

Haplomitrium ensiformis chloroplast DNA OM867544 RNA editing

numbers		average efficiencies				
443		total sites				
383		C to U (eU)		46%		
60		U to C (eC)		36%		
75		silent		11%		
9		NESIs		34%		
25	23	intron		35%		
29	22	5'-UTR		20%		
34	28	3'-UTR		8%		
						4
Pos	Dist	Edit	Effic.	Remarks	Remarks2	EdiFacts
508	92	ndhBeU504FF	11.1%	silent		
600	913	ndhBeU596TI	80.3%			
1513	110	ndhBeU785SL	94.2%	IR		OTP82
1623	33	ndhBeU891AA	5.8%	IR, silent		
1656	52	ndhBeU928PS	87.3%	IR		
1708	7	ndhBeU980SL	3.5%	IR		
1715	64	ndhBeU987NN	5.1%	IR, silent		
1779	10	ndhBeU1051RC	90.4%	IR		
1789	81	ndhBeU1061PL	91.7%	IR		
1870	8	ndhBeU1142PL	85.6%	IR		
1878	4	ndhBeU1150RC	83.7%	IR		
1882	3	ndhBeU1154SL	81.6%	IR		
1885	4	ndhBeU1157PL	84.8%	IR		
1889	20	ndhBeU1161SS	1.5%	silent, IR		
1909	4	ndhBeU1181SL	83.9%	IR		
1913	19	ndhBeU1185SS	13.0%	silent, IR		
1932	31	ndhBeU1204HY	91.6%	IR		CREF7
1963	9	ndhBeU1235SL	90.0%	IR		
1972	5	ndhBeU1244SL	92.4%	IR		
1977	58	ndhBeU1249LL	8.3%	silent, IR		
2035	5243	ndhBeU1307SL	91.5%	IR		
7278	4301	trnA-UGCeU41	75.3%	IR		
11579	295	rrn5eU+654	13.4%	IR, 3'-UTR		
11874	979	rrn5eU+949	11.1%	IR, 3'-UTR		
12853	365	rps12i114g2eU243	9.6%	IR, intron		
13218	5	rps12eU216HH	23.0%	IR, silent		
13223	205	rps12eU221SL	90.2%	IR		
13428	714	rps12i346g2eU80	90.4%	IR, intron		
14142	142	rps7eC160*Q	86.2%	IR		
14284	4	rps7eU302SL	93.9%	IR		
14288	11	rps7eU306AA	4.9%	IR, silent		
14299	7	rps7eU317SL	95.7%	IR		
14306	2649	rps7eU324II	6.6%	IR, silent		
16955	61	ycf2eU126LL	6.7%	IR, silent		
17016	158	ycf2eC187*R	49.2%	IR		
17174	921	ycf2eU345VV	12.7%	IR, silent		
18095	116	ycf2eU1266FF	2.2%	IR, silent		
18211	185	ycf2eU1382SL	2.7%	IR		
18396	842	ycf2eC1567*Q	70.8%	IR		

19238	62	ycf2eU2409LL	7.7%	IR, silent	
19300	82	ycf2eU2471SL	2.4%	IR	
19382	377	ycf2eU2553LL	1.3%	IR, silent	
19759	663	ycf2eU2930PL	2.5%	IR	
20422	89	ycf2eU3593SL	84.1%	IR	
20511	387	ycf2eC3682*Q	77.0%	IR	
20898	313	ycf2eC4069SS	3.4%	IR, silent	
21211	180	ycf2eU4382PL	60.5%	IR	
21391	23	ycf2eU4562SL	66.1%	IR	
21414	187	ycf2eC4585*Q	65.3%	IR	
21601	1758	ycf2eU4772SF	1.8%	IR	
23359	888	ycf2eU+185	1.3%	IR, 3'-UTR	
24247	135	chlLeU2TM	46.2%	start	
24382	180	chlLeU137SL	89.5%		
24562	45	chlLeU317PL	90.2%		
24607	611	chlLeU362SF	95.7%		
25218	1176	chlNeU23AV	8.3%		
26138			expected	chlNeU943LF	
26394	19	chlNeU1199PL	1.4%		
26413	122	chlNeU1218II	14.7%	silent	
26535	52	chlNeU1340SF	1.2%		
26587	235	chlNeU+12	2.6%	3'-UTR	
26822	142	ycf1eU+141	3.8%	3'-UTR	
26964	314	ycf1eU2TM	48.4%	start	
27278	176	ycf1eU316Q*	1.7%	early stop	
27454	890	ycf1eU492II	1.3%	silent	
28344	1307	ycf1eU1382TI	1.6%		
29651	400	ycf1eU2689RC	6.3%		
30051	115	ycf1eU3089SL	1.3%		
30166	225	ycf1eU3204FF	1.6%	silent	
30391	1563	ycf1eU3429II	1.6%	silent	
31954	726	ycf1eU4992FF	2.0%	silent	
32680	550	ndhHeU2TM	61.6%	start	
32857			expected	ndhHeU179TI	not ed. in Adiantum either
33230	677	ndhHeC552PP	27.4%	silent	
33907	113	ndhAeU43LF	18.4%		
34020	4	ndhAeU156LL	2.6%	silent	
34024	865	ndhAeC160*R	38.6%		
34889	598	ndhAi559g2eU466	62.7%	intron	
35487	204	ndhAeU836SL	67.8%		
35691	132	ndhAeC1040LP	1.6%		
35823	391	ndhAeC+53	5.0%	3'-UTR	
36214	227	ndhleU297II	1.9%	silent	
36336			expected	ndhleU419TI	not ed. in Adiantum either
36441	237	ndhleU+5	3.3%	3'-UTR	
36678	276	ndhGeU83SL	67.1%		
36954	360	ndhGeC359FS	74.1%		
37314	102	ndhEeU2TM	47.8%	start	
37416	1052	ndhEeU104PL	87.5%		
38468	1004	ndhDeU155SF	84.2%		

39472	299	ndhDeU1159LF	1.7%		
39771	1	ndhDeU1458II	2.6%	NESI	
39772	452	ndhDeU1459RW	88.4%		
40224	3	ccsAeU893SL	72.7%		
40227	139	ccsAeU890SF	72.1%		
40366	329	ccsAeU751RW	73.5%		
40695	36	ccsAeU422TM	60.3%		
40731	144	ccsAeU386SL	53.8%		
40875	856	ccsAeU242SF	1.1%		
41731	549	rpl32eC+165	1.2%	3'-UTR	
42280	245	rpl21eU389TI	55.6%		
42525	2	rpl21eU144HH_YY	13.5%	silent	
42527	747	rpl21eU142HY	44.5%		
43274	52	ndhFeU346Q*	1.4%	early stop	
43326	6	ndhFeU398SL	72.3%		
43332	218	ndhFeU404SL	77.6%		
43550	364	ndhFeC622*R	54.3%		
43914	125	ndhFeU986SL	68.3%		
44039	79	ndhFeC1111SP	1.3%		
44118	1	ndhFeU1190TI	71.0%		
44119	98	ndhFeU1191TT_II	44.4%	NESI	
44217	25062	ndhFeU1289SL	70.4%		
69279	125	rpl2eC10*Q	70.5%		
69404	1046	rpl2eC135NN	1.3%	silent	
70450	354	rpl2eC460*Q	80.4%		
70804	57	rpl2eU817RC	1.5%	unexpected	
70861	2	rps19eU-1	64.3%	5'-UTR	
70863	112	rps19eU2TM	64.8%	start	
70975	15	rps19eU114SS	2.6%	silent	
70990	#REF!	rps19eC129II	3.0%	silent	
71280	3	rpl22eU128SL	88.5%		
71283	1	rpl22eU131PL	88.7%		
71284	261	rpl22eU132PP_LL	33.0%	NESI	
71545	49	rpl22eC+24	27.0%	3'-UTR	
71594	70	rps3eU-35	3.7%	5'-UTR	
71664	10	rps3eU36LL	57.3%	silent	surprise
71674	9	rps3eC46*Q	31.6%		surprise
71683	96	rps3eU55HY	66.1%		
71779	210	rps3eU151R*	6.4%	early stop	
71989	247		expected	rps3eU361HY	
72236	2		expected	rps3eU608TI	
72238	165	rps3eU610RC	96.1%		
72403	1450	rpl16eU2TM	79.4%	start	
73853	1	rpl14eU55LL PS	1.0%	NESI	
73854	40	rpl14eU56PL PL	95.3%		
73894	89	rpl14eU99YY	4.2%	silent	
73983	5	rpl14eU185AV	92.4%		
73988	141	rpl14eC190CR	87.7%		
74129	5		expected	rpl14eU331LF	
74134	5	rpl14eU336AA	2.5%	silent	

74139	29	<u>rpl14eU341IT</u>	1.6%		
74168	296	<u>rpl14eC+1</u>	13.6%	3'-UTR	
74464	9	<u>rps8eU-1</u>	43.2%	5'-UTR	
74473	308	<u>rps8eC9NN</u>	2.2%	silent	
74781	261	<u>rps8eU317SL</u>	90.1%		
75042	4	<u>infAeC67*R</u>	61.7%		
75046	50	<u>infAeU71AV</u>	91.0%		not edited in Adiantum
75096	43	<u>infAeC121*R</u>	42.5%		
75139	1	<u>infAeU164AV</u>	92.8%		
75140	285	<u>infAeU165AA VV</u>	89.6%	NESI	
75425	327		expected	rpl36eC88SP	not edited in Adiantum
75752	227	<u>rps11eC215VA</u>	1.1%		strongly predicted
75979	61	<u>rpoAeU-3</u>	10.2%	5'-UTR	
76040	20		expected	rpoAeC59LS	
76060	162	<u>rpoAeC79FL</u>	6.6%		strongly predicted
76222	22	<u>rpoAeC241*Q</u>	46.3%		
76244	8	<u>rpoAeU263SL</u>	71.3%		
76252	52	<u>rpoAeU271LL</u>	64.5%	silent	
76304	75	<u>rpoAeU323SL</u>	68.3%		
76379	198	<u>rpoAeU398SL</u>	1.4%		
76577	30	<u>rpoAeU596SL</u>	59.3%		
76607	184	<u>rpoAeU626PL</u>	53.8%		
76791	45	<u>rpoAeU810PP</u>	1.5%	silent	
76836	66	<u>rpoAeU855FF</u>	2.5%	silent	
76902	2	<u>rpoAeU921LL</u>	3.3%	silent	
76904	409	<u>rpoAeU923SL</u>	27.1%		
77313	68	<u>petDeU481Q*</u>	98.6%		
77381	84	<u>petDeU413AV</u>	93.9%		
77465	6		expected	petDeC329IT	Not edited in Ophioglossum or S
77471	24	<u>petDeU323SL</u>	98.3%		
77495	288	<u>petDeU299SL</u>	95.0%		
77783	474	<u>petDeU11TI</u>	4.5%		
78257	313	<u>petDi8g2eC189</u>	1.1%	intron	
78570	63	<u>petBeU+46</u>	1.5%	3'-UTR	
78633	32	<u>petBeU646Q*</u>	95.8%		
78665	442	<u>petBeU614TM</u>	95.6%		
79107	421	<u>petBeU172HY</u>	97.6%		
79528	1	<u>petBi6g2eU479</u>	1.4%	intron	
79529	133	<u>petBi6g2eU478</u>	93.8%	intron	
79662	169	<u>petBi6g2eU345</u>	1.0%	intron	
79831	129	<u>petBi6g2eU176</u>	15.7%	intron	
79960	205	<u>petBi6g2eU47</u>	1.3%	intron	
80165	16	<u>psbHeU183YY</u>	1.4%	silent	
80181	272		expected	psbHeU167TI	not edited in Adiantum
80453	1	<u>psbNeU15TT</u>	9.2%	silent	
80454	7	<u>psbHeU-107</u>	20.7%	5'-UTR	antisense in psbN
80461	6	<u>psbNeU23SL</u>	17.8%		
80467	6	<u>psbNeU29TI</u>	17.5%		
80473	166	<u>psbNeU35SF</u>	14.8%		
80639	1299	<u>psbTeU+20</u>	4.3%	3'-UTR	

81938	467	expected	psbBeC583SP
82405	86	psbBeU116SL	99.1%
82491	28	psbBeU30TT	7.0% silent
82519	878	psbBeU2TM	95.8% start
83397	73	clpPi71g2eU296	2.9% intron
83470	426	clpPi71g2eU369	87.3% intron
83896	1	clpPeU103LL PS	1.4% NESI
83897	154	clpPeU104PL PL	76.8%
84051	56	clpPeU258FF	2.0% silent
84107	1	clpPeU314SF	93.2%
84108	24	clpPeU315SS_FF	93.0% NESI
84132	294	clpPeU339TT	1.6% silent
84426	48	clpPi361g2eU270	5.2% intron
84474	12	clpPi361g2eU318	90.3% intron
84486	18	clpPi361g2eU330	7.0% intron
84504	316	clpPi361g2eU348	2.4% intron
84820	259	clpPeU443SL	96.6%
85079	345	clpPeU+99	1.1% 3'-UTR
85424	470	rps12i114g2eU57	2.2% intron
85894	643	rps12i114g2eU527	1.5% intron
86537	6	rpl20eU226HY	95.3%
86543	15	rpl20eC232SP	1.1%
86558	111	expected	rpl20eC247FL
86669	111	rpl20eC+20	2.1% 3'-UTR
86780	306	rps18eU+169	2.4% 3'-UTR
87086	3	rps18eU91RC	11.3%
87089	121	rps18eU88RC	1.7%
87210	3	rps18eU-34	1.5% 5'-UTR
87213	831	rpl33eU+32	25.9% 3'-UTR
88044	7	psaJeU-248	1.6% 5'-UTR
88051	406	psaJeU-255	1.5% 5'-UTR
88457	#REF!	petGeU+178	5.1% 3'-UTR
88714	6	petGeU38SL	85.0%
88720	3	petGeU32SL	86.4%
88723	232	petGeU29AV	87.1%
88955	48	petLeU59SL	1.3%
89003	480	petLeU11PL	80.7%
89483	366	psbEeU-310	9.0% 5'-UTR
89849	12	psbEeU57YY	1.9% silent
89861	41	psbEeU69HH	1.6% silent
89902	232	psbEeU110SF	96.9%
90134	62	psbFeU81FF	24.5% silent
90196	39	psbLeU-2	1.1% 5'-UTR
90235	33	psbLeU38PL	97.8%
90268	21	psbLeU71PL	97.9%
90289	3	psbLeU92SL	98.0%
90292	171	psbLeU95SF	96.6%
90463	25	psbJeU31RW	94.8%
90488	18	psbJeU56TI	4.9%
90506	4	psbJeU74TM	97.6%

Not edited in Adiantum

90510	3	<u>psbJcU78GG</u>	10.8%	silent	
90513	1392	<u>psbJcU81VV</u>	1.7%	silent	
91905	254	<u>petAeU531FF</u>	40.2%	silent	
91910			expected	petAeC526YH	
92159	9	<u>petAeC277*Q</u>	68.4%		
92168	580	<u>petAeC268*Q</u>	71.0%		
92748	53	<u>cemAeU1408RC</u>	82.5%		
92801	120	<u>cemAeU1355SL</u>	84.2%		
92921	42	<u>cemAeU1235SL</u>	87.7%		
92963	109	<u>cemAeU1193PL</u>	88.1%		
93072	1157	<u>cemAeU1084LF</u>	4.3%		
94229	266	<u>ycf4eU+99</u>	1.1%	3'-UTR	
94495	83	<u>ycf4eC388LL</u>	48.7%	silent	
94578	292	<u>ycf4eU305SF</u>	1.6%		
94870	3	<u>ycf4eU13RC</u>	4.3%		
94873	52	<u>ycf4eU10HY</u>	9.7%		
94925	715	<u>ycf4eU-43</u>	2.6%	5'-UTR	
95640	33	<u>accDeU+69</u>	4.7%	3'-UTR	
95673	67	<u>accDeC+36</u>	8.8%	3'-UTR	
95740	1	<u>accDeU896PL PL</u>	89.0%		
95741	74	<u>accDeU895PL PS</u>	1.2%	NESI	
95815	42	<u>accDeU821SL</u>	92.3%		
95857	7	<u>accDeU779SL</u>	94.2%		
95864	42	<u>accDeC772*Q</u>	74.8%		
95906	73	<u>accDeC730SP</u>	61.0%		
95979	32	<u>accDeU657SS</u>	1.1%	silent	
96011	194	<u>accDeU625HY</u>	6.4%		
96056			expected	accDeU580FL	
96205	174	<u>accDeU431PL</u>	94.9%		
96379	46	<u>accDeU257SL</u>	92.3%		RARE1
96425	209	<u>accDeU211RC</u>	91.2%		
96634	2	<u>accDeU2TM</u>	89.0%	start	
96636	185	<u>accDeU-1</u>	54.6%	5'-UTR	
96821	2344	<u>accDeU-186</u>	21.6%	5'-UTR	
99165	696	<u>atpBeU-38</u>	61.6%	5'-UTR	
99861	148	<u>atpBeU659TI</u>	96.4%		
100009	574	<u>atpBeU807FF</u>	5.5%	silent	
100583	1	<u>atpBeU1381PL PS</u>	97.9%		
100584	35	<u>atpBeU1382PL PL</u>	1.7%		
100619	4	<u>atpBeU1417HY</u>	98.6%		
100623	212	<u>atpBeU1421PL</u>	96.9%		
100835	39	<u>atpEeU146SL</u>	96.6%		
100874	207	<u>atpEeU185PL</u>	96.2%		
101081	20	<u>atpEeU392TM</u>	73.5%		
101101	1589	<u>atpEeU+13</u>	5.2%	3'-UTR	
102690	196		expected	ndhCeU19HY	
102886	75	<u>ndhCeU215SF</u>	86.4%		
102961	15	<u>ndhCeU290AV</u>	84.5%		
102976	122		expected	ndhCeU305SF	Edit in Anthoceros
103098	133	<u>ndhKeU74SL</u>	1.1%		

103231	131	ndhKeU207FF	76.9%	silent
103362	513	ndhKeU338PL	89.8%	
103875	118	ndhJeU46R*	1.0%	early stop
103993	176	ndhJeU164SL	92.6%	
104169	60	ndhJeU340RW	32.0%	
104229	111	ndhJeU400HY	89.9%	
104340	104	ndhJeU511Q*	94.0%	
104444	28	ndhJeU+93	11.7%	3'-UTR
104472	1120	ndhJeU+121	46.6%	3'-UTR
105592	970	trnL-CAAeU35	36.2%	tRNA
106562	24	rps4eU227PL	75.0%	
106586	412	rps4eU251PL	81.2%	
106998	556	rps4eU+75	1.7%	3'-UTR
107554	42	ycf3eU-204	2.0%	5'-UTR
107596	96	ycf3eC-162	1.4%	5'-UTR
107692	118	ycf3eC-66	23.4%	5'-UTR
107810	15	ycf3eU53SL	71.5%	
107825	429	ycf3eU68TI	85.3%	
108254	472	ycf3i124g2eU373	86.0%	intron
108726	1		expected	ycf3eC202SP
108727	469	ycf3eU203SL	1.2%	
109196	430	ycf3i354g2eU318	87.1%	intron
109626	879	ycf3eU478RW	93.2%	
110505	2645		expected	psaAeC505FL
113150	1772	psaBeU869TM	97.9%	
114922	1089	rps14eU248PL	92.4%	
116011	1637	trnT-GGUeU+543	1.2%	IGS
117648	227		expected	psbCeU2TM, ACG in other Adiantoids, not edited -
117875	2180		expected	psbCeC229SP
120055	12	psbZeU158SL	71.3%	
120067	1183	psbZeU170PL	81.7%	
121250	2919	petNeU35TM	68.0%	
124169	88	rpoBeC127*R	41.0%	
124257	207	rpoBeU215PL	72.5%	
124464	3		expected	rpoBeC422IT
124467	30	rpoBeU425AV	55.2%	
124497	58	rpoBeU455SL	68.5%	
124555	13	rpoBeU513SS	1.1%	silent
124568	1	rpoBeU526PL PS	15.8%	
124569	117	rpoBeU527PL PL	71.5%	
124686	17	rpoBeU644AV	62.8%	
124703	1	rpoBeU661PF PS	1.2%	
124704	1	rpoBeU662PF PL	66.3%	
124705	55	rpoBeU663PP_FF	36.0%	NESI
124760	74	rpoBeC718*Q	53.4%	
124834	14	rpoBeU792LL	1.6%	silent
124848	12	rpoBeU806TI	1.6%	
124860	170	rpoBeU818SL	74.9%	
125030	30	rpoBeC988*Q	28.6%	
125060	12	rpoBeU1018RC	1.8%	

CRR22

125072	2		expected	rpoBeC1030SP
125074	251	rpoBeU1032SS	1.3%	silent
125325	66	rpoBeU1283SL	1.2%	
125391	66	rpoBeU1349SL	1.5%	
125457	100	rpoBeU1415AV	1.3%	
125557	440	rpoBeU1515VV	3.8%	silent
125997	330	rpoBeU1955PL	67.7%	
126327	2	rpoBeU2285SL	77.3%	
126329	77	rpoBeU2287Q*	1.4%	early stop
126406	356	rpoBeU2364VV	2.1%	silent
126762	2	rpoBeU2720PL	73.2%	
126764	265	rpoBeU2722HY	4.6%	
127029	80	rpoBeU2987SL	52.3%	
127109	1	rpoBeU3067PS PL	1.1%	
127110	83	rpoBeU3068PL PL	77.4%	
127193	80	rpoBeU3151RC	79.3%	
127273	12	rpoBeU+9	1.7%	3'-UTR
127285	38	rpoBeU+21	1.3%	3'-UTR
127323	108	rpoC1eU7HY	1.5%	
127365	115		expected	rpoC1eC49SP
127431	104	rpoC1eC115*Q	46.6%	
127480	55	rpoC1eU164PL	81.1%	
127535	167	rpoC1eU219NN	3.7%	silent
127702	33	rpoC1eU386SL	72.7%	
127735	22	rpoC1eU419PL	76.7%	
127757	730	rpoC1i432g2eU9	72.9%	intron
128487	502	rpoC1i432g2eU738	17.5%	intron
128989	105	rpoC1eU929SL	83.7%	
129094	16	rpoC1eU1034TM	86.0%	
129110	199	rpoC1eU1050NN	1.7%	silent
129309	208	rpoC1eC1249*R	81.0%	
129517	561	rpoC1eU1457SF	88.4%	
130078	355	rpoC1eC2018IT	30.6%	
130433	62	rpoC2eU170SL	91.8%	
130495	8	rpoC2eC232*Q	17.1%	
130503	92	rpoC2eU240SS	1.1%	silent
130595	569	rpoC2eU332SL	83.2%	
131164	167	rpoC2eU901RW	72.2%	
131331	1137	rpoC2eC1068YY	1.3%	silent
132468	669	rpoC2eU2205PP	2.7%	silent
133137	435	rpoC2eU2874II	12.4%	silent
133572	484	rpoC2eU3309II	67.2%	silent
133865	545		expected	rpoC2eC3602LS
134056	537	rpoC2eC3793CR	81.9%	
134410	183	rpoC2eU4147HY	87.8%	
134593	100	rps2eC-85	21.4%	5'-UTR
134693	163	rps2eU16RW	84.1%	
134856	35	rps2eU179SL	93.7%	
134891	71	rps2eU214LL	9.8%	silent
134962	64	rps2eU285LL	3.7%	silent

135026	48	rps2eU349R*	1.0%	early stop
135074	33	rps2eU397LF	1.1%	
135107	52	rps2eC430*Q	76.8%	
135159	74	rps2eU482SL	86.2%	
135233	106		expected	rps2eC556SP
135339	4	rps2eU662SL	84.5%	
135343	259	rps2eU666VV	8.2%	silent
135602	6	atpleU-1	78.1%	5'-UTR
135608	64	atpleU6HH	4.9%	silent
135672	175	atpleC70*Q	76.2%	
135847	66	atpleU245SL	93.0%	
135882			expected	atpleC280SP
135913	3	atpleU311PL	95.4%	
135916	30	atpleU314SF	95.8%	
135946	70	atpleU344SL	95.5%	
136016	200	atpleU414TT	1.9%	silent
136216	51	atpleU614SL	95.0%	
136267	481	atpleU665SL	96.3%	
136748	335	atpHeU-334	24.3%	5'-UTR
137083	175	atpHeU2TM	95.7%	start
137258	38	atpHeU177FF	1.1%	silent
137296	9	atpHeU215PL	96.7%	
137305	69	atpHeU224SL	96.7%	
137374	60	atpHeC+47	7.8%	3'-UTR
137434	83	atpFeU-82	6.4%	5'-UTR
137517	536	atpFeU2TM	49.7%	start
138053	817	atpFi145g2eU393	86.9%	intron
138870	45	atpAeU39II	12.8%	silent
138915	86	atpAeU84VV	7.8%	silent
139001	27	atpAeU170SF	94.6%	
139028	5	atpAeU197SL	96.1%	
139033	1	atpAeU202PL PS	14.9%	
139034	27	atpAeU203PL PL	95.2%	
139061	3	atpAeU230SL	96.5%	
139064	156	atpAeU233TM	97.0%	
139220	168	atpAeU389SL	97.1%	
139388	323	atpAeU557SL	98.1%	
139711	147	atpAeU880HY	98.3%	
139858	145	atpAeC1027*Q	91.8%	
140003	177	atpAeU1172SF	96.0%	
140180	177	atpAeU1349SL	96.1%	
140357	9	atpAeC+2	25.0%	3'-UTR
140366	250	atpAeU+11	1.4%	3'-UTR
140616	1482	trnG-UCCeC+67	3.4%	3'-UTR
142098	2013	ycf12eC-118	1.1%	5'-UTR
144111	99	chlBeU13HY	78.4%	
144210	5	chlBeU112HY	83.8%	
144215	133	chlBeU117FF	5.5%	silent
144348	270	chlBeC250*Q	68.3%	
144618	1	chlBeU520PL PS	8.8%	

144619	41	chlBeU521PL PL	76.8%	
144660	13	chlBeU562LL	9.9%	silent
144673	351	chlBeU575SL	79.8%	
144736	294		expected	chlBeC638LP
145024	107	chlBeU926AV	84.5%	
145030	101	chlBeU932SF	88.9%	
145131	286	chlBeU1033RW	90.1%	
145417	112	chlBeU1319SL	89.6%	
145529	32	chlBeU1431PP	1.1%	silent
145561	72	chlBeU1463TI	1.3%	
145633	73	chlBeU1535PL	87.7%	
145706	165	chlBeU+63	7.0%	3'-UTR
145871	747	rps16i40g2eU8	3.1%	intron
146618	35	rps16eU61AV	1.5%	
146653	51	rps16eU97LF	4.4%	
146704	165	rps16eU+13	6.2%	IGS
146869	48	ycf94eU2TM	59.0%	IGS
146917	1186	ycf94eU50PL	71.4%	IGS
148103	78	matKeU965SL	64.4%	
148181	91	matKeC1043LS	1.0%	
148272	229	matKeU1134PP	47.2%	silent
148417			expected	matKeU1279RC
148501	59	matKeU1363LF	1.9%	
148560	171	matKeU1422FF	6.4%	silent
148731		ndhBeU-79	3.1%	IGS
40446	249	ccsAeU671(as)	1.20%	antisense
71005	57	rps19eC144(as)	2.20%	antisense
71062	218	rps19eC201(as)	1.10%	antisense
95080	560	psaleU+244(as)	1.90%	IGS, antisense
116400	26	psbDeU-238(as)	4.20%	antisense
116426	1222	psbDeU-212(as)	1.80%	antisense
28313	31	ycf1eU1351(as)	1.30%	antisense

Edits	443	383	60	25	10	361	26	60	23	34	0
Gene	total	C>U	U>C	5'-UTR	start	CDS	*>Q/R	silent	introns	3'-UTR	check
accD	16	13	3	2	1	12	1	0	0	2	0
atpA	16	14	2	0	0	14	1	2	0	2	0
atpB	7	7	0	1	0	6	0	1	0	0	0
atpE	4	4	0	0	0	3	0	0	0	1	0
atpF	3	3	0	1	1	1	0	0	1	0	0
atpH	6	5	1	1	1	4	0	1	0	1	0
atpI	10	9	1	1	0	9	1	2	0	0	0
ccsA	7	7	0	0	0	7	0	0	0	0	0
cemA	5	5	0	0	0	5	0	0	0	0	0
chlB	16	15	1	0	0	15	1	3	0	1	0
chlL	4	4	0	0	1	4	0	0	0	0	0
chlN	5	5	0	0	0	4	0	1	0	1	0
clpP	14	14	0	0	0	7	0	2	6	1	0
infA	5	3	2	0	0	5	2	0	0	0	
matK	5	4	1	0	0	5	0	2	0	0	
ndhA	7	4	3	0	0	5	1	1	1	1	0
ndhB	22	22	0	1	0	21	0	1	0	0	0
ndhC	2	2	0	0	0	2	0	0	0	0	0
ndhD	4	4	0	0	0	4	0	0	0	0	0
ndhE	2	2	0	0	1	2	0	0	0	0	0
ndhF	9	7	2	0	0	9	1	0	0	0	0
ndhG	2	1	1	0	0	2	0	0	0	0	0
ndhH	2	1	1	0	1	2	0	1	0	0	0
ndhI	2	2	0	0	0	1	0	1	0	1	0
ndhJ	7	7	0	0	0	5	0	0	0	2	0
ndhK	3	3	0	0	0	3	0	1	0	0	0
petA	3	1	2	0	0	3	2	1	0	0	0
petB	9	9	0	0	0	3	0	0	5	1	0
petD	6	5	1	0	0	5	0	0	1	0	0
petG	4	4	0	0	0	3	0	0	0	1	0
petL	2	2	0	0	0	2	0	0	0	0	0

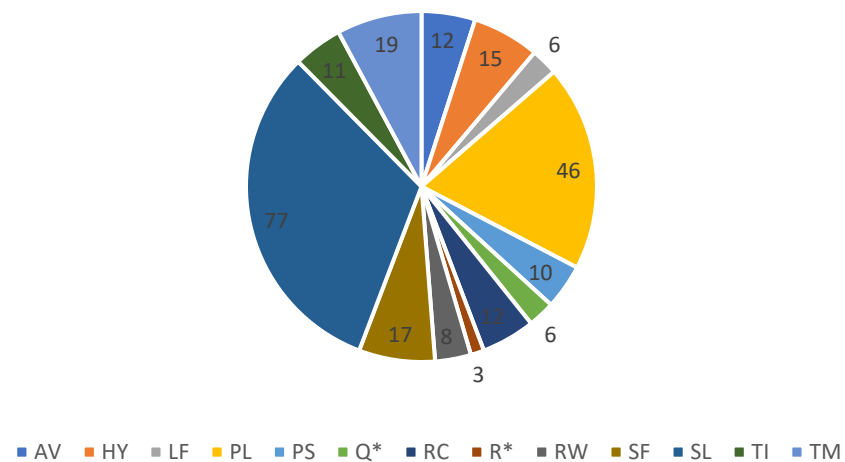
petN	1	1	0	0	0	1	0	0	0	0	0
psaA	0	0	0	0	0	0	0	0	0	0	0
psaB	1	1	0	0	0	1	0	0	0	0	0
psaI	1	1	0	0	0	0	0	0	0	1	0
psaJ	2	2	0	2	0	0	0	0	0	0	0
psbB	3	3	0	0	1	3	0	1	0	0	0
psbC	0	0	0	0	0	0	0	0	0	0	0
psbD	2	2	0	2	0	0	0	0	0	0	0
psbE	4	4	0	1	0	3	0	2	0	0	0
psbF	1	1	0	0	0	1	0	1	0	0	0
psbH	2	2	0	1	0	1	0	1	0	0	0
psbJ	5	5	0	0	0	5	0	2	0	0	0
psbL	5	5	0	1	0	4	0	0	0	0	0
psbN	4	4	0	0	0	4	0	1	0	0	0
psbT	1	1	0	0	0	0	0	0	0	1	0
psbZ	2	2	0	0	0	2	0	0	0	0	0
rpl14	8	6	2	0	0	7	0	2	0	1	0
rpl16	1	1	0	0	1	1	0	0	0	0	0
rpl2	4	1	3	0	0	4	2	1	0	0	0
rpl20	3	1	2	0	0	2	0	0	0	1	0
rpl21	3	3	0	0	0	3	0	1	0	0	0
rpl22	4	3	1	0	0	3	0	0	0	1	0
rpl32	1	0	1	0	0	0	0	0	0	1	0
rpl33	1	1	0	0	0	0	0	0	0	1	0
rpl36	0	0	0	0	0	0	0	0	0	0	0
rpoA	13	11	2	1	0	12	1	4	0	0	0
rpoB	34	31	3	0	0	32	3	5	0	2	0
rpoC1	14	11	3	0	0	12	2	2	2	0	0
rpoC2	11	8	3	0	0	11	1	5	0	0	0
rps11	1	0	1	0	0	1	0	0	0	0	0
rps12	6	6	0	0	0	2	0	0	4	0	0
rps14	1	1	0	0	0	1	0	0	0	0	0
rps16	4	4	0	0	0	2	0	0	1	1	0

rps18	4	4	0	1	0	2	0	0	0	1	0
rps19	6	3	3	1	1	5	0	2	0	0	0
rps2	11	9	2	1	0	10	1	3	0	0	0
rps3	6	5	1	1	0	5	1	1	0	0	0
rps4	3	3	0	0	0	2	0	0	0	1	0
rps7	5	4	1	0	0	5	1	0	0	0	0
rps8	3	2	1	1	0	2	0	1	0	0	0
rrn5	2	2	0	0	0	0	0	0	0	2	0
trnA-UGC	1	1	0	0	0	1	0	0	0	0	0
trnG-UCC	1	0	1	0	0	0	0	0	0	1	0
trnL-CAA	1	1	0	0	0	1	0	0	0	0	0
trnP-UGG	0	0	0	0	0	0	0	0	0	0	0
trnT-GGU	1	1	0	0	0	0	0	0	0	1	0
ycf1	11	11	0	0	1	10	0	4	0	1	0
ycf12	1	0	1	1	0	0	0	0	0	0	0
ycf2	18	13	5	0	0	17	4	0	0	1	0
ycf3	9	7	2	3	0	4	0	0	2	0	0
ycf4	6	5	1	1	0	4	0	1	0	1	0
ycf94	2	2	0	0	0	2	0	0	0	0	0

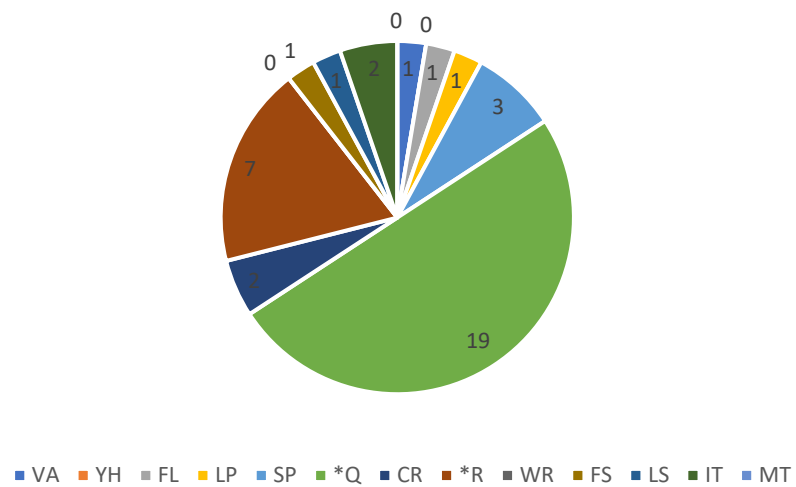
Edits	23	22	1
Intron	total	C>U	U>C
atpFi145g2	1	1	0
clpPi361g2	4	4	0
clpPi71g2	2	2	0
ndhAi559g2	1	1	0
petBi6g2	5	5	0
petDi8g2	1	0	1
rpoC1i432g2	2	2	0
rps12i114g2	3	3	0

rps12i346g2	1	1	0
rps16i40g2	1	1	0
ycf3i124g2	1	1	0
ycf3i354g2	1	1	0

C-to-U codon edits, non-silent, by type



U-to-C codon edits, non-silent, by type



		50% adjustable ET (Efficiency Threshold)							
		≥ ET	< ET	check					
total	451	201	250	0					
	C to U sites	≥ ET	< ET	check		U to C sites	≥ ET	< ET	check
total	392	180	212	0	total	59	21	38	0
Codon edits, non-silent					280 193 87				
total	242	172	70	0	total	38	21	17	0
AV	12	9	3	0	VA	1	0	1	0
HY	15	10	5	0	YH	0	0	0	0
LF	6	0	6	0	FL	1	0	1	0
PL	46	38	8	0	LP	1	0	1	0
PS	10	2	8	0	SP	3	1	2	0
Q*	6	3	3	0	*Q	19	14	5	0
RC	12	6	6	0	CR	2	2	0	0
R*	3	0	3	0	*R	7	3	4	0
RW	8	7	1	0	WR	0	0	0	0
SF	17	12	5	0	FS	1	1	0	0
SL	77	65	12	0	LS	1	0	1	0
TI	11	5	6	0	IT	2	0	2	0
TM	19	15	4	0	MT	0	0	0	0
Start creation					Stop removal				
TM start	12	0	12	0	*>Q/R	26	17	9	0
<u>Stop creation</u>									
	9	3	6	0					
<u>Multiple codon edits</u>									
total	24								
sense ()	18								
sense ()	18	0	18	0	sense ()	0	0	0	0
silent (_)	6								
silent (_)	6	0	6	0	silent (_)	0	0	0	0
Additional codon changes:									

<u>PF/PS</u>	1	0	1	0	<i>FP/FL</i>	0	0	0	0
<u>PF/PL</u>	1	0	1	0	<i>FP/FS</i>	0	0	0	0

Silent edits						89	8	81	
<u>sum</u>	82	8	74	0	total	7	0	7	0
<u>AA</u>	4	1	3	0	<i>AA</i>	0	0	0	0
<u>CC</u>	0	0	0	0	<i>CC</i>	0	0	0	0
<u>DD</u>	0	0	0	0	<i>DD</i>	0	0	0	0
<u>FF</u>	15	2	13	0	<i>FF</i>	0	0	0	0
<u>GG</u>	1	0	1	0	<i>GG</i>	0	0	0	0
<u>HH</u>	4	0	4	0	<i>HH</i>	0	0	0	0
<u>II</u>	10	1	9	0	<i>II</i>	1	0	1	0
<u>LL</u>	15	2	13	0	<i>LL</i>	1	0	1	0
<u>NN</u>	3	0	3	0	<i>NN</i>	2	0	2	0
<u>PP</u>	6	0	6	0	<i>PP</i>	1	0	1	0
<u>RR</u>	0	0	0	0	<i>RR</i>	0	0	0	0
<u>SS</u>	8	1	7	0	<i>SS</i>	1	0	1	0
<u>TT</u>	5	0	5	0	<i>TT</i>	0	0	0	0
<u>VV</u>	7	1	6	0	<i>VV</i>	0	0	0	0
<u>YY</u>	4	0	4	0	<i>YY</i>	1	0	1	0

Primary silent edits

<u>LS/LL</u>	0	0	0	0	<i>LP/LL</i>	0	0	0	0
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Secondary silent edits

<u>PL/PS</u>	5	1	4	0	<i>SL/SP</i>	0	0	0	0
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Non-coding regions									
<u>total</u>	82	0	82						
<u>total</u>	68	0	68	28	total	14	0	14	0
<u>5'-UTR</u>	25	0	25	22	<i>check</i>				
<u>5'-UTR</u>	21	0	21	0	<i>5'-UTR</i>	4	0	4	0
<u>3-UTR</u>	34	0	34	28	<i>check</i>				
<u>3'-UTR</u>	25	0	25	0	<i>3'-UTR</i>	9	0	9	0
<u>Introns</u>	23	0	23						
<u>Introns</u>	22	0	22	0	<i>Intron</i>	1	0	1	0