M81	M81_eq	CTS3442		T	G	node123
15051814	E2c-M81	M81_eq	CTS3594		T	G	node123
15114328	E2c-M81	M81_eq	CTS3700		C	G	node123
15236994	E2c-M81	M81_eq	CTS3870		A	G	node123
15502732	E2c-M81	M81_eq	CTS4236		G	A	node123
15811495	E2c-M81	M81_eq	M5172		T	G	node123
15978952	E2c-M81	M81_eq	CTS5039		C	T	node123
16079185	E2c-M81	M81_eq	CTS5229		T	C	node123
16367635	E2c-M81	M81_eq	CTS5567		C	T	node123
16533152	E2c-M81	M81_eq	PF2521^		T	A	node123

16534130	E2c-M81	M81_eq	CTS5883	A	G	node123	
16586893	E2c-M81	M81_eq	CTS5974	T	C	node123	
16772143	E2c-M81	M81_eq		G	T	node123	
16962383	E2c-M81	M81_eq		T	C	node123	
17210201	E2c-M81	M81_eq	CTS6955	C	T	node123	
17308332	E2c-M81	M81_eq	CTS7132	T	C	node123	
17841654	E2c-M81	M81_eq	CTS8121	G	T	node123	
18068338	E2c-M81	M81_eq	CTS8527	C	T	node123	
18243339	E2c-M81	M81_eq	CTS8854	T	A	node123	
19323263	E2c-M81	M81_eq	CTS10196	C	T	node123	
19396045	E2c-M81	M81_eq	CTS10321	C	T	node123	
19482455	E2c-M81	M81_eq	M5281	A	G	node123	
21131447	E2c-M81	M81_eq	M5286	G	C	node123	
21437042	E2c-M81	M81_eq	M5300	G	T	node123	
21566639	E2c-M81	M81_eq	M5303	C	T	node123	
21785013	E2c-M81	M81_eq	M5306	A	T	node123	
21785697	E2c-M81	M81_eq	M5307	T	C	node123	
21892572	E2c-M81	M81	M81	C	T	node123	
22076595	E2c-M81	M81_eq	M5320	G	T	node123	
22280867	E2c-M81	M81_eq		G	T	node123	
22477249	E2c-M81	M81_eq		G	T	node123	
22566659	E2c-M81	M81_eq	M5324	G	T	node123	
22978109	E2c-M81	M81_eq	CTS11147	G	A	node123	
23074213	E2c-M81	M81_eq	CTS11332	C	T	node123	
23074218	E2c-M81	M81_eq	CTS11333	G	A	node123	
23124284	E2c-M81	M81_eq	CTS11467	G	T	node123	
23583756	E2c-M81	M81_eq	M5358	G	A	node123	
2749703	E2c-B918	B918		T	G	GRC15560168	
8433723	E2c-B918	B918_eq		G	A	GRC15560168	
8679581	E2c-B918	B918_eq		C	T	GRC15560168	
8777661	E2c-B918	B918_eq		T	C	GRC15560168	
8797520	E2c-B918	B918_eq		G	A	GRC15560168	
8872426	E2c-B918	B918_eq		A	G	GRC15560168	
8872436	E2c-B918	B918_eq	Z32507	A	G	GRC15560168	
9125176	E2c-B918	B918_eq	A5604	G	T	GRC15560168	
14069606	E2c-B918	B918_eq		C	T	GRC15560168	
14234456	E2c-B918	B918_eq	Y32602	Y32602	G	A	GRC15560168
16766184	E2c-B918	B918_eq	MZ64	T	G	GRC15560168	
16844918	E2c-B918	B918_eq		G	A	GRC15560168	
16910833	E2c-B918	B918_eq		T	G	GRC15560168	
18076715	E2c-B918	B918_eq		A	T	GRC15560168	
19080864	E2c-B918	B918_eq		C	G	GRC15560168	
22527357	E2c-B918	B918_eq	Z38186	C	A	GRC15560168	
23535412	E2c-B918	B918_eq		A	C	GRC15560168	
23558091	E2c-B918	B918_eq		A	C	GRC15560168	
23599812	E2c-B918	B918_eq		T	C	GRC15560168	
23809592	E2c-B918	B918_eq		C	T	GRC15560168	
16716119	E2c-M5284	M5284_eq	CTS6185	C	A	node124	
21064067	E2c-M5284	M5284	M5284	T	A	node124	
8425981	E2c-B920	B920	PF6799	G	A	GRC15560142	

8659092	E2c-B920	B920_eq			A	C	GRC15560142
9380729	E2c-B920	B920_eq			G	A	GRC15560142
16857347	E2c-B920	B920_eq			G	A	GRC15560142
17345606	E2c-B920	B920_eq	PF6794		A	G	GRC15560142
17663821	E2c-B920	B920_eq			G	A	GRC15560142
18556053	E2c-B920	B920_eq			C	G	GRC15560142
18685251	E2c-B920	B920_eq			G	A	GRC15560142
21772850	E2c-B920	B920_eq	MZ1	Y12245	C	T	GRC15560142
22859629	E2c-B920	B920_eq			C	T	GRC15560142
23125341	E2c-B920	B920_eq	PF6789		C	T	GRC15560142
6732918	E2c-B919	B919			C	T	GRC15560144
6857628	E2c-B919	B9190_eq			C	A	GRC15560144
8247895	E2c-B919	B9190_eq			C	T	GRC15560144
15661762	E2c-B919	B9190_eq	Z6341		C	T	GRC15560144
16277530	E2c-B919	B9190_eq			G	A	GRC15560144
16695746	E2c-B919	B9190_eq	Y8829	Y8829	G	A	GRC15560144
18021817	E2c-B919	B9190_eq			G	A	GRC15560144
18068713	E2c-B919	B9190_eq			T	C	GRC15560144
18170107	E2c-B919	B9190_eq			C	A	GRC15560144
23799307	E2c-B919	B9190_eq			C	A	GRC15560144
6953603	E2b	CTS8288_eq	CTS689		C	T	node81
7729622	E2b	CTS8288_eq	PF1961		G	A	node81
8659100	E2b	CTS8288_eq	M2427		G	A	node81
9795609	E2b	CTS8288_eq	PF1965		A	C	node81
14523391	E2b	CTS8288_eq			G	A	node81
14941989	E2b	CTS8288_eq	CTS3457		G	A	node81
16313785	E2b	CTS8288_eq	CTS5487		C	T	node81
16566193	E2b	CTS8288_eq			A	C	node81
16948834	E2b	CTS8288_eq	CTS6504		G	A	node81
17077753	E2b	CTS8288_eq	CTS6729		C	G	node81
17223070	E2b	CTS8288_eq			G	A	node81
17749464	E2b	CTS8288_eq			C	T	node81
17767976	E2b	CTS8288_eq			T	A	node81
17865060	E2b	CTS8288_eq	CTS8182		C	T	node81
17919115	E2b	CTS8288			G	A	node81
18065432	E2b	CTS8288_eq			A	C	node81
18203565	E2b	CTS8288_eq	CTS8790		T	C	node81
18719198	E2b	CTS8288_eq	Y19289		G	A	node81
19260655	E2b	CTS8288_eq			T	C	node81
19379842	E2b	CTS8288_eq	CTS10298		T	C	node81
21797330	E2b	CTS8288_eq	PF1997		C	T	node81
22272070	E2b	CTS8288_eq			G	A	node81
22460740	E2b	CTS8288_eq			T	G	node81
23190691	E2b	CTS8288_eq			G	A	node81
23268660	E2b	CTS8288_eq	CTS11781		G	C	node81
23268923	E2b	CTS8288_eq			T	C	node81
23475853	E2b	CTS8288_eq	PF2009		T	G	node81
7828663	E2b1'2	PF1962(M123_	PF1962		A	C	node82
2774433	E2b2	Y20220	Y20220		G	A	node83
2810968	E2b2	Y20220_eq	PF2025		A	G	node83



7418920	E2b2	Y20220_eq	Y20221		C	T	node83
7736041	E2b2	Y20220_eq	PF6775		A	G	node83
8194642	E2b2	Y20220_eq	PF2032		T	C	node83
8229002	E2b2	Y20220_eq	PF2033		A	G	node83
8486108	E2b2	Y20220_eq	Y21036	Y21036	C	T	node83
8684748	E2b2	Y20220_eq	PF2034		G	C	node83
8820769	E2b2	Y20220_eq	PF2035		A	G	node83
9376274	E2b2	Y20220_eq			T	C	node83
9418110	E2b2	Y20220_eq	PF2036		C	G	node83
9906211	E2b2	Y20220_eq	Y21034	Y21034	C	A	node83
14139071	E2b2	Y20220_eq	Y21022	Y21022	A	G	node83
14209510	E2b2	Y20220_eq	PF2044		G	A	node83
14296205	E2b2	Y20220_eq	PF2045		T	C	node83
14419252	E2b2	Y20220_eq	PF2048	Y49521	T	C	node83
14661971	E2b2	Y20220_eq			C	T	node83
15736492	E2b2	Y20220_eq	PF2054		T	C	node83
15772590	E2b2	Y20220_eq	PF2055		G	T	node83
15932523	E2b2	Y20220_eq	Y21038	Y21038	A	G	node83
15954647	E2b2	Y20220_eq	PF1977		T	C	node83
16086734	E2b2	Y20220_eq	Y20222		A	G	node83
16188682	E2b2	Y20220_eq	Y20229	Y20229	A	T	node83
16260821	E2b2	Y20220_eq	PF2056		T	C	node83
16530226	E2b2	Y20220_eq	PF2058		T	C	node83
16549811	E2b2	Y20220_eq	Y21027	Y21027	A	T	node83
16667766	E2b2	Y20220_eq	Z21473		C	T	node83
16733169	E2b2	Y20220_eq	Y20225		A	C	node83
16966780	E2b2	Y20220_eq	Y20226		G	A	node83
16969680	E2b2	Y20220_eq	Y20223		G	C	node83
17056345	E2b2	Y20220_eq	Y21023	Y21023	T	C	node83
17167342	E2b2	Y20220_eq	PF6767		C	A	node83
17195862	E2b2	Y20220_eq	Y20227		G	T	node83
17435705	E2b2	Y20220_eq	PF2063		G	A	node83
17560956	E2b2	Y20220_eq	Z21472		A	C	node83
17851098	E2b2	Y20220_eq	Y20224		G	A	node83
18069775	E2b2	Y20220_eq	PF2066		T	C	node83
18126522	E2b2	Y20220_eq	M7866		T	A	node83
18414945	E2b2	Y20220_eq	PF2069		G	T	node83
18778392	E2b2	Y20220_eq	Y21024	Y21024	A	T	node83
19068175	E2b2	Y20220_eq	Z21474		G	A	node83
19349586	E2b2	Y20220_eq	PF6765		G	A	node83
21117309	E2b2	Y20220_eq	Y21029	Y21029	G	T	node83
21178949	E2b2	Y20220_eq	PF2076		T	C	node83
21188969	E2b2	Y20220_eq	Y21025	Y21025	A	C	node83
21811407	E2b2	Y20220_eq	PF6772		C	T	node83
22165642	E2b2	Y20220_eq	Y20228		A	T	node83
22176597	E2b2	Y20220_eq	PF2081		A	C	node83
22565799	E2b2	Y20220_eq	PF2084		C	A	node83
22806626	E2b2	Y20220_eq	Y21026	Y21026	G	C	node83
23130241	E2b2	Y20220_eq	PF2085		G	A	node83
23271235	E2b2	Y20220_eq	Y21031	Y21031	C	A	node83

23392787	E2b2	Y20220_eq	Y21032	Y21032	T	A	node83
24363487	E2b2	Y20220_eq	Y21033	Y21033	A	G	node83
2723746	E2b2-PF2024	PF2024	PF2024		A	G	node84
6643355	E2b2-PF2024	PF2024_eq	PF2026		T	A	node84
6893193	E2b2-PF2024	PF2024_eq	PF2027		T	A	node84
6963904	E2b2-PF2024	PF2024_eq	YP5412	YP5412	T	A	node84
7197996	E2b2-PF2024	PF2024_eq	Y21116	Y21116	T	C	node84
7634867	E2b2-PF2024	PF2024_eq	PF2028		G	A	node84
8060181	E2b2-PF2024	PF2024_eq	PF2031		C	T	node84
8820639	E2b2-PF2024	PF2024_eq	Y22941	Y22941	C	T	node84
9867302	E2b2-PF2024	PF2024_eq			T	C	node84
14048328	E2b2-PF2024	PF2024_eq			T	A	node84
14117639	E2b2-PF2024	PF2024_eq	PF2042		A	G	node84
14333998	E2b2-PF2024	PF2024_eq	PF2046		A	G	node84
14662070	E2b2-PF2024	PF2024_eq	Z21471		A	G	node84
15094816	E2b2-PF2024	PF2024_eq	PF2051		G	T	node84
15180558	E2b2-PF2024	PF2024_eq	Y21126	Y21126	G	T	node84
15338583	E2b2-PF2024	PF2024_eq	PF1974		C	T	node84
15384497	E2b2-PF2024	PF2024_eq	FGC26459	YP2975	G	A	node84
15554094	E2b2-PF2024	PF2024_eq	PF2053		T	C	node84
15781991	E2b2-PF2024	PF2024_eq			C	T	node84
16085748	E2b2-PF2024	PF2024_eq	PF1978		C	T	node84
16343521	E2b2-PF2024	PF2024_eq	PF1980		A	G	node84
16575666	E2b2-PF2024	PF2024_eq	PF6768		G	A	node84
16637203	E2b2-PF2024	PF2024_eq			T	C	node84
16754945	E2b2-PF2024	PF2024_eq	PF2060		C	T	node84
16948519	E2b2-PF2024	PF2024_eq	Y21120	Y21120	T	G	node84
17191409	E2b2-PF2024	PF2024_eq	Y23106	Y23106	A	G	node84
17518009	E2b2-PF2024	PF2024_eq	PF2064		A	T	node84
17675730	E2b2-PF2024	PF2024_eq	Y21121	Y21121	G	A	node84
17908419	E2b2-PF2024	PF2024_eq	Y21122	Y21122	G	A	node84
17914171	E2b2-PF2024	PF2024_eq	Y22939	Y22939	C	T	node84
17979755	E2b2-PF2024	PF2024_eq	PF1987	Y72784	G	C	node84
18256786	E2b2-PF2024	PF2024_eq	PF2068		G	C	node84
18609272	E2b2-PF2024	PF2024_eq	PF2070		C	T	node84
18833628	E2b2-PF2024	PF2024_eq	PF6766		A	G	node84
19193611	E2b2-PF2024	PF2024_eq	PF2072		G	C	node84
19342007	E2b2-PF2024	PF2024_eq	Y21028	Y21028	C	T	node84
19349520	E2b2-PF2024	PF2024_eq	PF2073		A	G	node84
19400868	E2b2-PF2024	PF2024_eq	PF2074		A	T	node84
21611175	E2b2-PF2024	PF2024_eq	PF2079		T	A	node84
21691570	E2b2-PF2024	PF2024_eq			A	T	node84
22199833	E2b2-PF2024	PF2024_eq	PF2082		A	G	node84
22467562	E2b2-PF2024	PF2024_eq			G	T	node84
22612722	E2b2-PF2024	PF2024_eq	Y22935	Y22935	A	G	node84
22669333	E2b2-PF2024	PF2024_eq	Y21937	Y21937	T	C	node84
22709726	E2b2-PF2024	PF2024_eq	Y21125	Y21125	C	T	node84
23387361	E2b2-PF2024	PF2024_eq	PF6764		T	G	node84
23541722	E2b2-PF2024	PF2024_eq	Y22937	Y22937	T	C	node84
23800823	E2b2-PF2024	PF2024_eq			G	C	node84

23964007	E2b2-PF2024	PF2024_eq	Y22936	Y22936	G	A	node84
23992481	E2b2-PF2024	PF2024_eq	PF2087		G	A	node84
24485070	E2b2-PF2024	PF2024_eq	Y22938	Y22938	G	A	node84
24507713	E2b2-PF2024	PF2024_eq			A	G	node84
2742557	E2b2-Y36791	Y36791		Y36791	A	G	node86
6700093	E2b2-Y36791	Y36791_eq		Y36793	G	A	node86
7349830	E2b2-Y36791	Y36791_eq		Y35935	G	A	node86
7529156	E2b2-Y36791	Y36791_eq		Y36795	G	A	node86
7597627	E2b2-Y36791	Y36791_eq		Y36796	G	A	node86
8327400	E2b2-Y36791	Y36791_eq		Y35936	C	T	node86
8397324	E2b2-Y36791	Y36791_eq		Y36797	C	T	node86
8452792	E2b2-Y36791	Y36791_eq		Y36798	A	G	node86
8659429	E2b2-Y36791	Y36791_eq		Y36799	G	A	node86
8705404	E2b2-Y36791	Y36791_eq	Z35323	Y36800	A	T	node86
9426485	E2b2-Y36791	Y36791_eq		Y36804	G	T	node86
9835814	E2b2-Y36791	Y36791_eq		Y36805	G	A	node86
14094258	E2b2-Y36791	Y36791_eq		Y35937	C	G	node86
14200167	E2b2-Y36791	Y36791_eq		Y36806	C	G	node86
14418646	E2b2-Y36791	Y36791_eq		Y36807	G	C	node86
14551328	E2b2-Y36791	Y36791_eq		Y36808	C	T	node86
14996272	E2b2-Y36791	Y36791_eq		Y35940	C	T	node86
15438622	E2b2-Y36791	Y36791_eq		Y35941	C	G	node86
15819896	E2b2-Y36791	Y36791_eq		Y35942	C	G	node86
16345709	E2b2-Y36791	Y36791_eq		Y35943	T	C	node86
16441973	E2b2-Y36791	Y36791_eq		Y69906	A	C	node86
16635201	E2b2-Y36791	Y36791_eq		Y36809	C	T	node86
16744706	E2b2-Y36791	Y36791_eq		Y36810	C	A	node86
17166353	E2b2-Y36791	Y36791_eq		Y35945	C	G	node86
17177623	E2b2-Y36791	Y36791_eq		Y35946	G	A	node86
17390155	E2b2-Y36791	Y36791_eq		Y35947	A	C	node86
17496019	E2b2-Y36791	Y36791_eq		Y36813	T	A	node86
17496125	E2b2-Y36791	Y36791_eq		Y35948	G	C	node86
17753404	E2b2-Y36791	Y36791_eq		Y36814	T	C	node86
18069210	E2b2-Y36791	Y36791_eq		Y35949	A	T	node86
18865260	E2b2-Y36791	Y36791_eq		Y36816	G	A	node86
18941331	E2b2-Y36791	Y36791_eq		Y36818	A	G	node86
18983599	E2b2-Y36791	Y36791_eq		Y36819	T	A	node86
18993790	E2b2-Y36791	Y36791_eq		Y36820	T	C	node86
19039041	E2b2-Y36791	Y36791_eq		Y36821	T	A	node86
19224128	E2b2-Y36791	Y36791_eq		Y36822	C	T	node86
19551337	E2b2-Y36791	Y36791_eq		Y36823	T	C	node86
21874050	E2b2-Y36791	Y36791_eq		Y36824	C	G	node86
22109676	E2b2-Y36791	Y36791_eq		Y36825	G	A	node86
22278000	E2b2-Y36791	Y36791_eq			A	G	node86
22596727	E2b2-Y36791	Y36791_eq		Y35950	C	T	node86
23207770	E2b2-Y36791	Y36791_eq		Y36826	A	G	node86
23261765	E2b2-Y36791	Y36791_eq		Y36827	C	G	node86
23436553	E2b2-Y36791	Y36791_eq		Y36828	T	C	node86
23637265	E2b2-Y36791	Y36791_eq		Y35951	G	A	node86
24440117	E2b2-Y36791	Y36791_eq		Y36829	G	A	node86

6945703	E2b1	M123_eq	CTS677		G	A	node91
8700450	E2b1	M123_eq	L857		T	G	node91
14006096	E2b1	M123_eq	CTS1652		G	T	node91
15154024	E2b1	M123_eq			T	A	node91
16874320	E2b1	M123_eq	CTS6404		A	G	node91
18976881	E2b1	M123_eq	CTS9588		A	G	node91
21688177	E2b1	M123_eq	PF2021		A	G	node91
21764586	E2b1	M123	M123		C	T	node91
21782311	E2b1	M123_eq			C	T	node91
7244494	E2b1-Y84586	Y84586_eq			C	A	node120
7657928	E2b1-Y84586	Y84586	Y84586		A	G	node120
7900128	E2b1-Y84586	Y84586_eq			G	T	node120
7960444	E2b1-Y84586	Y84586_eq			C	A	node120
8113392	E2b1-Y84586	Y84586_eq			C	T	node120
8465515	E2b1-Y84586	Y84586_eq			C	A	node120
8760015	E2b1-Y84586	Y84586_eq	Y87923		G	A	node120
9418388	E2b1-Y84586	Y84586_eq			A	C	node120
14292884	E2b1-Y84586	Y84586_eq			G	A	node120
14337019	E2b1-Y84586	Y84586_eq			C	T	node120
14967826	E2b1-Y84586	Y84586_eq			C	G	node120
15113408	E2b1-Y84586	Y84586_eq	Y93055		T	A	node120
15152796	E2b1-Y84586	Y84586_eq			A	T	node120
15346630	E2b1-Y84586	Y84586_eq			G	C	node120
15776478	E2b1-Y84586	Y84586_eq	Y94753		C	T	node120
16402270	E2b1-Y84586	Y84586_eq	Y96227		G	T	node120
16434475	E2b1-Y84586	Y84586_eq			C	T	node120
16763058	E2b1-Y84586	Y84586_eq			T	C	node120
16970507	E2b1-Y84586	Y84586_eq			G	T	node120
17099162	E2b1-Y84586	Y84586_eq			A	T	node120
17272479	E2b1-Y84586	Y84586_eq	Y31993		A	C	node120
17557290	E2b1-Y84586	Y84586_eq	Y99525		G	A	node120
17793078	E2b1-Y84586	Y84586_eq	Y31994		T	A	node120
17793112	E2b1-Y84586	Y84586_eq	Y31999		A	C	node120
17794514	E2b1-Y84586	Y84586_eq			T	C	node120
17799707	E2b1-Y84586	Y84586_eq			G	A	node120
17894447	E2b1-Y84586	Y84586_eq			G	A	node120
18091735	E2b1-Y84586	Y84586_eq			G	A	node120
18403464	E2b1-Y84586	Y84586_eq	Y30966		C	A	node120
19040083	E2b1-Y84586	Y84586_eq	Y103443		G	C	node120
19144069	E2b1-Y84586	Y84586_eq	Y103789		T	C	node120
19258310	E2b1-Y84586	Y84586_eq			A	G	node120
21066317	E2b1-Y84586	Y84586_eq			C	T	node120
21141721	E2b1-Y84586	Y84586_eq			T	C	node120
21372572	E2b1-Y84586	Y84586_eq			C	T	node120
21434643	E2b1-Y84586	Y84586_eq	Y106466		A	C	node120
21570811	E2b1-Y84586	Y84586_eq			C	T	node120
22272439	E2b1-Y84586	Y84586_eq			G	T	node120
22471046	E2b1-Y84586	Y84586_eq			G	A	node120
22904781	E2b1-Y84586	Y84586_eq			A	G	node120
23069325	E2b1-Y84586	Y84586_eq			T	C	node120

23140754	E2b1-Y84586	Y84586_eq		C	A	node120
23554306	E2b1-Y84586	Y84586_eq	Y31991	G	A	node120
23793882	E2b1-Y84586	Y84586_eq		G	T	node120
23960182	E2b1-Y84586	Y84586_eq		A	G	node120
6630157	E2b1-Y86751	Y86751_eq		T	C	node121
8406245	E2b1-Y86751	Y86751	Y86751	G	T	node121
8407097	E2b1-Y86751	Y86751_eq		A	C	node121
8827558	E2b1-Y86751	Y86751_eq	Y88106	T	C	node121
14002960	E2b1-Y86751	Y86751_eq		T	C	node121
14330331	E2b1-Y86751	Y86751_eq	Y91092	T	C	node121
14853712	E2b1-Y86751	Y86751_eq	Y92352	G	A	node121
15057763	E2b1-Y86751	Y86751_eq	Y92917	A	T	node121
15134263	E2b1-Y86751	Y86751_eq	Y93107	G	A	node121
15349061	E2b1-Y86751	Y86751_eq	Y93599	T	C	node121
15387719	E2b1-Y86751	Y86751_eq	Y93677	C	T	node121
15902374	E2b1-Y86751	Y86751_eq	Y95076	C	T	node121
16367054	E2b1-Y86751	Y86751_eq	Y96109	C	T	node121
16650216	E2b1-Y86751	Y86751_eq	Y96933	G	C	node121
16762322	E2b1-Y86751	Y86751_eq	Y97216	A	C	node121
16767893	E2b1-Y86751	Y86751_eq	Y97235	G	A	node121
16794986	E2b1-Y86751	Y86751_eq	Y97321	G	A	node121
16869881	E2b1-Y86751	Y86751_eq	Y97556	T	G	node121
17008272	E2b1-Y86751	Y86751_eq	Y97929	C	T	node121
17356558	E2b1-Y86751	Y86751_eq	Y98906	A	T	node121
17424684	E2b1-Y86751	Y86751_eq	Y99118	T	G	node121
18675859	E2b1-Y86751	Y86751_eq	Y102401	C	T	node121
18838011	E2b1-Y86751	Y86751_eq	Y102823	A	G	node121
19290151	E2b1-Y86751	Y86751_eq	Y104290	A	G	node121
19322170	E2b1-Y86751	Y86751_eq	Y104405	T	C	node121
21201003	E2b1-Y86751	Y86751_eq	Y105689	C	G	node121
21300980	E2b1-Y86751	Y86751_eq	Y106027	G	A	node121
21481222	E2b1-Y86751	Y86751_eq	Y106618	A	G	node121
21692575	E2b1-Y86751	Y86751_eq	Y107230	C	G	node121
21756320	E2b1-Y86751	Y86751_eq	Y107412	G	A	node121
22018433	E2b1-Y86751	Y86751_eq	Y108148	T	C	node121
22156782	E2b1-Y86751	Y86751_eq	Y108527	G	T	node121
23329442	E2b1-Y86751	Y86751_eq	Y111294	C	T	node121
23804739	E2b1-Y86751	Y86751_eq	Y112359	T	C	node121
7591715	E2b1-Y78188	Y78188_eq		A	G	GS000016217-ASM
7914226	E2b1-Y78188	Y78188_eq		C	T	GS000016217-ASM
9166223	E2b1-Y78188	Y78188_eq		G	A	GS000016217-ASM
14076273	E2b1-Y78188	Y78188_eq		C	T	GS000016217-ASM
16195907	E2b1-Y78188	Y78188_eq		A	G	GS000016217-ASM
16409551	E2b1-Y78188	Y78188_eq		A	C	GS000016217-ASM
17948896	E2b1-Y78188	Y78188_eq		G	T	GS000016217-ASM
18839348	E2b1-Y78188	Y78188_eq		A	C	GS000016217-ASM
21334468	E2b1-Y78188	Y78188_eq		G	T	GS000016217-ASM
21862684	E2b1-Y78188	Y78188_eq		A	C	GS000016217-ASM
22549642	E2b1-Y78188	Y78188	Y78188	T	C	GS000016217-ASM
23246508	E2b1-Y78188	Y78188_eq		C	T	GS000016217-ASM

23472814	E2b1-Y78188	Y78188_eq			A	G	GS000016217-ASM
7283442	E2b1-M43	M34_eq	CTS1229		C	T	node92
7533955	E2b1-M43	M34_eq			A	G	node92
8051123	E2b1-M43	M34_eq	L797		T	C	node92
8240479	E2b1-M43	M34_eq	L787		T	C	node92
8704571	E2b1-M43	M34_eq	PF2018		C	T	node92
15737401	E2b1-M43	M34_eq			G	A	node92
16508155	E2b1-M43	M34_eq			T	A	node92
17851988	E2b1-M43	M34_eq			T	G	node92
19202083	E2b1-M43	M34_eq			C	G	node92
21451978	E2b1-M43	M34_eq	PF2020		C	T	node92
21740716	E2b1-M43	M34	M34		G	T	node92
22192088	E2b1-M43	M34_eq			T	C	node92
22278334	E2b1-M43	M34_eq			T	C	node92
22681905	E2b1-M43	M34_eq	CTS10656		C	T	node92
22890739	E2b1-M43	M34_eq	CTS11004		T	G	node92
23405883	E2b1-M43	M34_eq			G	T	node92
6661728	E2b1-Z841	Z841	Z841		C	T	node108
7140018	E2b1-Z841	Z841_eq		Y2933	T	C	node108
7796158	E2b1-Z841	Z841_eq	Y2934	Y2934	G	A	node108
14035741	E2b1-Z841	Z841_eq			C	T	node108
14044827	E2b1-Z841	Z841_eq	CTS1744		C	T	node108
14116330	E2b1-Z841	Z841_eq	CTS1901		G	A	node108
14266783	E2b1-Z841	Z841_eq			C	T	node108
14346654	E2b1-Z841	Z841_eq	CTS2525		G	T	node108
14370591	E2b1-Z841	Z841_eq		Y2942	T	C	node108
15011918	E2b1-Z841	Z841_eq	CTS3559		C	T	node108
16837626	E2b1-Z841	Z841_eq		Y2943	A	C	node108
17202886	E2b1-Z841	Z841_eq	CTS6938		G	C	node108
19159383	E2b1-Z841	Z841_eq		Y4178	G	A	node108
21494124	E2b1-Z841	Z841_eq	Y15502	Y15502	T	A	node108
21865453	E2b1-Z841	Z841_eq		Y2961	G	A	node108
2871919	E2b1-PF6746	PF6746_eq	S8428		G	T	node93
6635802	E2b1-PF6746	PF6746_eq	FGC18332	Y5444	T	G	node93
6931109	E2b1-PF6746	PF6746_eq			G	A	node93
7148062	E2b1-PF6746	PF6746_eq	FGC18324	Y5417	G	A	node93
7508107	E2b1-PF6746	PF6746_eq	FGC18329	Y5426	C	G	node93
7653959	E2b1-PF6746	PF6746_eq	S10460		G	T	node93
7873104	E2b1-PF6746	PF6746_eq	FGC18319	Y5413	T	C	node93
7934084	E2b1-PF6746	PF6746_eq	S10862		G	A	node93
7942896	E2b1-PF6746	PF6746_eq	S10871		A	G	node93
7977606	E2b1-PF6746	PF6746_eq	S10914		G	A	node93
8099782	E2b1-PF6746	PF6746_eq		Y46834	G	T	node93
8240582	E2b1-PF6746	PF6746_eq	L788		C	T	node93
8420937	E2b1-PF6746	PF6746_eq	S11435		T	C	node93
8519391	E2b1-PF6746	PF6746_eq	PF6750		C	T	node93
8706371	E2b1-PF6746	PF6746_eq			C	T	node93
8793366	E2b1-PF6746	PF6746_eq			C	G	node93
9819239	E2b1-PF6746	PF6746_eq	S12502		A	G	node93
14819174	E2b1-PF6746	PF6746_eq		Y5428	C	T	node93

15350926	E2b1-PF6746	PF6746_eq	CTS4041		G	T	node93
15360222	E2b1-PF6746	PF6746_eq	S17046		A	G	node93
15374136	E2b1-PF6746	PF6746_eq	CTS4068		G	A	node93
15642631	E2b1-PF6746	PF6746_eq	FGC18318^	Y5429	T	C	node93
15713060	E2b1-PF6746	PF6746_eq	FGC13413	Y5415	A	C	node93
15757262	E2b1-PF6746	PF6746_eq	CTS4659		A	C	node93
16197881	E2b1-PF6746	PF6746_eq	CTS5306		A	G	node93
17298143	E2b1-PF6746	PF6746_eq	CTS7118		A	G	node93
17712721	E2b1-PF6746	PF6746_eq	S20101		G	A	node93
17914192	E2b1-PF6746	PF6746_eq		Y5430	T	C	node93
17915511	E2b1-PF6746	PF6746_eq	CTS8281		T	C	node93
18251330	E2b1-PF6746	PF6746_eq	S20870		T	C	node93
18586605	E2b1-PF6746	PF6746_eq	CTS8973		G	A	node93
18891599	E2b1-PF6746	PF6746_eq	S21430		G	C	node93
18963596	E2b1-PF6746	PF6746_eq	CTS9561		G	A	node93
18985886	E2b1-PF6746	PF6746_eq	FGC18322	Y5411	A	T	node93
19164275	E2b1-PF6746	PF6746_eq	CTS9944		G	A	node93
19511144	E2b1-PF6746	PF6746_eq	CTS10524		C	T	node93
21542647	E2b1-PF6746	PF6746_eq	S23225		A	G	node93
21548445	E2b1-PF6746	PF6746_eq	S23230		G	A	node93
21814778	E2b1-PF6746	PF6746_eq	FGC18311	Y5416	A	G	node93
21984660	E2b1-PF6746	PF6746_eq	FGC18306	Y5423	C	A	node93
22119525	E2b1-PF6746	PF6746	PF6746		T	C	node93
22120866	E2b1-PF6746	PF6746_eq	S23992		C	T	node93
22302935	E2b1-PF6746	PF6746_eq			A	T	node93
22514456	E2b1-PF6746	PF6746_eq	S24351		A	G	node93
22711937	E2b1-PF6746	PF6746_eq	FGC18314	Y5433	C	T	node93
22998407	E2b1-PF6746	PF6746_eq	S24981		A	G	node93
23557237	E2b1-PF6746	PF6746_eq	FGC18303	Y5434	A	G	node93
23775226	E2b1-PF6746	PF6746_eq	S25832		C	T	node93
24440809	E2b1-PF6746	PF6746_eq	S26174		G	A	node93