Supplementary Tables 1 – 10. The major gRNA classes involved in editing of the *T. brucei* mRNAs. The gRNA is identified by its complementarity to the 5' (column 1) and 3' (column 2) number of the fully edited mRNA (+1 = 0). The populations were sorted based on both mRNA regions covered and on guiding sequence class. Variations in both 5' and 3' nts outside of the guiding regions were ignored. Transcript copy numbers were determined by adding all gRNAs of the same guiding region sequence. Major sequence classes were defined as containing greater than 100 transcript copies. The specific sequence shown is of the most abundant transcript in the sequence class. In the case of rare gRNA transcripts, the identified gRNAs are shown regardless of copy number. Red nucleotides indicate a mismatch in the aligned sequence (including C:A base pairs). Starred (☆) gRNAs indicate novel gRNAs not found in the KISS database (http://splicer.unibe.ch/kiss). The square indicates novel gRNAs with a closely related gRNA (1-5 nt differences) found in the KISS database.

Supplementary Table 1: COIII: Major gRNA classes

mRNA 5'	mRNA 3'	copy #	COIII major gRNA classes
☆24	70	2	ATATAC AATATACAACGGAATGAGAATATAAGAAAGTGATGATTATT T_{10}
☆29	70	112	ATATAC AATATACAACGGAATGAGAATATAAGAAAGTGATGATA $TTAT_{11}$
☆35	70	1179	ATAATT AATATACAACGAGATAGAGACGTAAAAGAAT TGATGTAT$_{11}$G
☆36	73	826	AT ATAAATATACAACGAGATGAAGGCATAGAGAAA AGATGGTATATAAT$_{14}$
51	99	721	ATATAT AACAAAAACACTACTAGCGTTGACAGATATATGATGAAAAT T_{11}G
☆54	101	1386	ATAT AAAACAAAAACATCACTGATATTGACGGATATATGATGA $TAAAT_{11}$G
☆81	112	834	GTA GAGTGAAGATAGAGAAATAAAGATATCGTT T_{13}
☆81	116	550	ATATATAATAACAAT**A**GCAGGTAAAGGTGAGAAAGTGAAGATATCATT T_{10}
☆81	131	1	TACATAATAACAGTGGCGGGTAGAGATAGAAGAATAAAGATACTATT T_8
117	156	104	ATATATA TCCAACAAACAGAGTAACCGATACATAGTGATAGTG $ATAT_{13}$
☆131	188	109	ATAT AAAACTACCAAACAGTAAATAGATAAGTTCTAATAAGTGAGATAATTAAT TGTTAT$_{13}$ATC
☆134	188	542	ATAT AAAACTACCAAACAGTAAATAGATAAGTTCTAATAAGTGAGATAATT T_8GTT
141	185	126513	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATAGATGA $TTTAAT_{12}$G
□141	185	99	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATAAATGA $TTTAATTAAT_8$
□141	185	183	ATAT ATTACCAAACAATAGACAAGTAGATTCTAATAGATGA $TTTAAT_8AT_4$
□141	185	761	ATAT ATTACCAAACAATAGATGAGTAGATTCTAATAGATGA $TTTAATTAAGT_4$
□142	185	199	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATAGATA $TTTAATTAT_5$
□143	185	116	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATAGAT $CATTTAATTAT_5$
□145	185	172	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATAG CTGATTTAATTTTGT$_8$
□146	185	350	ATAT ATTACCAAACAATAGACGAGTAGATTCTAATA TATGATTTAAT$_7$CT$_4$
□147	185	106	ATAT ATTACCAAACAATAGACGAGTAGATTCTAAT CGATGATTTAATTAAT$_{17}$
☆163	203	2487	AAA ATAATCAACAAATAGAGAACTGCTAGATGATAGGTGA TATAGAT$_{10}$GTT
163	211	861	ATATT AACCACAATCAATAAGTAAGAGACTACTAGATGATAGATAA T_{14}
195	247	688	ATAAATAAATACAAAAATCAGCAAGAAAGAGAGTAAGATTGTGATTAAT T_8
☆195	247	457	ATAAATAAATACAAAAATCGACAGAGAGAAAAGTAGGATTGTGATTAAT T_7AT_4
☆199	243	462	ATAT ACAAATACAAAAATCGATAGAAAAGAAAGTGAGATCATGATT TAT_{12}
☆204	247	5008	ATATAT ACAAACAAATACAGAGATCGACGAGAAAGAAAGTGAGATT TAT_{12}
☆229	274	289	ATA TACAAAACAAATCTAACAGTGATAGTAACAGATAGATATAGAGATT T_{10}
☆258	299	18740	ATATAT AAATCAAATAAACTATGTAGAAAGTTACGAGATAGATTTAATA T_{10}
☆258	300	814	ATATAT AAAATCAAATAAATTACGTAGAGAGTTACAGAATAAGTTTAAT T_{10}
☆261	299	181	ATATAT AAATCAAATAAACTATGTAGAAAGTTACGAGATAGATTT T_8
265	310	4418	ATAAAACACAAAAATCAAGTGAACTATGTAGAGGATTGTAAGATAA T_{13}
265	308	4452	AAA AAAACACAAAAATCAAGTGAACTATGTAGAGGATTGTAAGATAA T_{11}
☆267	306	435	ATATAT AACACAAAAATCAGATAGACTATGTAGAAGATTGTGAAAT T_{11}
□284	321	21	ATATAAA GATACAACGTAATAAGGCATAGAAGTTAAGTGAATTAT TGT_{12}
293	320	1024	AATACTGT ATATGATGTAGTAAGATATAGAGATTAA T_{10}
□293	335	1	AAAAAACAATACTGGATATGATGTAGTAAGATATAGAGATTAA $TAACT_6$

mRNA 5′	mRNA 3′	copy #	COIII major gRNA classes continued
323	365	33179	ATAT ATAAAACAAACTCGCTATGTAAGAACTGTAAAAAGTGATATT $AT_{11}G$
□323	365	301	ATAT ATAAAACAAACTCGCTATGTAAGAACTGTAAAAAGCGATATT AT_8CT_5
□330	365	856	ATAT ATAAAACAAACTCGCTATGTAAGAACTGTAAAAAA GTGATATT T_9
☆345	391	522	ATATAT ATAATACAACAAGGAGCGTCATAAGTAAAGTGAATTCGTTATAT T_{12}
345	391	203	ATATT ATAATACAACAGAAAATGTCATAAGTGAGATGAATTCGTTATAT T_8
☆362	406	101	ATATAT ATAAACATAAATCAGATAGTACAATGAAGAGTGTTATAGATAA T_9
376	418	9942	ACA TATAACACAAAAATAGACATAGACTGAATGATGCAGTGAAA $T_{12}G$
376	418	169	ACA TATAACACAAAAATAGACATAGACTGAATGATGCAGTAAAA $T4AACT_6$
☆378	422	1634	ATAT AACTTACAACACAGAGATAGACATAGATCAGATAATGTGATAA T_{13}
□384	418	185	ACA TATAACACAAAAATAGACATAGACTGAATGATGCA $TTGAAAT_{11}$
☆397	426	15	AAAACGAT AGCAAATTCATGACGTGAAAATAGATGTAA T_{11}
☆397	436	10	AAAA AAAAAACGAAAGCAGATTCACGGTACAGAGATAGATATAG T_9G
☆410	449	125	ATATA ATATAAGGTAAATGAGAGACGAGGGTAGACTTGTGATATA T_9
☆411	449	20772	ATATATA ATATAAGGTAAATGAGAGACGAGGGTAGACTTGTGATAC TAT_{12}
☆413	449	224	ATATATA ATATAAGGTAAATGAGAGACGAGGGTAGACTTGTGAT T_{10}
☆409	438	1420	ATAATAAGGTAT ACAGAGAACGGAAGCAGACTTATGATATAA T_{12}
418	467	451	ATAC TATAATAAACAACAAAATGTGTAAGGTAGATAAGAAGTGAAGGTAAATT $ATAT_4$
☆437	469	238	A TACATAATAAACAATGAGATATATAAGGTGAAT CGAAAGTGAAATAT1_2
456	499	936	ATAT AAAATACCAATAAAGAACAGAATTATAGTTGTATGATAGATAA AT_{12}
☆461	497	66677	ATACAT AATACCAATAGAAGACAGAATTGTAGTCATGTGATA $TTCAT_{14}$
☆461	497	5941	ATACAT AATACCAATAGAAGACAGAATCGTAGTCATGTGATA $TTCAT_{13}$
☆461	497	139	ATACAT AATACCAATAGAAGACAAAATTGTAGTCATGTGATA $TTCATAT_{11}$
☆462	497	371	ATACAT AATACCAATAGAAGACAGAATTGTAGTCATGTGAT T_{11}
486	539	653	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAATATTAATAG T_4
487	539	847	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAATATTAATA $TTAT_{11}$
488	539	4441	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAATATTAAT $TTCT_8$
490	539	1630	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAATATTA T_8CT_6
491	539	145031	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAATATT T_{10}
□491	539	849	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAGTTTAGAGAATATT T_{10}
□491	539	482	ATA TAAATAAAATGTATTTGTCAATGGATTAGATAAATTTAGAGAATATT T_8GTT
□491	539	353	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAAAATATT T_9
□495	539	1052	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAGAAT T_{11}
□498	539	1118	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTTAGAA TATTAATAG T_4
□502	539	448	ATA TAAATAAAATGTATTTGTCAATGGATTAGATGAATTT TAGAATAT$_6$CT$_5$
☆504	535	599	ATAT ATAAAATGTATTTGTCGACGAGTTAAATGGAT GTAGAAGAT$_{12}$
☆524	564	77	ATATAT AAATTAACAAATAGACTACTAATAAGTGAGTAAGATGTATT AAT3ATATAT$_4$
☆528	565	188	ATATAT AAAATTAACAAGTGAATCACTAACAGATAGATAGAATG ATAT$_{12}$A
☆528	564	181	ATATT AAATTAACAGATAAGCCACTGACAAATAGATAGAGTG ATAT$_{12}$
☆545	592	150	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAGTAAATTATT T_5AT_4
☆547	592	1442	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAGTAAATTA AT_{11}
☆548	592	99540	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAGTAAATT $T_{11}G$
☆550	592	176	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAGTAAA AT_{11}
☆548	592	238	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGCGAGTAAATT T_9
☆548	592	114	ATATAT AAACCTAAATCAAGAACATAAAACAGAGAGATTAGTGAGTAAATT T_{10}
☆551	592	599	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAGTAA T_{13}
☆554	592	504	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAGTGAG $AAAAT_{13}$
☆555	594	27720	ACAT AAAAACCTAAACTGAGAATACGAGACAAAGAAATTAGTGA $TTAAAT_{12}$
☆558	592	309	ATATAT AAACCTAAATCAAGAACATAGAACAGAGAGATTAG $GGAGTAAAT_{14}$
☆558	594	147	ACAT AAAAACCTAAACTGAGAATACGAGACAAAGAAATTAG $GGATTAAAT_{11}$
☆558	593	128	ACATT AAAACCTAAACTGAGAATACAAGACAGAGAGATTAA $GGATTAAAT_{12}$

mRNA 5′	mRNA 3′	copy #	COIII major gRNA classes continued
580	622	145	ATATAT ATCATAATACAAGGCAATGACGACGAGAAGATTTAGATTAA T_{11}
☆585	629	85916	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGAGATTTAA T_{12}
☆586	629	1991	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGAGATTTA T_{11}C
☆587	629	9106	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGAGATTT T_{11}
☆588	629	221	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGAGATT AAT$_8$AT$_4$
☆585	631	1447	ATAT ATAAACTCAATCATAGTATAAGATGACGACAATGAGAAGATTTAA T_{12}C
☆585	629	276	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAAAGATTTAA T_{12}
☆590	629	131	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGAGA ATTAATTAT$_6$
☆591	629	263	ATATA GAACTCAATCATAATATGAAGCAATAACAATAAGAGA T_3AAT$_7$
☆592	629	269	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAAGA TTTAAT$_5$AT$_8$
☆594	629	150	ATATA GAACTCAATCATAATATGAAGCAATAACAATGAA TAGATTTAA T_6
☆604	647	10315	ATACAAAAAC AAAAACCAAACGATGAACTTGATTGTAGTATAAGATAATA T_{13}
☆605	647	7606	ATACAAAAAC AAAAACCAAACGATGAACTTGATTGTAGTATAAGATAAT T_{11}AT
☆604	643	250	ATACAAAAACAAAAT ACCGAGCGACAGATTTGATTGTAGTATAAGATAATA T1$_1$
☆607	647	637	ATACAAAAAC AAAAACCAAACGATGAACTTGATTGTAGTATAAGATA T_9GT$_{11}$
☆635	669	482	ATATACAATGCAAACTTA CATGACTGGTTTTATAGAGATGAGAGATTAA T_{11}CTT
☐635	685	2	AT ATACAATGCAGACTCTTATAACTGGTTTTATAGAAGTGAGAAATTAA T_{14}
☆659	691	649	ATAT TAAATAACAATGCGAATTTTCATAGTTGGTT CATAGATACAAT$_{12}$
☆669	717	758	ATAAT AGAACACCACAGCTTAATGTAGTAGATGGCAGTGTAAATTTTT T_7ATT
☆669	706	354	ATATAGAACCAAAAACAG TGCAATTTAGTGTGATAGATGATAGTGTAAATTTTT T_7A
☆669	715	160	ATATAGAACCAAT AACATCGCGACTTAGTGTGATAAGTAATAGTGTAAATTTTT T_7
☆669	722	374	ATAT AATCAAAAACACCGTAACTTGATGTAGTAGATAGTAGTGTAAATTTTT T_7
699	748	977	ATATA TAATAAATCCAATGAAGATAAAGTAGAGTCAGAGATATTATGATTT T_{10}
701	748	2726	ATA TAATAAATCCAATGAAGATAAAGTAGAGTCAGAGATATTATGAT AT$_{13}$
☆706	753	31331	ATATAT AAATGTAATAGATCTGATGAAAGTGAGGTAGAATTGAGAATATT T_{10}
☆707	753	8037	ATATAT AAATGTAATAGATCTGATGAAAGTGAGGTAGAATTGAGAATAT AT$_{14}$GCCTAAC
☆713	753	595	ATATAT AAATGTAATAGATCTGATGAAAGTGAGGTAGAATTGAGAAT T_9AACCC
☆715	753	182	ATATAT AAATGTAATAGATCTGATGAAAGTGAGGTAGAATTGAGA TTTAT$_8$
☆719	753	131	ATATAT AAATGTAATAGATCTGATGAAAGTGAGGTAGAATT **T**AGAATATAT$_8$
☆707	753	206	ATATAT AAATGTAATAGATCTGATAAAAGTGAGGTAGAATTGAGAATAT AT$_6$AT$_6$
☐706	753	6744	ATATAT AAATGTAATAGATCCAATGAAGGTAAGATAGAACTGAGAATATT TTTGT$_5$
☐707	753	3791	ATATAT AAATGTAATAGATCCAATGAAGGTAAGATAGAACTGAGAATAT AATTAT$_7$
☐713	753	154	ATATAT AAATGTAATAGATCCAATGAAGGTAAGATAGAACTGAGAAT T_7GT$_6$
☐706	753	1214	ATATAT AAATGTAATAGATTCAATGAAGGTAAGATAGAACTGAGAATATT T_4CT$_4$
☐707	753	1124	ATATAT AAATGTAATAGATTCAATGAAGGTAAGATAGAACTGAGAATAT AAT$_{14}$
707	752	848	ATATAT AATGTAATAAATCTAATAGAGATAAGATAGAACTGAGGATAT AT$_{12}$
☆723	765	2739	ATATAT AACATGCATAAGATGTAGTGAATCTAGTAAGAGTAAGATAG T_{12}CT
☆728	767	1193	ATATAT AAAACATGCATAGAGTGTAGTAAGTTCAGTGAAAGTGA TATAGT$_4$CT$_4$
☆754	790	153	ATATAT TAAACAACAACAGAACGTCTAAGAGAGTATGTATA TGATGTAAT$_{15}$
☆755	815	1	AAATTAAACAGACGTATGAAGCAAGTAGATAACAACAAGACACTTAAGAGGGTATGCAT T_3

mRNA 5′	mRNA 3′	copy #	COIII major gRNA classes continued
☆771	814	138	ACATAT AATTAAACAAACGTATAGAGCAAGTAAGTAGCAGTGAAATATTT T_8GT_3
☆771	815	25628	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAAGATACTT T_{10}
☆772	815	111116	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAAGATACT AT_{14}
☆773	815	136	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAAGATAC $AAT_{11}A$
☆775	815	323	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAAGAT $T_{13}G$
☆777	815	188	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAAG TTACTAT$_5$
☆778	815	315	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGTGATAA TTTTTTTAT$_4$
☆772	815	230	ATAT AAATTAAACAGACGTATGAAGCAAGTAGATAGCGATAAGATACT AT_8AT_6
☆772	815	281	ATAT AAATTAAACAAACGTATGAAGCAAGTAGATAGTGATAAGATACT AT_{11}
☆788	829	5	ATATA TATCCATACACAGAAAATTAGATGAACGTGTAAAATGAGTAA $TTAT_6AT_6$
☆796	829	24	ATAACAAAACGTGA TATCCATATACAGAGAATTAGATAGATGTATAAA T_6
☆802	842	116	ATAT AAAACAAAACGTGTATTCATATATGAGAGATTAAGTAAATG $ATTTTAT_{10}$
814	854	66	ATAT ATACAATACAAAGAAGCGAAACGTGTATCTATATATGGAAA T_6
☆838	882	109	ATACAA TAAATCAACAAGATGTCGATATAGATGGATATGATATGAGAGAAT T_6CT_8
846	891	138	ATAT AAATCAAACTAAATTAGCAAGGTGTCAGTGTAAATGAGCATGATAT T_6GT_6
☆848	890	9675	ATATAT AATCAAACTAAATTGACGAGATGTTGATGTAGATAGATATAAT AT_8
880	918	1822	ATATAA ATCAGAATAAACAGATCGCAATAGAGAGAATTAAGTTAA $TAT_{13}C$
☆882	927	600	AA ATATAAAACATCAAGATAAATGGATTGTGATAGAGAAAGTTAAATT T_{11}
☆907	947	787	ATATAA TATACACACAGATACATAATACGTAGAATGTTAAGATAAGT $T_{13}GTT$
☆909	950	126	ATATA ATTACACACACAGATACGTGATATATAGAATGTTAAGGTAA $TATAAT_{10}$
☆913	946	558	ATAC ATACACACAAATATATAACATATAGAGCATTGAG $TTAGATAAT_{15}$
935	977	2920	ATATA AATCAACAACTGAAAAGATATCAATGAGATTGTACATGTAAAT $T_{12}GTT$
☆942	983	1160	ATAT AACTAATCAACAGCTAAGAGAACGTCAATGAGATTATGTG $ATTAAT_{14}$
☆963	1003	111	ATA TACAAACTACCAATATAAGTTAACTGATCGGTAATTAAGG $TTATAT_8AT_6$

Supplementary Table 2: C-Rich Region 3: Major gRNA classes

mRNA 5′	mRNA 3′	Copy #	CR3 Major gRNA Classes
☆34	62	18	ATATGT ACAACAAAACCGAGCAATCAGATAT AGAGTGAAAT$_{9}$
☆40	88	34162	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGATGATT T$_{12}$
☆41	88	140541	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGATGAT AT$_{13}$C
☆46	88	468	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGATGA AATAT$_{14}$
☆47	88	1270	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGATG T$_{11}$
☆48	88	902	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGAT T$_{8}$GT$_{5}$
☆49	88	177	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAGA AGATATAT$_{11}$
☆50	88	182	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTAG TTGTTAATAT$_{11}$
☆51	88	632	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATTA TATGATAATAT$_{4}$
☆52	88	648	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAAATT T$_{9}$
☆55	88	170	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGAA T$_{6}$T$_{12}$
☆56	88	133	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTGA T$_{12}$
☆40	88	151	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTAAAATTAGATGATT T$_{5}$GT$_{6}$
☆41	88	693	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGTAAAATTAGATGAT AT$_{12}$
☆41	88	212	ATATAT AAAATGTACAAACGGACAATGAGAGAACAGCGAAATTAGATGAT ATCT$_{7}$
☆41	88	135	ATATAT AAAATGTACAAATGGACAATGAGAGAACAGTGAAATTAGATGAT AATAT$_{7}$
☆41	88	181	ATATAT AAAATGTACAAACGGACAATGAGAAAACAGTGAAATTAGATGAT ATCT$_{15}$
☆41	88	106	ATATAT AAAATGTACAAACAGACAATGAGAGAACAGTGAAATTAGATGAT AATAT$_{8}$
☆41	88	155	ATATAT AAAATGTACAAACGAACAATGAGAGAACAGTGAAATTAGATGAT AT$_{13}$
40	77	213	ATATATAAAATGTACAT ACGAACGATAAAAGGGCAGTGAAATTAGATAATT TT
☆48	87	3434	ATATAATT AAATGTACAGACAAATGATAGAGAGACGATGAGATTAAGT TATAT$_{12}$
51	88	2553	ATAT AAAATGTACAGACGAGCAGTGAAGAGACAGTGAGATTA TACAT$_{11}$
☆51	86	3016	AAAAATT AATGTACAAATAAACGATAGAGAGACAGTGAGATTA TGAT$_{13}$
☆78	118	573	ATATAT AATCACAAACAAATAGAAAATGAGAGAGGTGTATGA TACTAT$_{9}$CT$_{5}$
☆105	140	15770	A TAGATAACAAACATAAGAGCAAGTCACGAG GTAGATATTGATAT$_{13}$C
☆122	166	27885	ATAGAAATCCAATAAGAGACAGAAGCTAGATAATGAGTATAAGA TAT$_{13}$
☆124	166	212	ATAGAAATCCAATAAGAGACAGAAGCTAGATAATGAGTATAA T$_{11}$
☆125	166	139	ATAGAAATCCAATAAGAGACAGAAGCTAGATAATGAGTATA T6CT$_{10}$
☆127	166	114	ATAT ACAAAAATCCAATGAAAAATAAAGACTGAGTGATGGATG CAAT4CT$_{10}$
123	162	309	ATATAT AAATCCAATAAGAAATGAAAGCTAGATAGTGAGTATAAG T$_{12}$GT$_{3}$
☆154	196	1492	ATAT ATACAACAATAAACTCGTATTAAGTGAGAGATGAAGATTTAAT T$_{8}$AT$_{4}$
☆156	199	136	ATAT TAAACACAACGATAGATCTATATTAAGTAGAAGATAGAAATTTA TTTAT$_{12}$
☆190	230	2	ATATACA ACATATCAAGTGGTAAGATAAGAGAAGAAAGTAGATGTAAT T$_{6}$
☆231	276	2	AT ATAACAATA**C**AAATGAGCTAGATAATGGATGATAGTTTGATAT T$_{12}$
☆237	279	1	TAT AAAATAACAATA**C**AAGTGAATTAGATAATGGATGATG TTTCAAT$_{15}$
☆226	277	19	ATAT AATAACAATATAAACGAACTGGATGATG**T**ATAGTA**C**TTTGATATATA AT$_{12}$
☆279	308	2	ATATAT AAATTATTTGCATACT**G**AGAT**T**AGT**G**ATAGTAAAGTGATTAAT$_{14}$

Supplementary Table 3: C-Rich Region 4: Major gRNA classes

mRNA 5'	mRNA 3'	copy #	CR4 Major gRNA classes
☆25	64	121	ATAAT AAAAATGCACAACTAGAATTGAAGTAAAGTGATGATA TATAT$_8$GT$_5$
48	103	296	ATA TATATAAAACACAGACATACTAAGTAAGAGAAAGAGAGGTGTATGATT T$_5$CT$_6$
☆87	134	7793	ATATAT AAACAACAATAGAGTATATCATAGACTGTATATGAAGCATAAAT T$_{10}$
☆88	134	208	T ATATAT AAACAACAATAGAGTATATCATAGACTGTATATGAAGCATAAA AT$_5$CT$_7$
☆89	134	426	ATATATAT AAACAACAATAGAGTATATCATAGACTGTATATGAAGCATAA CT$_8$
☆90	134	143	ATATATAT AAACAACAATAGAGTATATCATAGACTGTATATGAAGCATA T$_8$AT$_4$
☆93	139	200	AAA AAACAAAACAACAGTGAAATATACCGTAGATTGTATGTGAAAT TATATAT$_6$
☆127	171	2	ATAT ATATACTCACACAAATAGATGAGAGAGATAGAAAGTAAGATGATA TAT$_{13}$
154	192	3603	ATATTA AACTATAACAAGGCAGATAGAACGTACCTATATAGATAA T$_{14}$
186	214	7	AAATCACAGCC**T**AAAATGACGAGAGAAAGTAAATGGTTATA T$_{13}$AA
186	214	1	TAAAAAATCACAGCC**T**AAAATGACGAGAGAAAGTAAATGGTTATA TAGAT$_5$
☆217	261	14358	ATAT ATAAACTATACAATTGAAGCACTGATAGAAGGTTGTGATT TAAT$_{12}$
☆222	261	112	ATAT ATAAACTATACAATTGAAGCACTGATAGAAGGTTG ATTTAATAT$_8$
☆217	261	264	ATAT ATAAACTATACAGTCAAGACACTGATGAGAGATCGTGATT TAAT$_{13}$
☆242	284	9	AAAAAAA AAAATTATAACGTCATAGAAGAGATAGACTATATGATTAA T$_9$
☆244	295	14	AT AGAAAATAAACAGAATTGTGACGTCATAAAGAAGATAGATTATATAGTT T$_{14}$
☐280	321	94	AAAAA AAAAAACACAAGGCGAGATAGAGAAAAGAGATAAATAAGATT T$_5$
☐281	321	631	AAAA AAAAAACACAAGGCGAGATAGAGAAAAGAGATAAATAAGAT GT$_5$AT$_4$
☆307	352	259	AAAAT ACCAAACAGATCAGATAAAGGCAGTGATATAGAGAATATAAAATA T$_{12}$
☆308	352	725	ATAAAAT ACCAAACAGATCAGATAAAGGCAGTGATATAGAGAATATAAAAT T$_{11}$
☆310	352	214	ATAAAAT ACCAAACAGATCAGATAAAGGCAGTGATATAGAGAATATAAA T$_{12}$
☆312	354	675	ATAT AAACCAAACAAGCTGAATAAGAACAGTGATATAGAAGATATA TAT$_{14}$
☆325	355	140	AT AAAACCAGACAAACTGAATGAAGACAGTAA**C**GTAGAAGATAT T$_{10}$
☆344	389	863	ATAT ATAACACAAAACATAACAGAGAGTATAGAGAGAAATTGAATGA T$_9$AT$_5$
☆375	418	411	AAAA AAAAAACAACATAGAAAGTGAATCAGAGAATGACATAAGATATA T$_4$CT$_6$
☆378	418	447	A AAAAAACAACATAGAAAATAAGTCAGAGAGTAATATGAGAT TGTTATAAT$_5$
☆405	458	4211	AAAAAAAAAAACAAAGACAAAGAAATCACTCAGAATAGAAGATGGTATAA T$_9$CT$_4$
☆406	457	620	AAAAAAAAAACAAAGACAAAGAAATCACTCAGAATAGAAGATGGTATA T$_5$CT$_7$
☆407	458	392	AAAAAAAAAAACAAAGACAAAGAAATCACTCAGAATAGAAGATGGTAT T$_7$AT$_4$
☆406	458	406	AAAAAAAAAAACAAAAACAGAAAAACTGTCTAAGATAGAGAATGATATA T$_7$CT$_7$
☆410	458	185	AAAAAAAAAAACAAAGACAAAGAAATCACTCAGAATAGAAGATGG GATAAAT$_8$
☆441	490	238	ATAACAACCACAGATAGAAATGAACGTAAATGAGAGAGAAAGATGAAAGT T$_{11}$
☆443	490	3197	ATAACAACCACAGATAGAAATGAACGTAAATGAGAGAGAAAGATGAAA T$_{12}$G
454	498	1153	AT ACAAAATAACAACAATCATAAGTAAGAATAGATGTAGATGAGAAA T$_{11}$
☆454	495	282	ATATAT AAATAACAACAATCACAGATGAAGGTAGATATAAGTGAGAAA T$_{13}$G
☆476	520	766	ATATAT AATAACAACAATAATCAGATTAGCAGAGTAATGATAGTTATAAAT T$_{12}$G
481	525	390	ATACAAATAACAACAATAGCCAAGTTAATAGAGTGATGATGATTA AT$_{14}$
☆504	548	53	AAAAAAAAAAA GCATATAAATAGATCTATATATGAGTGATAGTGACAATTA T$_{15}$
☆505	548	50	AAAAAAAAAA GCATATAAATAGATCTATATATGAGTGATAGTGACAATT TCT$_9$
☆505	555	146	AA AAAAAACGCATATAAGTGAGCCTATACATAGATAATGATGATAATT TTT
☆543	576	511	AAA TTTATAAAACCAAT#CCGTAATTATCTGAGATGAGAAGTGTATA AT$_{12}$

Supplementary Table 4: Cytochrome b major gRNA classes

mRNA 5′	mRNA 3′	copy #	CYb Major gRNA Classes
☆29	62	4	ATAAGAATAACGT AGAAAATAATAGGGATTTATGATGAGATATATTT T_{15}
☆32	62	65	GT AGAAAATAATAGGGATTTATGATGAGATATG CTGTGGATAGT$_{12}$
☆32	59	327	AAATAATAGGGATTTATGATGAGATATG CTGTGGATAT$_{14}$
☆32	60	255	AAAATAATAGGGATTTATGATGAGATATG CTGTGGATAT$_{12}$
☆32	61	190	AAAAATAATAGGGATTTATGATGAGATATG CTGTGGATAT$_{13}$
☆32	64	176	AA AAAAAAAATAATAGGGATTTATGATGAGATATG CTGTGGATAGT$_{9}$
☆50	91	5*	AAAAAAA AAAAGACAATATAGATTTCTGGGTGATAAAAGGGATAATAAA T_{5}
☆51	91	10649	AAAAAA AAAAGACAATATAGATTTCTGGGTGATAAAAGGGATAATAA CT$_{5}$GT$_{5}$
☆52	91	908	ATAA GAAAGACAATATAGGTTTCTGGGTAATGGAGAGAATAATA T$_{12}$CT$_{3}$
☆53	91	18713	AAAAAA AAAAGACAGTGTGAATTTCTGAGTAATAAAGGGAATAAT T_{11}
□54	91	339	AAAAAA AAAAGACAATGTAGATTTCTGAGTAATGGGGAGGATAA CTAT$_{3}$AT$_{5}$*

*matches gCYb560A except for A-run at 5’ end.

Supplementary Table 5: MurfII major gRNA classes

mRNA 5′	mRNA 3′	Copy #	Murf II Major gRNA Classes
30	79	2605	ATAG AAAGCACAAAAATAAAATTAAATTAGAGTAATTGGATGTTAAAATT T$_{3}$CT$_{7}$

Supplementary Table 6: ND3 (CR5) major gRNA classes.

mRNA 5'	mRNA 3'	Copy #	ND3 Major gRNA Classes
☆31	79	70	ATAT ATAATAAACCACAGTATCAGAGACAGATATAGAAGTGATGATAGT T_6CT_6
☆33	76	313	ATATATT ATAAACCATGATATCGAAAATGGGTGTAGAAATGATGATA T_{12}
☆63	113	1006	ACATAAGAAACATAAAGAAAAATCTGTGAGTAGAGTGATAAGTTATAAT T_{11}
☆64	113	84	AT ACATAAGAAACATAAAAAGAAATCTGTAAGTAGAGTAGTAAGTTATAA GT_{14}
☆65	113	411	ACATAAGAAACATAAAGAAAAATCTGTGAGTAGAGTGATAAGTTATA T_8GT_6
99	143	826	AT ATGAAAACAATCAAAGAAGTGTGATAGAAAGTATAAAAGGTATAA T_{11}
☆130	170	507	ATATAT CAAATCACACGAAGATCATAGATGACGATGAAGGTAGTTAA TAT_7GT_{10}
☆130	170	413	ATACAT CAAATCACACGGAAATCATAGATGGCAATGAAGATAGTTAA T_{11}
155	189	236	AAATAAAACACC AACGTGAATTTATATTGTATAGATCGTATGAGAAT $AT_{10}GTTGT$
☆158	205	412	T ATGTATAAAACATTAAATGTGAGTTTGTGTCGTGTAGATTATGTGAA T_{15}
☆190	229	4864	ATATAT AACAACTAACAGAATATAGATCTGATGTATAAGATATCA $T_{13}G$
☆190	229	123	ATATAT AACAACTAACAGAATATAGATCTGATGTATAAGATATCG T_{13}
☆222	264	384	AAAAAT AACACAGATAATGGAATTTAATGATATGAGAAATGGATGATTA T_5
☆223	264	164	AAAAT AACACAGATAATGGAATTTAATGATATGAGAAATGGATGATT TCT_{17}
☆222	263	3165	ATAT ATACAAATAATGGGATTTAACGATATAGAGGATGAATGATTA $T_{13}AT$
☆223	263	3225	TTAT ATACAAATAATGGGATTTAACGATATAGAGGATGAATGATT T_{11}
☆223	263	106	ATAT ATACAAATAATGGGATTTAACGATATAGAGAGTGAATAATT T_4
☆253	299	106	ATAT AATAAAACAACACTATTACAAAGATAGACAGTGAGATATAGATAAT T_7CT_5
☆253	299	260	ATAT GATAAAACAACACTATTATGAGAACGAGTGATAGAATATAGATAAT $TTCT_{14}AT$
☆253	298	83	ATACAT ATAAAACAACACTATCATAGAAGCAGACAGTGAGATATGAGTAAT T_8CT_6
☆282	329	64*	ATAT AAAACCACAAAAATAGAAAGCTATAATAGAGATAGAATAATGTTATT CT_9
☆284	329	786	ATAT AAAACCACAAAAATAGAAAGCTATAATAGAGATAGAATAATGTTA AT_6
☆285	329	282	ATAT AAAACCACAAAGGTAGAAGATCGTAATAGAGATAGAATAATATT T_9
☆285	329	168	ATAT AAAACCACAAAAATAGAAAGCTATAATAGAGATAGAATAATGTT T_7CT_4
☆288	320	435	ATTTTAAGTT AGAGTGAGAAATTGTAGTGGAAATAAGATGATA $AAAT_{11}$
☆300	333	268	AT AACAAAAACCACAGAGATGAGAGATTGTAATAAG TATAGTGATAAT$_{13}$
321	369	3062	ATAT AATACCACATGAATCTTATATGTACGATGGAAGATGAGAATTATG $TTTCT_6$
322	369	48018	ATAT AATACCACATGAATCTTATATGTACGATGGAAGATGAGAATTAT T_{13}
□322	369	142	ATAT AATACCACATGAATCTTATATGTACGATGGAAGATGAAAATTAT TCT_{10}
324	369	5034	ATAT AATACCACATGAATCTTATATGTACGATGGAAGATGAGAATT $T_{10}G$
☆345	388	82	ATATGTAAAC AATATACGTGATCTCAGAGATACTATGTGAATTCTATGT T_7
☆347	388	95	ATATGTAAAC AATATACGTGATTTCAGAGATACTATGTGAATTCTAT $TTTAT_{18}$
☆402	438	417	ATATA TATAATACAACAAGGAGCGTCATAAGTAAAGTGAA TTCGTTATAT$_{13}$
402	438	128	ATAT TATAATACAACAGAAAATGTCATAAGTGAGATGAA TTCGTTATAT$_9$

Supplementary Table 7: ND7 major gRNA classes

mRNA 5′	mRNA 3′	copy #	ND7 major gRNA classes
☆28	71	6*	AAT ATACAAATGTAAGAAAACTATCGAGAGTGATGTAGAATGATATT AT_{13}
☆35	69	765	ATATA ATAAATGTAAAGAGACTATTGAGAGTGGCATAAGG GATATTAT$_{11}$
☆36	69	100761	ATATA ATAAATGTAAAGAGACTATTGAGAGTGGCATAAG TGATATTAT$_{14}$
☆36	71	240	AAAT ATACAAATGTAAAGAAGCTATCAGAGGTAATATAAG TGATATAAT$_{13}$
☆36	69	121	ATATA ATAAATGTAAAGAGACTATTGAGAGTGACATAAG TGATATTAT$_{13}$
☆38	71	113	ATAT ATACAAATGTAAAGAGACTATCGAGAGTGACATA TGTGATATTAT$_{11}$
☆59	91	4376	ATATATAGATGCA GTGGGTCGAATGTAAGATGATATAGATGTGAA TGT$_{12}$
☆95	132	1	AT ATAAACAACATAAAATACTATGTG**A**TGT**A**GGAT CTGTGAATTAAT$_{9}$
☆108	137	13	ATATAATAAACAACATAAAGTGCCATGT**A**CT**#**CG**A**GAT TTTTAGATT
☆121	166	396	ATACAT ATATAAACAATGAATTCACTGTGAAGATACGATAGATGATATA T$_{9}$GT$_{4}$
☆124	168	3640	ATATA CAATATAAACAGTAGATTCACTGCAGAAGTATGATAGATAAT T$_{10}$G
124	170	3944	ATAC ATCAATATAAACGATAGATTTACCGTAGAAGTATAGTGAATAAT T$_{10}$AT$_{3}$
☆139	170	1507	AT ATCAATATAAACAATAAGTTCGTCATAGA TTTACAGTAGATAAT$_{12}$
☆147	199	563	ATATATA CACGATGCAGATAATCTATAGTATGATTGATATAAGTGATAAAT$_{12}$
☆150	199	200	ATATATA CACGATGCAGATAATCTATAGTATGATTGATATAAGTGATAAAT AT$_{12}$
152	190	988	AAATTACGATGCAT AATAATCTATGGTACAGTTGATATGAGTGATAA T$_{7}$CT$_{4}$
☆246	269	2470	ATATCAAC ACATAATCTGACTTGTCGGAGTAT CTAAAGGAATAAAT$_{14}$
☆256	311	78*	ATAT AACATAAAGACAATAAGTGCTTATTACAGTGAACATTGATATAATTTAATTT TT
☆261	311	3259	ATAT AACATAAAGACAATAAGTGCTTATTACAGTGAACATTGATATAATTT T$_{8}$
☆261	310	146	ATAT ACGTAAAGACAATAGGTGTTCATTGCAGTAGATATTGATGTAATTT T$_{10}$
☆260	293	133	ATATATAAGACAAC GATGCTCATTATGGTAGATACTGATGTAATTTA T$_{7}$
☆261	293	2874	ATATATAAGACAAC GATGCTCATTATGATAGATACTGATGTAATTT T$_{10}$
☆292	334	91	ATACT ACAACATCGCGATATATACTTGGAATGTAAAGGTGATAAA GT$_{11}$
☆295	338	765	ATATA ACAAACAACATCGTAATATGTGCTCGGAGTATAGAGATAAT TAAATAT$_{13}$
☆297	338	888	AT ATAAATAACATCGCAACGTATATTCGAAATGTAGAGATA CAT$_{11}$GT
☆327	365	1225	ATACAT ATAAACGTATAGGTGCATAATGTAACGATGAATGATGTT AAT$_{11}$
☆327	373	2128	A TATAATTAATAAACGTATAAATGTGCAGTGTGACGATGAATGATATT AT$_{13}$
☆352	398	283	ATATA GAAAACTAC**A**GGTAAATTCTGCAATTAGTAGACGTGTAAAT AT$_{7}$
☆390	424	2283	ATATTAA ATACATGATATACGCGATAGATTATTAGAGTTATG AGTTAAT$_{12}$GT$_{3}$
☆390	424	162	ATATTAA ATACATGATATGCGCAGTAGACTATTAAAGTTATG AGTTAAT$_{12}$
☆391	427	200	AAATT ACCATACATGATATATACAGTGAACTATTAGAATTAT AGGTAATGT$_{6}$
☆412	452	15183	ATATATAA GGAGACAAATGATCTAGATTCGAGACTGTATATGATATAT T$_{13}$
☆416	452	199	ATATATAA GGAGACAAATGATCTAGATTCGAGACTGTATATGAT T$_{7}$AT$_{5}$
414	451	223	ATATATAACAAC GAGACAGATAATCTAGATTTGAAGTTATATGTGATAT T$_{12}$
☆416	464	5	AT ATTATAATAACGGAGATGAGCAATTTAGATTCAGAGTTATATGTGAT T$_{13}$
☆452	501	3	AT AAAATGTCATCAATT**A**GTTACGTTCTTTGAGTGATTGTGATAAT AT$_{13}$
486	530	2523	ATATAA GCATACGACAATTACGATATGAGTCAGAGAATGTTGTTAATTT T$_{11}$
☆499	526	2002	ATATATAA ATACGACAATCATAACGTGAATCAGAGA CTGTGATTAAT$_{11}$
☆508	548	1129	ATAT AAATCATGAAAGCTGAGTGTGTATGGCAGTTACGATATA TGTTAAT$_{14}$
508	544	116	ATATAAAA CATGGAAGCTAAGTGTGTATGATGATTATGATATA TGATTAAT$_{6}$
☆526	569	3050	ATATAT ATCATCAAGAATATCTAATGAGACTATGAGAGTTAAATGTATA AT$_{12}$
531	574	291	AAAT ACAAAATCATCAGGGATACTTGGTAAGATTGTGAAAGTTAAGT T$_{7}$GT$_{4}$ATAT
☆540	576	544	ATAATAAT AAACAAAATCATTGAGAGTATCTGATAGAGTTATGA TAGTCAT$_{5}$

mRNA 5′	mRNA 3′	copy #	ND7 major gRNA classes continued – page 2
562	603	267	ATATT ACAACAACAAGAAATCAATGAAGTCAGAGATAAAGTTATTAA T_9GT_5
564	596	173	TAGATATCAACAACAT CAGAGAATCAATGAAACTAGAGATAGAGTTATT T_{10}
☆564	615	1896	AT ATATTATCAACAACAATAGAAGATTGGCGAAATTAGAGATAGAATTATT T_{12}
☆567	615	360	AT ATATTATCAACAACAATAGAAGATTGGCGAAATTAGAGATAGAATT T_9
☆584	630	831	ATAAT TAACAAACAAATATGATATTATCAGTGA CAGTGAGAAATTGATA T_9AT_5
☆596	642	20	ATA TATAACAATCCATAGCAGATAGACGTGATATTATTGATGATAGT TTAAAT$_{18}$
☆629	670	1258	ATAT GATAAACGATTACCTACAGATAATGAGTCATAGTGATTTATA T_{13}
☆656	699	59	ATATAT ATGACAAACTACGTAAGTGCAGATAAAGTAAGTGATTATTT T_5CT_6
☆679	711	1	ATAAGTCAGAAAGTGATAGATCGTGTAAAT T_{15}
☆679	727	2	AAAAAA AAAAACTAAATCATATAAATTAAAGGGTGATGAACTGTGTAAAT T_{13}
☆711	758	3229	ATATAT ACGAGACAAAATATCACTTAGATTATTAGAGATTGAGTTATA AT_{13}
☆725	764	55757	ATATAA TAACGAACGAGGCAGAGTATCATTTAGACTATTAGA TTCAAT$_{14}$
731	759	2867	ATATATAAT GACGAGATAAGACATCACTTAGACTGT AGAGAT$_{12}$GG
☐751	794	174	AT ACTAAATAAACGACGATCTTATACTGTATCTGATGAATGGGATA TTAAT$_8$GT$_5$
☐755	794	167	AT ACTAAATAAACGACGATCTTATACTGTATCTGATGAATGA TATTAATTGT$_7$
756	794	48263	AT ACTAAATAAACGACGATCTTATACTGTATCTGATGAATG TGATATTAAT$_{14}$
☐757	794	318	AT ACTAAATAAACGACGATCTTATACTGTATCTGATGAAT ATGATATTAAT$_4$
☆777	822	5729	ATATAT TAAAATACAACTTATGATGACTAAGTGAATGATGATT CAAT$_{10}$
☆775	830	2644	ATAT ATAAAACATAAAATATGACTTGTAGCAGTTAAGTGAATGATGATTTT T_8
☆778	830	25793	ATAT ATAAAACATAAAATATGACTTGTAGCAGTTAAGTGAATGATGAT AT_{12}
☆778	830	134	ATAT ATAAAACATAAAATATGACTTGTAGCAGTTAAGTAAATGATGAT AT_7
☆778	830	331	ATAT ATAAAACATAAAATATGACTTGTAGCAGTTAAGTGAACGATGAT ATTAAAT$_{14}$
☆778	830	450	ATAT ATAAAACATAAAATATGACTTGTAGCAGTTAGGTGAATGATGAT ATTAAAT$_{13}$
778	833	903	AAATA ATAACAAAACATGAGATATAACTTGTAGTGATTAGATGAATGATAGT AT_{13}
780	833	2079	AAATA ATAACAAAACATGAGATATAACTTGTAGTGATTAGATGAATGATA T_{13}
781	833	2373	AAATA ATAACAAAACATGAGATATAACTTGTAGTGATTAGATGAATGAT T_{11}
☆790	839	52	ATAT ATAATCATAACAAGATGTAGAGTACGATTTATAGTGATTAA T_{12}
☆792	845	98	ATAT AAAACAATAATCATGATGAGATATAAAGTGCAGTTTGTGATAATT T_5GT_4
☆834	877	1279	AT ATAAACGGTCAAATGTATTGCTTGTAAGGTAGAGGTGATAATT T_7CT_5
☆843	877	26437	ATAT ATAAACGGTCAAATGTATTACTTATAAGATAGAG TTGATAAT$_{13}$C
☆863	902	2491	ATATA ATATGCATATCAGATAGACGTAGAAATAAGTGATTAAAT T_{10}
☆872	916	3	ATATAA AATCAACAAATTCGTATGTATATCGAGTAAATGTAGAAATAAAT T_9
☆901	939	1365	ATATAT ACTAATAAAAAGGCATTGCTTACAGATTGATAGATTTAT T_{12}
907	947	24	ATAAAGAAACCAACAGAAGAATATTGCTTGTAAGTTAATGA TCTTGTAT$_{10}$
☆931	978	3513	ATATAT TCAAACAAACAGATAGAACCAGAGACGAGAAGATTGATGAA T_{12}
☆932	978	44852	ATATAT TCAAACAAACAGATAGAACC**G**GAGACGAGAAGATTGAT**A**A T_{13}
☆940	978	182	ATATAT TCAAACAAACAGATAGAACCGGAGACGAGAAG CTTGATAAT$_5$
☆941	978	137	ATAT TCAAACAAACAGATAGAACCGGAGACGAGAA TATTGATAATTTAAT$_{14}$
☆933	986	2467	ATAAATAATCAAACAGACGAATGAAACTAGAGATAGAGAAATTAATA T_{12}
☆934	988	11706	ATATAAATAATCAAACAGACGAATGAAACTAGAGATAGAGAAATTAAT T_{12}
☆936	988	175	ATATAAATAATCAAACAGACGAATGAAACTAGAGATAGAGAAATTA TTAT$_{15}$
☆937	988	97	ATATAAATAATCAAACAGACGAATGAAACTAGAGATAGAGAAATT TAT$_{13}$

mRNA 5′	mRNA 3′	copy #	ND7 major gRNA classes continued – page 3
952	1000	748	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGATGAAATT T_{10}
□959	1000	173548	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGATGAAA AT_{14}
960	1000	472	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGATGAA $T8GT_{4}$
961	1000	265	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGATGA T_{12}
□962	1000	234	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGATG $TAAAT_{3}AT_{9}$
963	1000	371	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGAT $TTTCT_{11}$
□964	1000	372	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATAGA $AAAAAT_{6}AT_{7}$
□966	1000	412	ATAAA GGTAATATCACAGTGTAGATAGTCGGATAGATA $TATGAAAAT_{13}$
☆983	1017	101	ATATATAAATAACATAT TAATGGTCTTGATGGTGATATTGTAGTATAA T_{12}
☆1001	1032	3	ATATA TATAAAATAACGTGATGATGGTCTCGAT AGTAATTGATAAT$_{8}$
☆1015	1043	12	AT ACATCACAAACTATAAAGTAATATGATAA GGGTTTCGAT$_{13}$AA
☆1030	1067	2406	ATATATACAAGC AATGATGTACTCGGTAAATAGTGACACTGTGAATTAT T_{12}
☆1032	1067	6797	ATATATACAAGC AATGATGTACTCGGTAAATAGTGACACTGTGAATT T_{11}C
☆1055	1085	40	CTCATTAGAAA GGTGTTCGGTATAGGTAGATGATATATTT T_{3}
☆1057	1085	44	ATTAGAAA GGTGTTCGGTATAGGTAGATGATATAT AT_{10}
☆1089	1121	1	AT ATATGATAACAAACAATACTTACTTT GAGGTGTTTTGTGAGTAAAT$_{14}$
☆1094	1142	289	ATATAAA AGAACATAAACTGACACGAGGGTATAGTGATGAATGATATTT $T_{4}GT_{5}$
1094	1143	6615	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAGTGATATTT T_{10}
☆1099	1142	5793	ATATAAA AGAACATAAACTGACACGAGGGTATAGTGATGAATGATAT AT_{12}C
1099	1143	81287	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAGTGATAT AT_{14}
1101	1143	550	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAGTGAT $T_{8}GT_{4}$
1106	1143	318	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAA T_{11}
1107	1143	177	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACA T_{11}G
1108	1143	303	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAAC T_{11}
□1099	1143	162	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAATGATAT AT_{5}
□1099	1143	259	ATATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAGCGATAT ACT_{12}
□1105	1143	520	TATAA GAGAACATAAACTAGCATAGAGGCATAGTAACAAG GGATATAT$_{6}$CT$_{6}$
□1099	1143	163	ATATAA GAGAACATAAACTAGCATAGAAGCATAGTAACAAGTGATAT AT_{5}
□1099	1143	128	ATATAA GAGAACATAAACTAACATAGAGGCATAGTAACAAGTGATAT $AT_{7}GT_{6}$
□1099	1143	98	ATATAA GAGAACATAAACTAGCATAGAGACATAGTAACAAGTGATAT $AT_{9}CT_{4}$
□1099	1131	705	ATATAAGAGAACATAAA CAGCATAGAGGCATAGTAACAAGTGATAT AT_{12}GT
☆1108	1145	569	ATATAAACGTAT ACGAGAGCATAGATCAGTGTGAGAATGTAGTAAT $T_{7}CT_{6}$
☆1094	1148	295	ATATAAAA TAAACGAGAATATAAACTGATGTAGAGATATAGTGATAAGTAATATTT T_{8}
☆1107	1157	82	AT ATGTAAATGTAAACGAGAATATAGATTGATGTAGAGATATAGTAATA T_{13}
☆1150	1197	213	AT ATAAACATCCAATAGACGAGTATGTGAGAGATTTGTATGATGTAAAT T_{10}
1181	1218	4103	ATATATAA ATGCAATAGAAGATCACGCAAATAGATATCTGATAAAT T_{12}C
☆1183	1224	1399	ATA TAAATCATGCAGTAAAAGACTATGTAGATGGATATTCAGTGA $TAAT_{14}$
☆1183	1223	1017	AAATA AAATCATGCAGTAGAGAACCGTGTAAGTGAGTATCTGATAA $TTAT_{11}$
☆1183	1224	138	ATA TAAATCATGCAGTGAAGAGCTACGTAAATGGATATTCAGTGA $TAAT_{11}$
☆1210	1257	123	ATAT ACAACATCAATATTACTTAGAACGGTAACTAGATTGTGTAATAA T_{14}
☆1240	1268	95	AAACTAACGATATT CGGATCTGAGAGTAACATTGATATTATTT T_{7}
☆1242	1283	6	AC AAACTAACGATTTACGGATTTAGAGACAGTGTTAATGTTAT AT_{13}
☆1251	1282	63	ATATATAT AACTAACGATCTATGGGTTTAAAGACAGTGT $GAAT_{12}$
☆1269	1320	6	ATA TAAACAATCCTACAATGATCTCGTGTATAAGACTGATGATTTA AT_{12}

Supplementary Table 8: ND8 major gRNA classes

mRNA 5'	mRNA 3'	Copy #	ND8 Major gRNA classes
☆29	68	1	AA AAAAAAAAACATACAGAAATAGAAAGATAAGAAAGTGATA TATTAT$_8$
☆34	58	2	GTGGG ATATGAAAGTAAGAGAATAAAAAAA ATTAAT$_{13}$
☆55	98	2577	ATAT AAAACAAACAAAAAGAAGAAACAAGAAATTGAAGAGAGATATAT T$_{11}$AT
☆84	133	633	A AAATAGTAATACAACAGACAGAGCATATATAGAAATAAGTGAGAAA T$_8$AT$_7$
☆84	131	380	AT ATAGTAATACAACAAACGAGATACGTATAGAAATAGATGAGAAA T$_{13}$
87	136	6039	ATAAATAGTAACACAATGAGCAGAGTACGTATAAGAATGAGTAAA T$_{14}$
☐87	136	292	GTAAATAGTAACACAATGAGCAGAGTACGTATAAGAATGAGTAAA T$_{10}$GT
87	135	394	TAAATAGTAACACAATGAGCAGAGTACGTATAAGAATGAGTAAA T$_{12}$
87	133	593	AAATAGTAACACAATGAGCAGAGTACGTATAAGAATGAGTAAA T$_7$CT$_7$
☐96	136	191	ATAAATAGTAACACAATAGACGAGATACGTGTAGAA TAAGTGATTTAAT$_{11}$
☆111	153	70659	ATATATAAATGGTA AACTCAATGGGTGGATAAGTAGTAATGTGATGAAT T$_{13}$
☆113	153	121	ATATATAAATGGTA AACTCAATGGGTGGATAAGTAGTAATGTGATGA T$_9$CT$_5$
☆115	153	127	ATATATAAATGGTA AACTCAATGGGTGGATAAGTAGTAATGTGAT T$_7$AT$_6$
☆111	153	245	ATATATAAATGGTA AACTCAATGGGTGGATAAGTAGTAATGTGATAAAT T$_7$CT$_4$
☆111	153	147	ATATATAAATGGTA AACTCAATGGGTGGATAAGTAGTAATATGATGAAT TGTAATAT$_{15}$
☆111	153	479	ATATATAAATGGTA AACTCAATGGGTGGATAAATAGTAATGTGATGAAT T$_3$
☆117	170	4	ACAT ATAAACTAACAATGGTTGATTTAGTG**A**GTGAATGAGTAGTAATATT T$_{11}$
☆158	186	169806	ATAT GAACGCAAAGA**TG**G**A**TTACCACGAGTTAGTAAATTGATGAT AT$_{14}$
☆161	198	66	ATATAAT AAACGCAAAAAATGGTTACTATGAACTGATAGATTAAT T$_8$GT$_5$
☆161	187	124070	ATATAAT AAACGCAAAA**T**ATGGTTACTATGAACTGATAGATTAAT T$_{11}$C
☆161	187	799	AAACGCAAAA**T**ATGGTTACTATGAACTGATAGATTAAT T$_{11}$
☆186	230	24763	ATA CAATACAACGCTCTGAATCATATCGATAAAAGTGTGAGAAAT T$_{13}$
☆186	229	182	AATACAACGCTCTGAATCATATCGATAAAAGTGTGAGAAAT TTAAT$_7$AT$_4$
☆186	230	109	ATA CAATACAACGCTCTGAATCATATCGATAAAAGCGTGAGAAAT T1$_1$
☆186	220	204	ATA CAATACAAC**A**CTCTGAATCATATCGATAAAAGTGTGAGAAAT TTAAT$_{10}$
☆194	230	160	ATA CAATACAACGCTCTGAATCATATCGATAAAAGTG GGAGAAAT$_{10}$G
☆195	230	149	ATA CAATACAACGCTCTGAATCATATCGATAAAAGT TGAGAAATTTAAT$_{11}$
☆196	230	199	ATA CAATACAACGCTCTGAATCATATCGATAAAAG AGTGAGAAATTTAAT$_5$
☆213	244	173	A ACATAAACGACAGGTAATATGATGTTCTGAAT GATATCGATAAT$_5$C
☆237	267	2	CATCCAATGTAT AATTAGGGTAGATTGAGTTATGTAAAT T$_{15}$
☆240	288	3	TATGAACATCCGAT**A**CTGAACTAGGGTAGATTGAGTTATATA T1$_0$
☆275	319	109	ATATAT AAACGATGACTACTAGAATTCTACTCAATGTGAATGTTT T$_5$GT$_6$
☆276	319	28492	ATATAT AAACGATGACTACTAGAATTCTACTCAATGTGAATGTT AAT$_{14}$
☆276	314	215	GATGACTACTAGAATTCTACTCAATGTGAATGTT AATTTATGATAT$_{14}$
275	318	384	ATATAC AACGATGATCACTGAGATTTTACCTAATATGGATGTTT T$_9$
276	318	51820	ATATAC AACGATGATCACTGAGATTTTACCTAATATGGATGTT AAT$_{13}$
☐276	311	186	ATATACAACT ATGATCACTGAGATTTTACCTAATATGGATGTT AAT$_{11}$
☆277	317	1829	ATATAT ACGATGACTACCAAAATTCTATCTGATATGAATGT GATAATAT$_{11}$
☆279	319	334	ATATAT AAACGATGACTACTAGAATTCTACTCAATGTGAAT T$_6$CT$_8$
279	318	594	ATATAC AACGATGATCACTGAGATTTTACCTAATATGGAT T$_8$AT$_8$
☆284	321	140	ATATATA CAAAACGATGATTACCGAGATTTCATTTAATATGA TTGTCTAAT$_4$
☆287	319	139	ATATAT AAACGATGACTACTAGAATTCTACTCAATG AATGTTAAT$_4$
☆301	344	636	ATAT ATAACTCAATGTAGATCGATTTGTGAGATGATGATTGTCAA T$_{11}$ATC

mRNA 5'	mRNA3'	Copy #	ND8 Major gRNA classes continued
310	353	13915	ATATTA GATGATAACTCAGTGTAGATTGATCTGTAGAATGAT AATAT$_{12}$
310	350	312	ATGATAACTCAGTGTAGATTGATCTGTAGAATGAT AATATATAATGT$_{5}$
☆325	358	137	ATAA ATAACGACGATGATTCAGTGTAAATTGGT ATGTGAAATGATGT$_{12}$
☆331	364	1709	ATAT ATAAATACAACGGTGATAATTCGATGTGA TGATATCTGTAAT$_{14}$AT
☆338	382	1964	ATATAA ATGCATACAAGAATCATAGTAAGTACAGTGATGATAATTT T$_{9}$
☆339	382	1073	ATATAA ATGCATACAAGAATCATAGTAAGTACAGTGATGATAATT AT$_{8}$GT$_{5}$
☆350	386	1269	ATATA AAACATGTATACAAAAATTACAGTAAATGCGACGA AAATAAT$_{13}$
☆372	417	2*	ATAT ATAAATGCGTAATGGTATCTTTCGGGTAGATATGTGTATAAA T$_{14}$
☆391	431	23*	AT ATATATAACAAACAATGGGTGTATAATGGTATCTGAT TGTGCATTAATTTAAAAT$_{14}$
☆405	434	9	AT AAAACACATAATAAATGATGAGTGCGTGAT ATAGGTATAAT$_{12}$
☆411	443	923	A TAAACAACAAGAACACATAGCAGATAGTGGGTG ACGTATATGAT$_{13}$
☆411	442	1950	AAAAA AAACAACAAGAACACATAGCAGATAGTGGGTG ACGTATAT$_{11}$C
☆423	466	2651	ATAAAACTTGGA CGCTAATAGATATATGGTTAGATAATGAGAATATATAGT TAAT$_{11}$
☆423	466	203	TAAAACTTGGA CGCTAATAGATATATGGTTAGATAATGAGAATATATGGT TAAT$_{14}$
☆425	466	5218	ATAAAACTTGGA CGCTAATAGATATATGGTTAGATAATGAGAATATATA T$_{14}$
☆426	466	24242	ATAAAACTTGGA CGCTAATAGATATATGGTTAGATAATGAGAATATAT T1$_{2}$C
☆428	466	1071	ATAAAACTTGGA CGCTAATAGATATATGGTTAGATAATGAGAATAT T$_{10}$
☆426	482	13	AT AAAACTTGGGCGCTAATAGATATATGGTTAGATAATGAGAATATAT T$_{4}$GT$_{7}$
□477	512	176	ATATA TAAATAACATAAGACGATAACTGAATAATAGAAATT AAGTGTCAAT$_{14}$
☆489	531	21576	ATAG ATAAAACACAAATAAAGGTCAAGTGATATAGAGTGATGATTAA T$_{12}$AT
☆489	528	5835	ATAAATAT AAACACAAATAAAGGTCAAGTAATGTAGAGTGATAATTAA T1$_{2}$
☆494	536	1242	ATATAT ACTACATAAAACACAGATAAGAATCAGATAGTGTGAGATAATA T$_{9}$GT$_{5}$
☆495	536	151	ATATAT ACTACATAAAACACAGATAAGAATCAGATAGTGTGAGATAAT TTTTCT$_{10}$
495	539	884	ATAT ATAACTACACAAAATATAGGTAAAAGTTAGATGATGTGAAATGAT T$_{11}$
☆500	540	2861	ATATAT AATAACTACACGAGACATGAATAGAAATTAAGTGATGTAAA T$_{12}$
☆554	598	20	ATATA TAATTTCACCGTGAATTTCTTTAGATTGTAGATATGATAA T$_{13}$
☆554	598	7	ATATA TAATTTCACCGTGGATTTCTTTAGATT**A**TAGATATGATAA T$_{6}$

Supplementary Table 9: ND9 major gRNA classes

mRNA 5'	mRNA 3'	Copy #	ND9 major gRNA Classes
☆33	71	18	ATAT AAACATAAACGAAATGAGCATAGAAGTATATGTATGATG ATATTAT$_{14}$
☆60	105	540	A TATAACACAAACAATAGAATAAAGTTAAGTGAGAATATGAGTGA TTTAT$_{11}$
☆87	124	1	ATATCAAC AAACAAATAGAGCACTGTCTATGATATAAGTGATAA TTCT$_{9}$
☆117	160	1145	ATAT ATAAAACAATAAAGAAATAGAAGGCTACAGTTAATGAGATAAAT T$_{13}$
☆130	167	137	AAAATTAACAAAACAATAAAAGAACGAGAAATTACAGT GAATGAAGTAAAT$_{7}$
☆149	193	1196	ATAT AATAAAAACATACAATAAAATAGAAGGAAACTAATAAGATGATAG T$_{15}$
☆176	216	3869	ATACAATAT AAAACAAAAGTCACAGATTAAGGGATAGAGATGTGTGATAA T$_{14}$
☆177	216	357	ATACAATAT AAAACAAAAGTCACAGATTAAGGGATAGAGATGTGTGATA T$_{11}$
201	242	87	ATATAA AATCAATAACAGATCATGATGATATAGAGATAGAAGTTATAA T$_{7}$GT$_{7}$
☆239	288	23*	AT AAATATACAACAATATAGAACGATGAAAGTGAAGATTATAAGAGTTAATT T$_{5}$CT$_{6}$
238	279	86	AAAATTAT ACAACATAAGACGACGAAGATAAAGGTCATAGAGATTAATTA T$_{11}$
239	279	569	AAATTAT ACAACATAAGACGACGAAGATAAAGGTCATAGAGATTAATT T$_{5}$CT$_{6}$
□239	268	561	AACATAAAT CGGTGAAGATAGAGACTATGAGAATTAATT T$_{7}$
□240	268	346	ATAAAT CGGTGAAGATAGAGACTATGAGAATTAAT ATGT$_{15}$
☆272	312	43	ATAA GAACACACAGAGACAAGCAGAGTAAAGTGTATAGTGACATA T$_{6}$
☆297	339	270	ATAT ACAAACAACACAAGATAGAGCACAAATGAATGCACAGGGATAA TAT$_{11}$
☆298	343	1741	GTAAACAAACAACACAGAGCAGAATACAAGTGAGTATATGAGAATA T$_{11}$GT
☆298	343	2681	ATAAACAAACAACACAGAGCAGAATACAAGTGAGTATATGAGAATA T$_{11}$
☆303	339	44686	ATAT ACAAACAACACAAGATAGAGCACAAATGAATGCACAG TGATAAT$_{13}$
☆304	339	139	ATAT ACAAACAACACAAGATAGAGCACAAATGAATGCACA CTGATAAT$_{13}$
☆319	366	36	AT ATTAAAACACAATCCGAAGAGTACAAATAGACAGTATAAGATAAAAT T$_{11}$
☆319	366	17	AT ATTAAAACACAATCCGAAGAGTATAAATAGACAGTATAAGATAAAAT TAAT$_{19}$
☆349	392	270	ATATAT AGACGCATAATAAAAGCAACTGAGGCTAGAATATGATTTAA T$_{7}$GT$_{11}$
☆349	392	232	TAT AAACGTATAACAAAAGCAGTTAAAGCTAGAATGTGATTTAA T$_{8}$AT$_{5}$
☆352	392	10040	ATATT AAACGCATAACAGAAATGATTAGAACTGAGATATGATT AAT$_{13}$C
□382	421	1	AATCAAAATATTCGTGTTCTGATGATAGAGATGTATAAT T$_{10}$
409	447	761	ATATAAA ATTACCAACAGAATAGAAGCTAGACAAGTTAAGATATTT T$_{8}$
409	447	667	ATATAAA ATTACCAACAGAATAGAAGCTAGACAAGTTAAGATATTC T$_{12}$
☆439	484	72	ATAT AAACCAATCAACGAGTAAATGATGTAGAGTATTATTGTCAAT T$_{8}$AT$_{4}$
468	514	234	ATAT ATAACACTTCAACGGAGAGAGACCAATGAGAGATCAGTTAATA T$_{7}$GT$_{5}$
☆502	549	746	ATATAAAATAACAATACAAGTGAATCAGATAATGGATGATGTTTCAAT T$_{12}$G
☆533	566	11	AACGTACATATG ATCTCTTCTGCTAGTATATAAGATGATAATAT T$_{11}$
☆534	566	15	AAACGTACATATG ATCTCTTCTGCTAGTATATAAGATGATAATA AT$_{14}$
☆535	578	13	ATATT AACGTACATACTGTCTTCTCTATTGACATATAAGATGATAAT T$_{13}$
☆568	604	76	ATATA TATGCAACAACAGAGATAATATTGTAGATGTATATGT GATATCGT$_{10}$
☆582	612	66	TATT AATTGGTATGTGACAATAGAAGTGATATT T$_{9}$
☆609	644	274	ATATATA AGAATTACAATGGT GTATTAAGTGAAGTAATGTAAATGAGAATT T$_{12}$
☆615	659	1	ATATATAA AGGATTACAGTGGTGATATTGAATAGAGTGATGTAAATG T$_{12}$

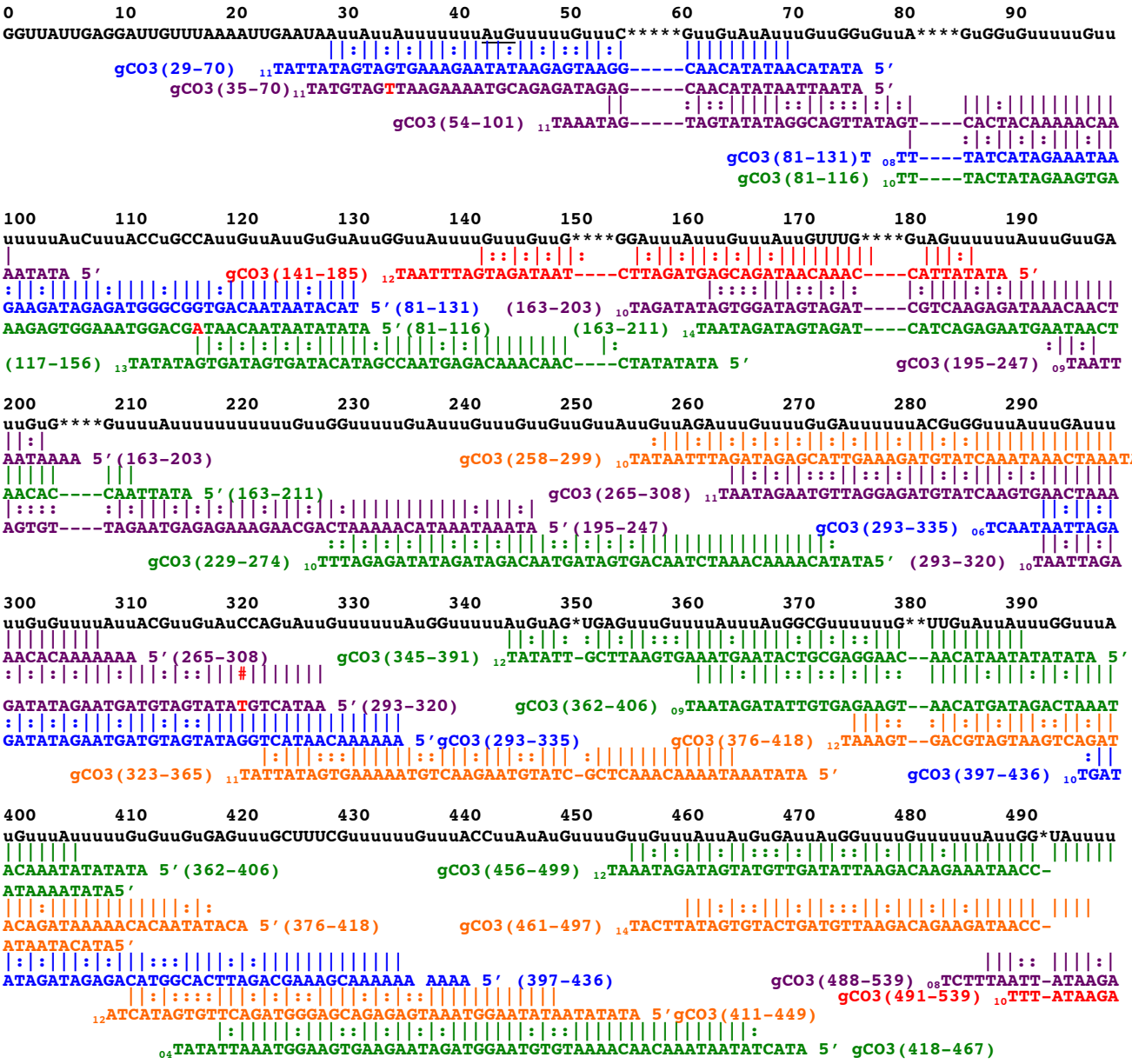
Supplementary Table10: RSP12 major gRNA classes

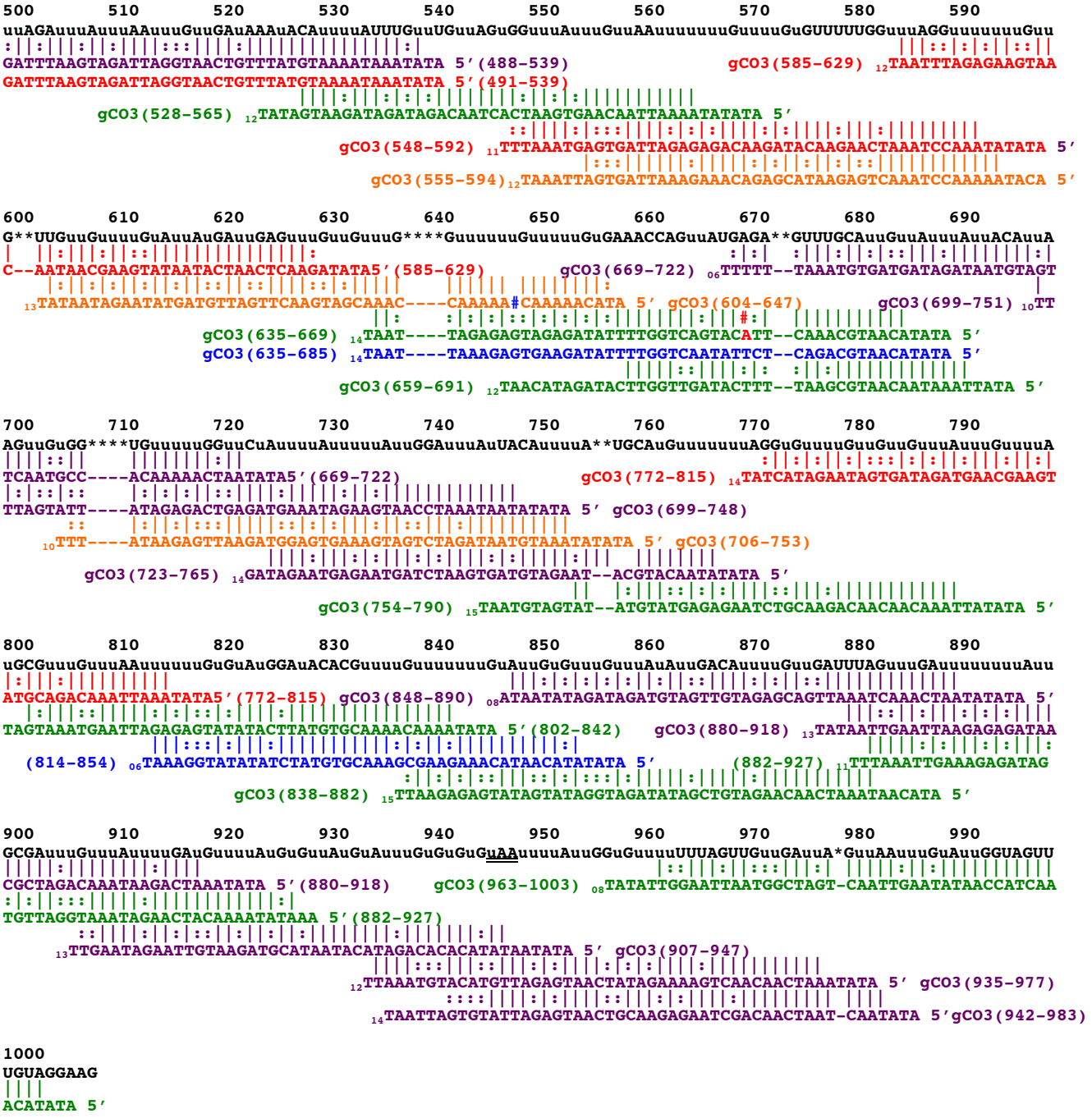
mRNA 5'	mRNA 3'	copy #	RSP12 Major gRNA classes
35	76	2218	ATA AACAACCGTACAGAAGTTACATATGCAGAGAAGGTGAGAT TTAT$_{12}$
☆43	78	12531	ATAT ACAACAACCATATGAAGATCATGTACGTAGAAGA TTGATATAT$_{14}$
☆63	109	5122	AT ATAATATAAAACAAATAAGACAGAGTGTAGATAGTAATTGTATGA TAT$_{12}$
☆73	115	120	A TATATAATAACATAAAACAAATAGAACGAGATGTAAATGATA TCTAT$_{7}$AT$_{5}$
☆74	106	1212	ATAT ATATAAAACAAATAGAATAGAACGTAGATGAT TACTGTATAAT$_{10}$AT
☆92	121	90	AACTGGGCATCT CGGATTTGTATAGTGATATAAAGTGAATAA T$_{4}$
☆96	121	233	AATCA CGGATTTATATAGTAACGTAAAATGA TATTAT$_{12}$
☆96	131	2	ATATAGAATTA GGCAATCGCGGATTTATATAGTAACGTAAAATGA TAT$_{10}$
☆119	158	3	ACT TACAATACACGTTGGTTATCGGAGTT**A**GGTGATTGTG ACTTAT$_{10}$
☐132	164	18	CATATAAA GGCATATAGTATACGTCGGTTACTGGGATTG**T**GTAAT$_{7}$
☐139	170	44	ATATA ACGGCATATAGTATACGTCGGTTACT**A**GGATTG**T**GTAAT$_{4}$
☆158	207	67	ATAT ATAACGCAACATTCGAATGAGATTATGTAGATGAAATATGGTAT TAT$_{5}$
☆164	195	146	ATAACGCAACA TCAGATGAGATTATATAAGTGAGATATG ATATAT$_{11}$
169	208	4724	ATAAAT AACAACGCAATATCCGAGTAAGATTGTATAAGTGAGATAT AT$_{12}$
☐194	235	3025	ATATATAATGAC TAACTAAACTGATAAAGCAGTAGAAGAGATGATGTAATATTT T$_{11}$
☐196	235	222	TAATGAC TAACTAAACTGATAAAGCAGTAGAAGAGATGATGTAATAT AT$_{14}$
☐198	235	4950	ATATATAATGAC TAACTAAACTGATAAAGCAGTAGAAGAGATGATGTAAT T$_{11}$
☆200	246	609	ATAT ATAATGACATAATTAGACTGATAAGATAACGAGAAAAGTGATGTA T$_{12}$
☆203	246	341382	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAGATAAT AT$_{14}$
☆204	246	430	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAGATAA AAT$_{13}$
☆205	246	1091	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAGATA T$_{13}$
☆206	246	922	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAGAT T$_{13}$G
☆203	246	544	ATATAT ATAATGACGTAACTGAGCTAATGAAGCAATGAGAGAGATAAT AT$_{13}$
☆203	250	267	AT ATAAATAATGACATAACTAGGTTAGTAAAGTGACGAAGAAGATAAT ATTAT$_{4}$
☆203	246	370	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGGGATAAT AT$_{12}$
☆203	246	1324	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAAATAAT AT$_{9}$AT$_{5}$
☆205	246	177	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAAATA T$_{9}$GT$_{5}$
☆207	246	370	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAGA AATAT$_{13}$
☆208	246	484	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGAG TTAATAT$_{11}$
☆209	246	964	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAGA TAATAT$_{12}$
☆210	246	282	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGAG CGATAATAT$_{12}$CT
☆211	246	268	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAGA T$_{12}$
☆212	246	176	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAATGAG CGAGATAATAT$_{10}$CT$_{3}$
☆203	246	312	ATATAT ATAATGACGTAACTGAACTAATGAGGCAATGAGAGAGATAAT AT$_{12}$
☆203	246	530	ATATAT ATAATGACGTAACTGAGCTAATGAGACAATGAGAGAGATAAT AT$_{11}$G
☆203	246	196	ATATAT ATAATGACGTAACTGAGTTAATGAGGCAATGAGAGAGATAAT AT$_{8}$AT$_{4}$
☆203	246	141	ATATAT ATAATGACGTAACTGAGCTAATGAGGCGATGAGAGAGATAAT AT$_{9}$GT$_{9}$
☆203	246	117	ATATAT ATAATGACGTAACTGAGCCAATGAGGCAATGAGAGAGATAAT AT$_{9}$AT$_{6}$
☆203	246	157	ATATAT ATAATGACGTAACTGAGCTAATGGGGCAATGAGAGAGATAAT AT$_{10}$C
☆203	246	193	ATATAT ATAATGACGTAACTGAGCTAATGAGGCAACGAGAGAGATAAT AT$_{9}$AT$_{11}$
☆203	246	130	ATATAT ATAATGACGTAACTAAGCTAATGAGGCAATGAGAGAGATAAT AT$_{13}$
☆203	246	173	ATATAT ATAATGACGTAACTGAGCTAATAAGGCAATGAGAGAGATAAT AT$_{14}$
☆203	246	119	ATATAT ATAATGACGTAACTGAGCTAATGAGGTAATGAGAGAGATAAT AT$_{12}$
☆203	246	116	ATATAT ATAATGACGTAACTGGGCTAATGAGGCAATGAGAGAGATAAT AT$_{13}$

mRNA 5'	mRNA 3'	copy #	RSP12 Major gRNA classes continued
☆234	264	35	TAG TGCCTTCTATAGTAGATGATGATATA $TGAT_{12}$
☐234	280	24	ATATA AGATCAACAAAACTGCCATTTTCTGTAGTAAGTGATGATATA T_9AT_4
☐248	281	14	ATA TAAATCAACAGAACTGCCATCTTTTGTAGTA TAGTGATATAAT$_{12}$
☐267	322	10	ATA TACAATACGTGTATGATATTTTATACTGGGTAGATCAGTGAAATT T_7
☐267	322	16349	ATA TACAATACGTGTATGATATTTTATACT**A**GGTAGATCAGTGAAATT T_{12}
309	349	128	AAATAT AACATATCTTATATCTGAATCTAACTTGTAATATGTG AAT_{15}

Supplementary Figure 1: The gRNA/mRNA sequence alignments for the fully edited mRNAs. The cDNA sequence of the most abundant gRNA in its sequence population is shown aligned beneath the fully edited mRNA. Lowercase u's indicate uridines added by editing, asterisks (*) indicate encoded uridines deleted during editing. Nucleotides and deletion sites in the fully edited mRNA were numbered starting from the 5' end (+1 = 0). gRNAs are colored based on transcript abundance as follows: Blue < 100; Green <1000; Purple <10,000; Orange < 100,000; Red > 100,000; Black = not quantified. Watson/Crick (|) and G:U base pairs (:) are indicated. In addition, mismatches (including C:A base pairs) are indicated by the number sign (#) and shown in contrasting colors. A) Cytochrome Oxidate III; B) C-Rich Region 3. The potential mRNA sequence generated by an alternative CR3 initiating gRNA is also shown. C) C-Rich Region 4; D) Cytochrome b; E) Maxicircle Unidentified Reading Frame II; F) NADH Dehydrogenase Subunit 3; G) NADH Dehydrogenase Subunit 7; H) NADH Dehydrogenase Subunit 8. The potential alternative sequence generated by a very abundant 3-mismatch gRNA is shown boxed. I) NADH Dehydrogenase Subunit 9; J) RSP-12.

Supplementary Figure 1 A: Cytochrome Oxidase III

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GATTTAAGTAGATTAGGTAACTGTTTATGTAAAATAAATATA 5′(488-539)
gCO3(585-629) 12TAATTTAGAGAAGTAA
GATTTAAGTAGATTAGGTAACTGTTTATGTAAAATAAATATA 5′(491-539)
gCO3(528-565) 12TATAGTAAGATAGATAGACAATCACTAAGTGAACAATTAAAATATATA 5′
gCO3(548-592) 11TTTAAATGAGTGATTAGAGAGACAAGATACAAGAACTAAATCCAAATATATA 5′
gCO3(555-594)12TAAATTAGTGATTAAAGAAACAGAGCATAAGAGTCAAATCCAAAAATACA 5′
600 610 620 630 640 650 660 670 680 690
C--AATAACGAAGTATAATACTAACTCAAGATATA5′(585-629)
gCO3(669-722) 06TTTTT--TAAATGTGATGATAGATAATGTAGT
13TATAATAGAATATGATGTTAGTTCAAGTAGCAAAC----CAAAAA#CAAAAACATA 5′ gCO3(604-647)
gCO3(699-751) 10TT
gCO3(635-669) 14TAAT----TAGAGAGTAGAGATATTTTGGTCAGTACATT--CAAACGTAACATATA 5′
gCO3(635-685) 14TAAT----TAAAGAGTGAAGATATTTTGGTCAATATTCT--CAGACGTAACATATA 5′
gCO3(659-691) 12TAACATAGATACTTGGTTGATACTTT--TAAGCGTAACAATAAATTATA 5′
700 710 720 730 740 750 760 770 780 790
TCAATGCC----ACAAAAACTAATATA5′(669-722)
gCO3(772-815) 14TATCATAGAATAGTGATAGATGAACGAAGT
TTAGTATT----ATAGAGACTGAGATGAAATAGAAGTAACCTAAATAATATATA 5′ gCO3(699-748)
10TTT----ATAAGAGTTAAGATGGAGTGAAAGTAGTCTAGATAATGTAAATATATA 5′ gCO3(706-753)
gCO3(723-765) 14GATAGAATGAGAATGATCTAAGTGATGTAGAAT--ACGTACAATATATA 5′
gCO3(754-790) 15TAATGTAGTAT--ATGTATGAGAGAATCTGCAAGACAACAACAAATTATATA 5′
800 810 820 830 840 850 860 870 880 890
ATGCAGACAAATTAAATATA5′(772-815) gCO3(848-890) 08ATAATATAGATAGATGTAGTTGTAGAGCAGTTAAATCAAACTAATATATA 5′
TAGTAAATGAATTAGAGAGTATATACTTATGTGCAAAACAAAATATA 5′(802-842)
gCO3(880-918) 13TATAATTGAATTAAGAGAGATAA
(814-854) 06TAAAGGTATATATCTATGTGCAAAGCGAAGAAACATAACATATATA 5′
(882-927) 11TTTAAATTGAAAGAGATAG
gCO3(838-882) 15TTAAGAGAGTATAGTATAGGTAGATATAGCTGTAGAACAACTAAATAACATA 5′
900 910 920 930 940 950 960 970 980 990
CGCTAGACAAATAAGACTAAATATA 5′(880-918)
gCO3(963-1003) 08TATATTGGAATTAATGGCTAGT-CAATTGAATATAACCATCAA
TGTTAGGTAAATAGAACTACAAAATATAAA 5′(882-927)
13TTGAATAGAATTGTAAGATGCATAATACATAGACACACATATAATATA 5′ gCO3(907-947)
12TTAAATGTACATGTTAGAGTAACTATAGAAAAGTCAACAACTAAATATA 5′ gCO3(935-977)
14TAATTAGTGTATTAGAGTAACTGCAAGAGAATCGACAACTAAT-CAATATA 5′gCO3(942-983)
1000
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ACATATA 5′

Supplementary Figure 1 B: C-Rich Region 3

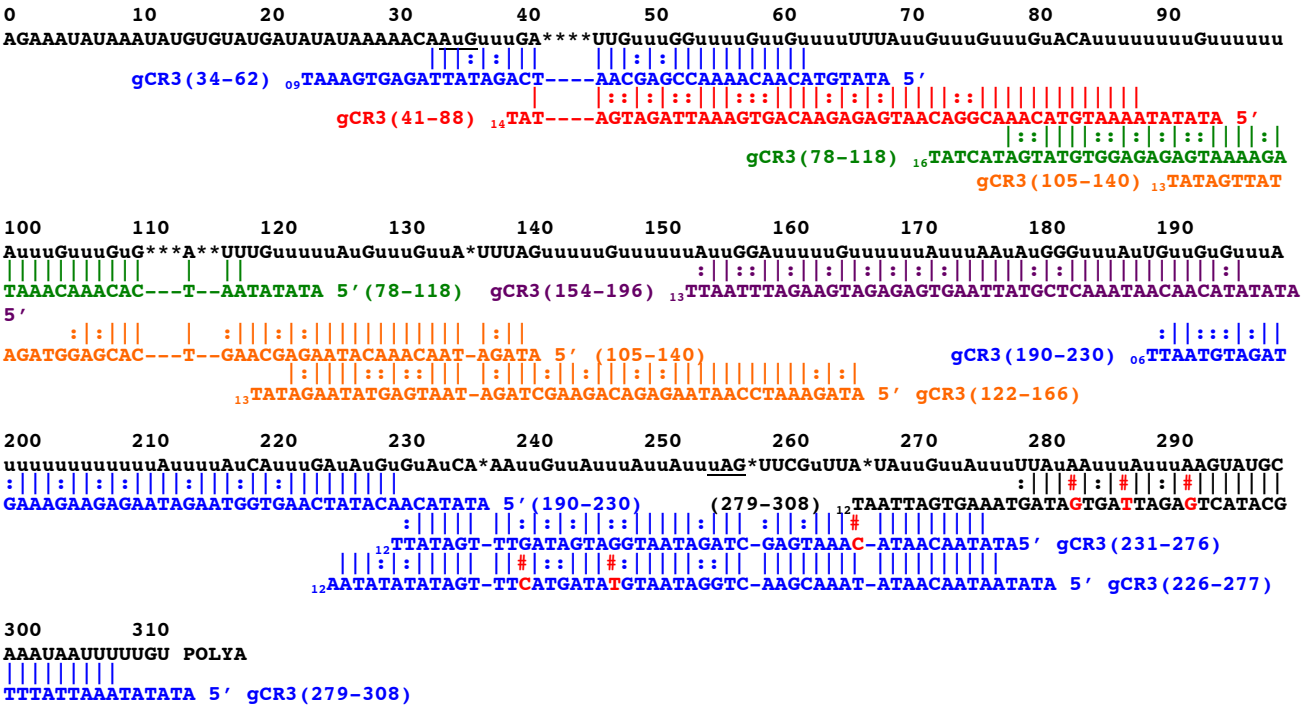
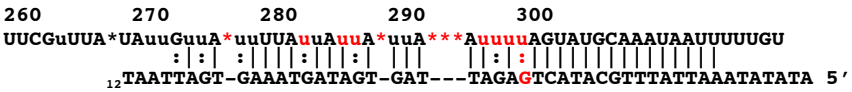
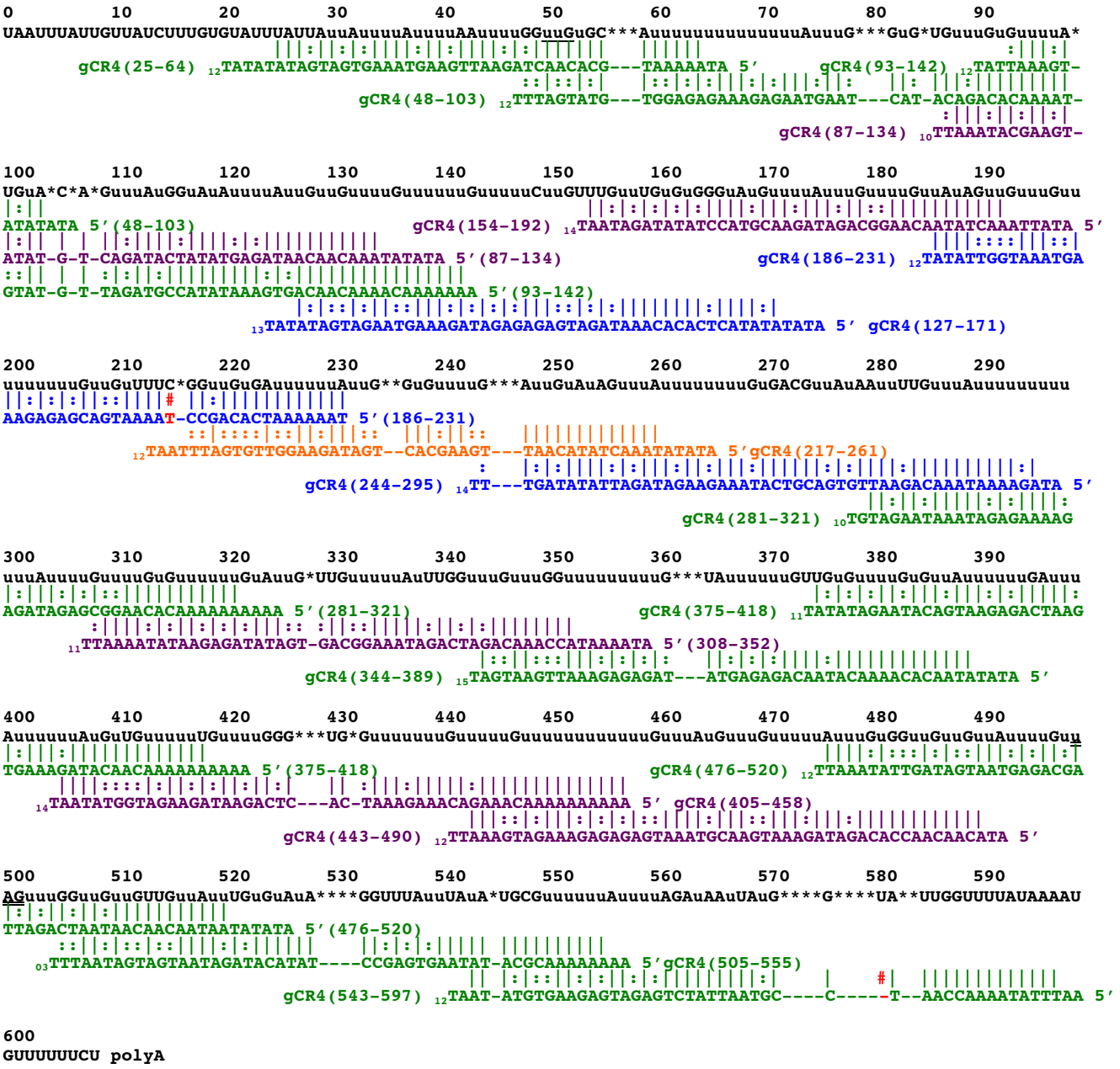


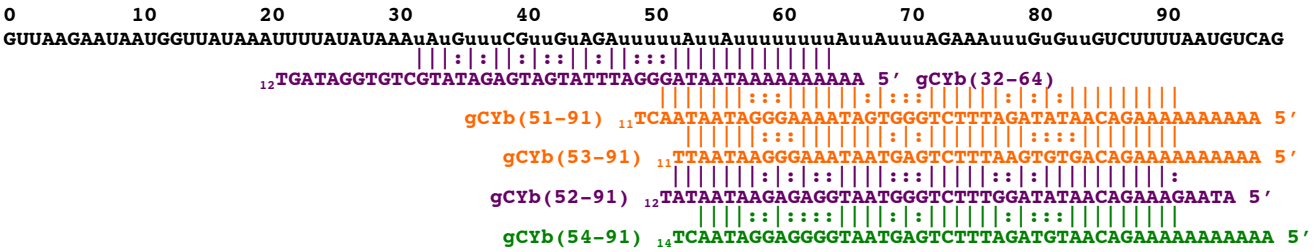
Figure 1 B1. Alternative sequence generated by gCR3(279-308).



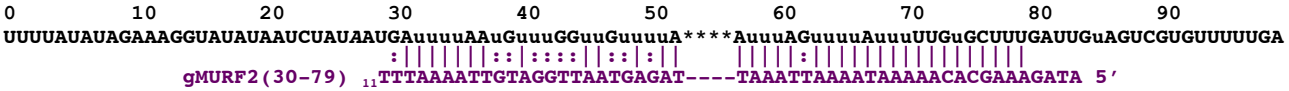
Supplementary Figure 1 C: C-Rich Region 4



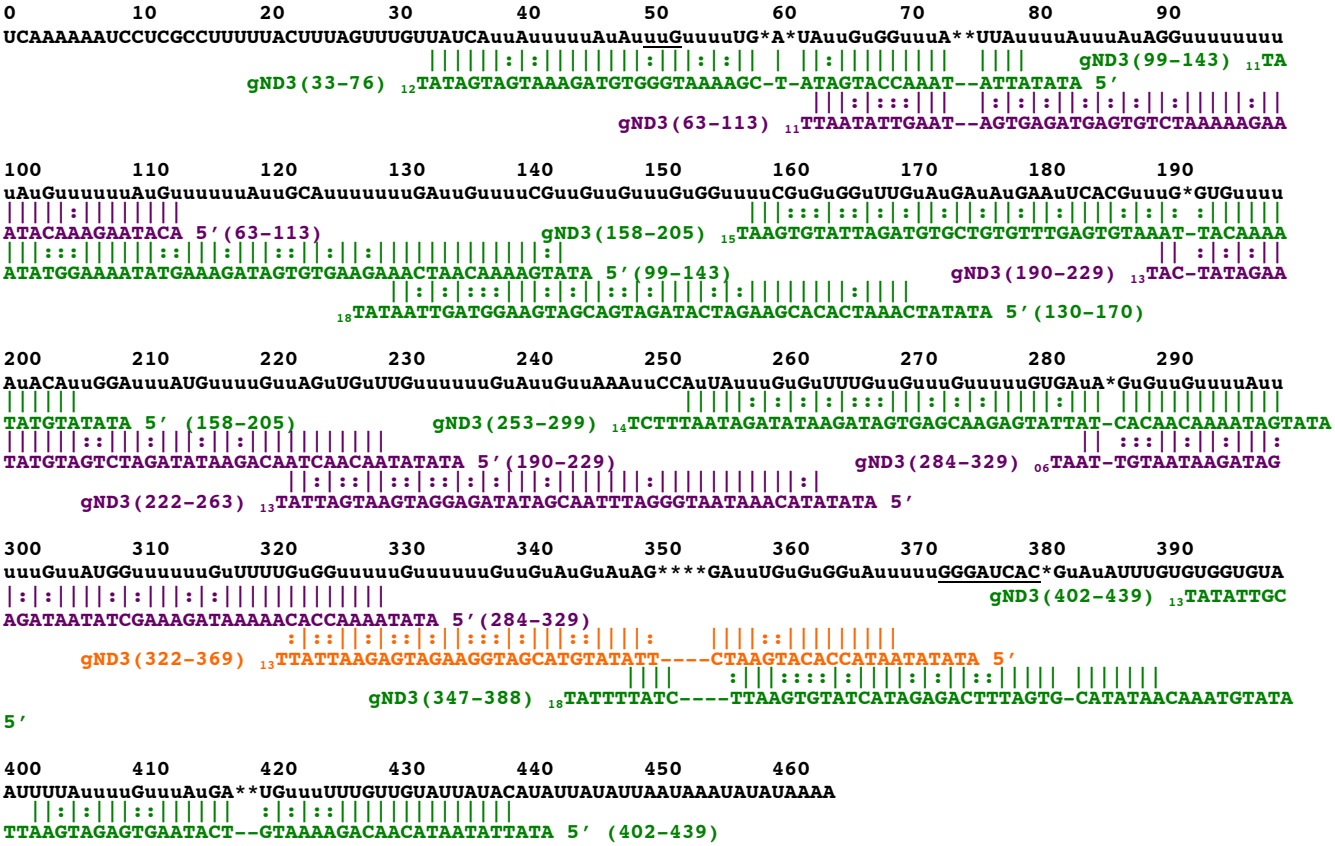
Supplementary Figure 1 D: Cytochrome B



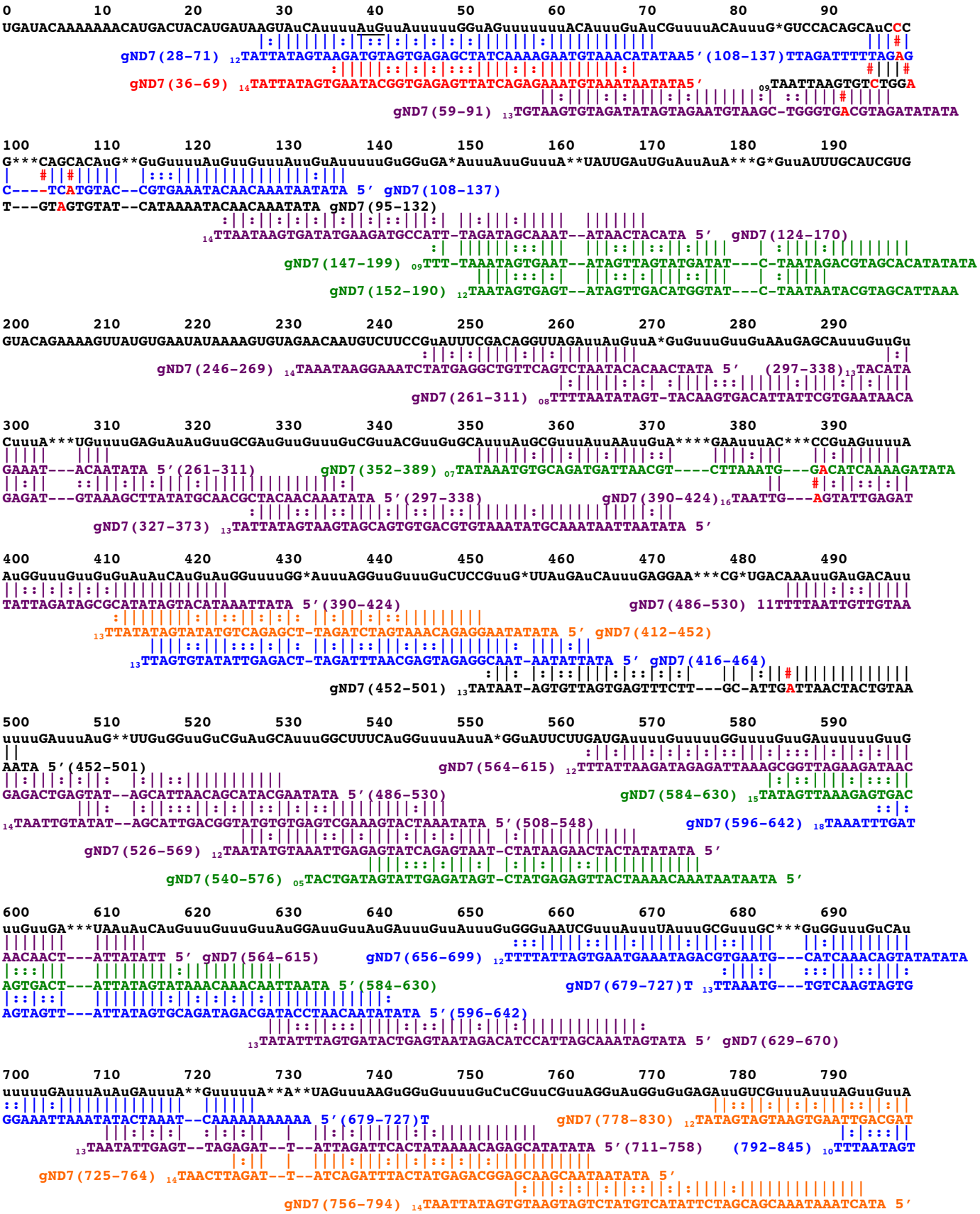
Supplementary Figure 1 E: Murf II

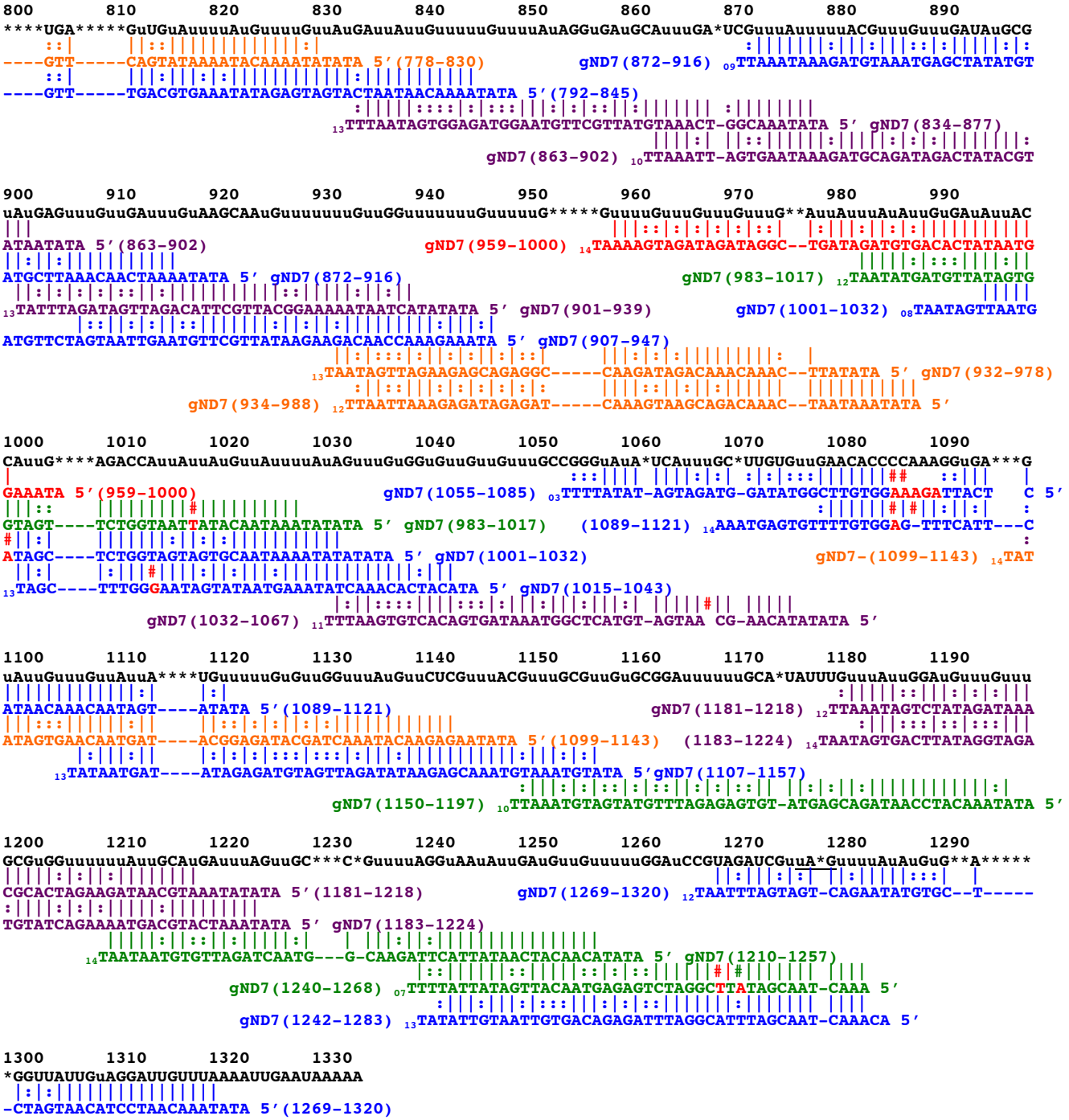


Supplementary Figure 1 F: NADH Dehydrogenase Subunit 3

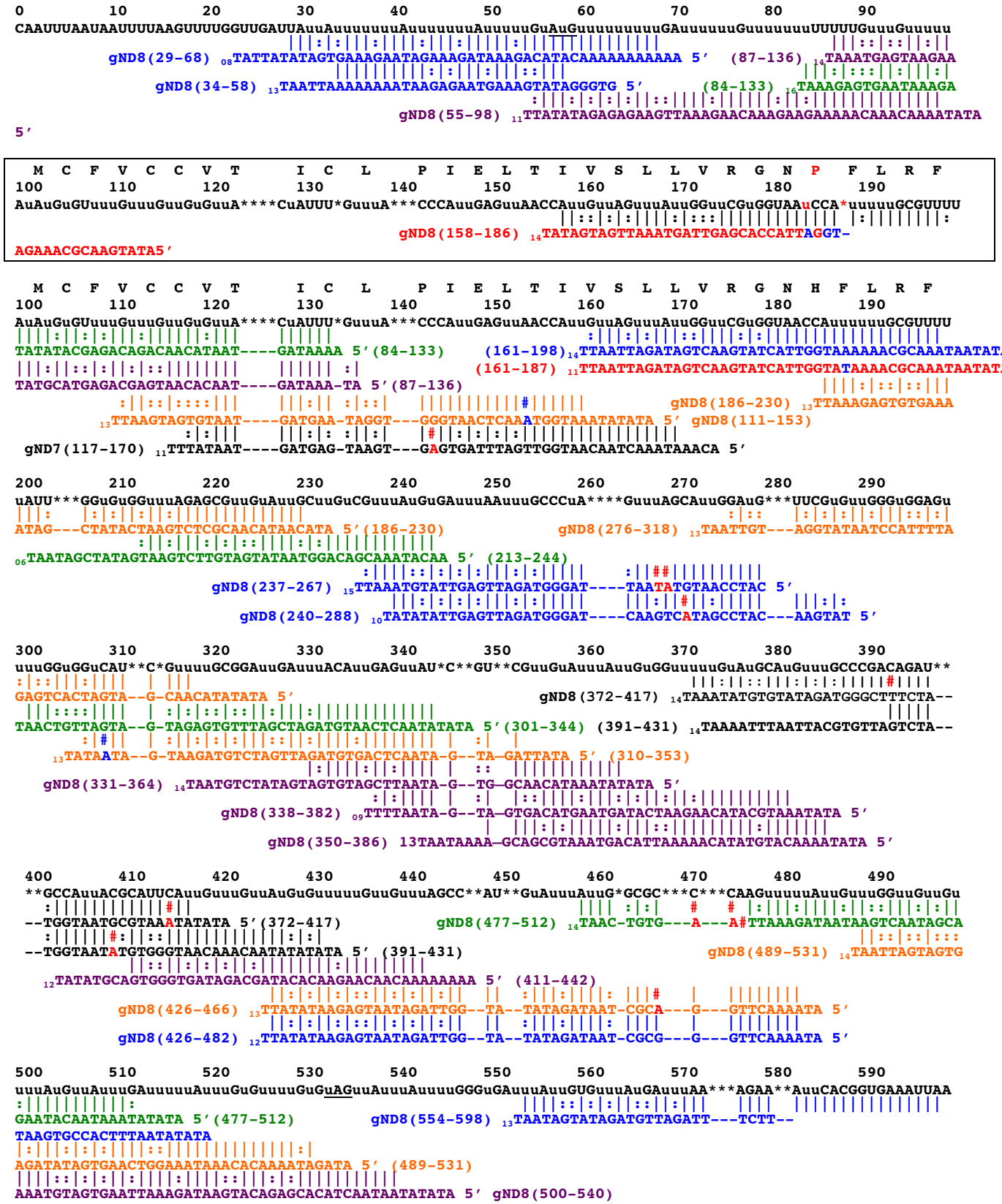


Supplementary Figure 1 G: NADH Dehydrogenase Subunit 7

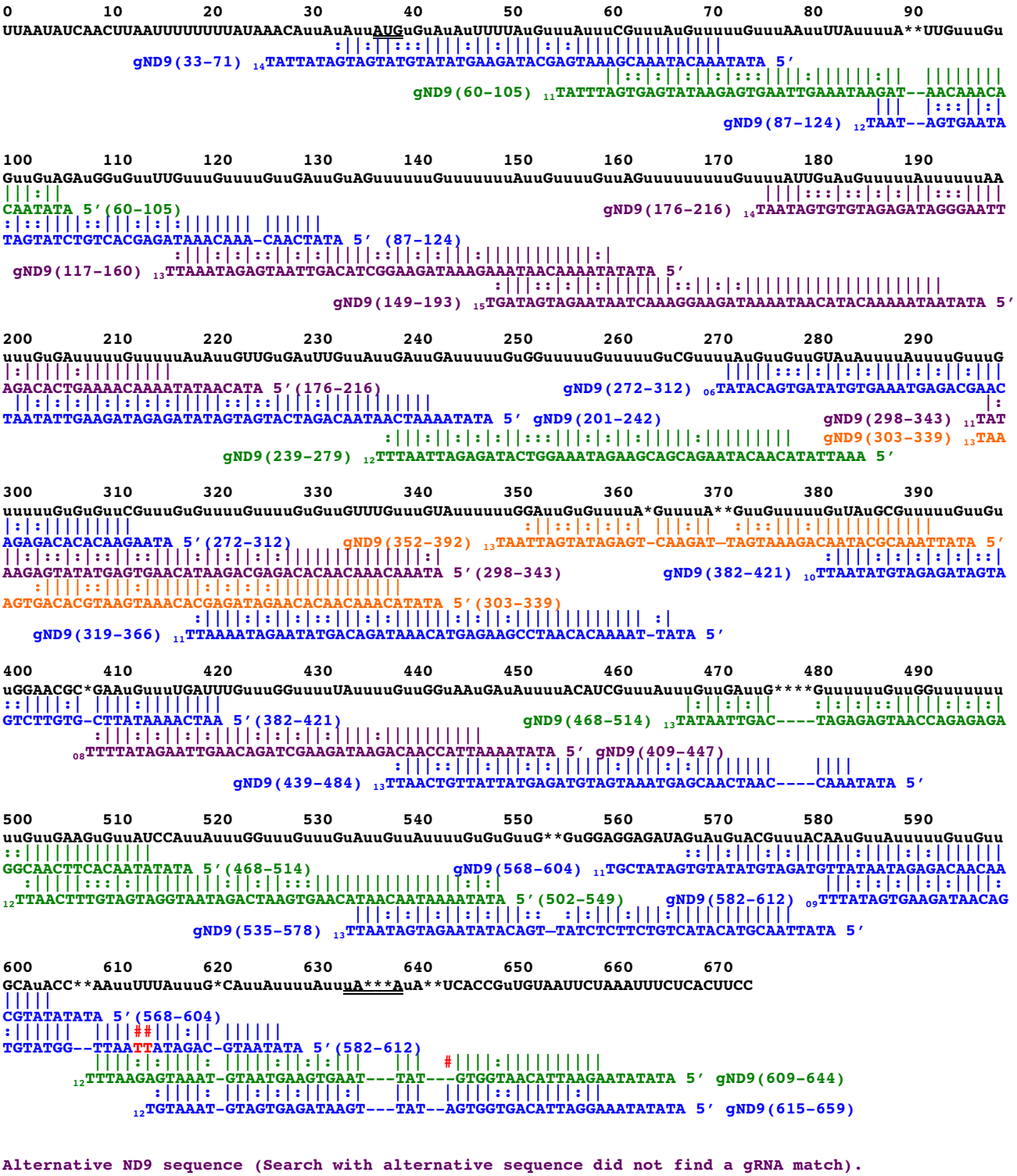



800 810 820 830 840 850 860 870 880 890
****UGA*****GuUGuAuuuuAuGuuuuGuuAuGAuuAuuGuuuuuGuuuuAuAGGuGAuGCAuuuGA*UCGuuuAuuuuuACGuuuGuuuGAUAuGCG
----GTT-----CAGTATAAAATACAAAATATATA 5′(778-830)
gND7(872-916)
09TTAAATAAAGATGTAAATGAGCTATATGT
----GTT-----TGACGTGAAATATAGAGTAGTACTAATAACAAAATATA 5′(792-845)
13TTTAATAGTGGAGATGGAATGTTCGTTATGTAAACT-GGCAAATATA 5′ gND7(834-877)
gND7(863-902)
10TTAAATT-AGTGAATAAAGATGCAGATAGACTATACGT
900 910 920 930 940 950 960 970 980 990
uAuGAGuuuGuuGAuuuGuAAGCAAuGuuuuuuuuGuuGGuuuuuuuuGuuuuuG*****GuuuuGuuuGuuuGuuuG**AuuAuuuAuAuuGuGAuAuuAC
ATAATATA 5′(863-902)
gND7(959-1000)
14TAAAAGTAGATAGATAGGC--TGATAGATGTGACACTATAATG
ATGCTTAAACAACTAAAATATA 5′ gND7(872-916)
gND7(983-1017)
12TAATATGATGTTATAGTG
13TATTTAGATAGTTAGACATTCGTTACGGAAAAATAATCATATATA 5′ gND7(901-939)
gND7(1001-1032)
08TAATAGTTAATG
ATGTTCTAGTAATTGAATGTTCGTTATAAGAAGACAACCAAAGAAATA 5′ gND7(907-947)
13TAATAGTTAGAAGAGCAGAGGC-----CAAGATAGACAAACAAAC--TTATATA 5′ gND7(932-978)
gND7(934-988)
12TTAATTAAAGAGATAGAGAT-----CAAAGTAAGCAGACAAAC--TAATAAATATA 5′
1000 1010 1020 1030 1040 1050 1060 1070 1080 1090
CAuuG****AGACCAuuAuuAuGuuAuuuuAuAGuuuGuGGuGuuGuuGuuuGCCGGGuAuA*UCAuuuGC*UUGUGuuGAACACCCCAAAGGuGA***G
GAAATA 5′(959-1000)
gND7(1055-1085)
03TTTTATAT-AGTAGATG-GATATGGCTTGTGGAAAGATTACT C 5′
GTAGT----TCTGGTAATTATACAATAAATATATA 5′ gND7(983-1017)
(1089-1121)
14AAATGAGTGTTTTGTGGAG-TTTCATT---C
ATAGC----TCTGGTAGTAGTGCAATAAAATATATATA 5′ gND7(1001-1032)
gND7-(1099-1143)
14TAT
13TAGC----TTTGGGAATAGTATAATGAAATATCAAACACTACATA 5′ gND7(1015-1043)
gND7(1032-1067)
11TTTAAGTGTCACAGTGATAAATGGCTCATGT-AGTAA CG-AACATATATA 5′
1100 1110 1120 1130 1140 1150 1160 1170 1180 1190
uAuuGuuuGuuAuuA****UGuuuuuGuGuuGGuuuAuGuuCUCGuuuACGuuuGCGuuGuGCGGAuuuuuuGCA*UAUUUGuuuAuuGGAuGuuuGuuu
ATAACAAACAATAGT----ATATA 5′(1089-1121)
gND7(1181-1218)
12TTAAATAGTCTATAGATAAA
ATAGTGAACAATGAT----ACGGAGATACGATCAAATACAAGAGAATATA 5′(1099-1143)
(1183-1224)
14TAATAGTGACTTATAGGTAGA
13TATAATGAT----ATAGAGATGTAGTTAGATATAAGAGCAAATGTAAATGTATA 5′gND7(1107-1157)
gND7(1150-1197)
10TTAAATGTAGTATGTTTAGAGAGTGT-ATGAGCAGATAACCTACAAATATA 5′
1200 1210 1220 1230 1240 1250 1260 1270 1280 1290
GCGuGGuuuuuuAuuGCAuGAuuuAGuuGC***C*GuuuuAGGuAAuAuuGAuGuuGuuuuuGGAuCCGUAGAUCGuuA*GuuuuAuAuGuG**A*****
CGCACTAGAAGATAACGTAAATATATA 5′(1181-1218)
gND7(1269-1320)
12TAATTTAGTAGT-CAGAATATGTGC--T-----
TGTATCAGAAAATGACGTACTAAATATA 5′ gND7(1183-1224)
14TAATAATGTGTTAGATCAATG---G-CAAGATTCATTATAACTACAACATATA 5′ gND7(1210-1257)
gND7(1240-1268)
07TTTTATTATAGTTACAATGAGAGTCTAGGCTTATAGCAAT-CAAA 5′
gND7(1242-1283)
13TATATTGTAATTGTGACAGAGATTTAGGCATTTAGCAAT-CAAACA 5′
1300 1310 1320 1330
*GGUUAUUGuAGGAUUGUUUAAAAUUGAAUAAAAA
-CTAGTAACATCCTAACAAATATA 5′(1269-1320)

Supplementary Figure 1 H: NADH Dehydrogenase Subunit 8



Supplementary Figure 1 I: NADH Dehydrogenase Subunit 9



Supplementary Figure 1 J: Ribosomal Protein S12