











## 1 ANEXOS

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### 1.1 PROTOCOLO BLAST LOCAL DE PARA LA EXTRACCIÓN DE SECUENCIAS:


- 1.1.1 Descargar el programa BLAST de la página de la NCBI en el siguiente link:  
[https://blast.ncbi.nlm.nih.gov/Blast.cgi?PAGE\\_TYPE=BlastDocs&DOC\\_TYPE=Download](https://blast.ncbi.nlm.nih.gov/Blast.cgi?PAGE_TYPE=BlastDocs&DOC_TYPE=Download)
- 1.1.2 Guardar la “secuencia local” (su secuencia completa de la que quiere hacer la extracción) como un documento fasta en una carpeta creada previamente en el escritorio.

La secuencia local que usted observa a continuación es una secuencia FASTA descargada del NCBI que contiene por defecto 9 archivos con diferentes formatos (ej. NHR, NND, NSI, NAL, entre otros):

 refseq_rna.00.nhr	26/08/2016 2:03 a. ...	Archivo NHR	392,644 KB
 refseq_rna.00.nin	26/08/2016 2:03 a. ...	Archivo NIN	29,350 KB
 refseq_rna.00.nnd	26/08/2016 2:03 a. ...	Archivo NND	19,804 KB
 refseq_rna.00.nni	26/08/2016 2:03 a. ...	Archivo NNI	78 KB
 refseq_rna.00.nog	26/08/2016 2:03 a. ...	Archivo NOG	9,784 KB
 refseq_rna.00.nsd	26/08/2016 2:03 a. ...	Archivo NSD	104,632 KB
 refseq_rna.00.nsi	26/08/2016 2:03 a. ...	Archivo NSI	2,177 KB
 refseq_rna.00.nsq	26/08/2016 2:03 a. ...	Archivo NSQ	976,562 KB
 refseq_rna.00.tar.gz	26/08/2016 2:40 p....	Archivo WinRAR	1,005,187 KB
 refseq_rna.nal	26/08/2016 2:15 a. ...	Archivo NAL	1 KB

Se recomienda en este paso revisar los ejecutables de la página del NCBI en el siguiente link <https://www.ncbi.nlm.nih.gov/guide/howto/run-blast-local/> para que pueda seguir el mismo ejemplo.

- 1.1.3 Descargar la secuencia “consulta” (o de referencia) deseada del gen bank y guardarla en la misma carpeta del escritorio en formato .txt (bloc de notas) con códigos fasta. Debe tener en cuenta que esta secuencia es la que usted quiere alinear con su secuencia local.

 test_query.txt	27/08/2016 11:20 ...	Documento de tex...	3 KB
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1.1.4 Abrir el cmd del ordenador (“command prompt” o “símbolo del sistema”). Este lo encuentra en el buscador de su ordenador.

1.1.5 Ejecutar en el cmd los siguientes comandos:

- C:\Users>cd “ubicación de la carpeta” (sin comillas)

```
C:\Users>cd\Users\David Arley\Desktop\blast-2.4.0+\db
```

En este caso, la ubicación de la carpeta es: Users\David Arley\Desktop\blast-2.4.0+\db

- >makeblastdb -in “nombre del documento fasta” -dbtype nucl -parse\_seqids (sin comillas)

```
C:\Users\David Arley\Desktop\blast-2.4.0+\db>makeblastdb -in refseq_rna.00 -dbtype nucl -parse_seqids
```

Aquí el nombre del documento fasta se llama: **refseq\_rna.00**

Aparecerá:

```
Building a new DB, current time: 11/15/2017 22:22:40
New DB name: C:\Users\David Arley\Desktop\blast-2.4.0+\db\refseq_rna.00
New DB title: refseq_rna.00
Sequence type: Nucleotide
Keep MBits: 1
Maximum file size: 10000000000B
BLAST options error: File refseq_rna.00 does not exist
```

- >blastdbcmd -db “documento fasta” -info (sin comillas)

```
C:\Users\David Arley\Desktop\blast-2.4.0+\db>blastdbcmd -db refseq_rna.00 -info
```

Aparecerá:

```
Database: NCBI Transcript Reference Sequences
2,504,470 sequences; 3,991,728,284 total bases
Date: Aug 26, 2016 3:00 AM Longest sequence: 107,499 bases
Volumes:
C:\Users\David Arley\Desktop\blast-2.4.0+\db\refseq_rna.00
```

- >blastn -query “nombre de la secuencia consulta.txt” -db “documento fasta” -out “nombre deseado para el archivo de salida.txt”

```
C:\Users\David Arley\Desktop\blast-2.4.0+\db>blastn -query test_query.txt -db refseq_rna.00 -out resultado.txt
```

- Finalmente se obtienen los fragmentos del documento fasta que se alinean significativamente con la secuencia consulta en formato .txt en la carpeta creada con anterioridad.

 resultado.txt 15/11/2017 10:55 ... Documento de tex... 462 KB

Al abrir este archivo .txt encontrará el blast local como se muestra a continuación:

Score = 4916 bits (2662), Expect = 0.0  
 Identities = 2662/2662 (100%), Gaps = 0/2662 (0%)  
 Strand=Plus/Plus

```

Query 1   GAAGAGACCCAGCAACCCACAGAGTTGAGAAATTTGACTGGCATTCAAGCTGTCCAATCA 60
          |||
Sbjct 1   GAAGAGACCCAGCAACCCACAGAGTTGAGAAATTTGACTGGCATTCAAGCTGTCCAATCA 60

Query 61  ATAGCTGCCGCTGAAGGGTGGGGCTGGATGGCGTAAGCTACAGCTGAAGGAAGAACGTGA 120
          |||
Sbjct 61  ATAGCTGCCGCTGAAGGGTGGGGCTGGATGGCGTAAGCTACAGCTGAAGGAAGAACGTGA 120

Query 121 GCACGAGGCACTGAGGTGATTGGCTGAAGGCACTTCCGTTGAGCATCTAGACGTTTCCTT 180
          |||
Sbjct 121 GCACGAGGCACTGAGGTGATTGGCTGAAGGCACTTCCGTTGAGCATCTAGACGTTTCCTT 180

Query 181 GGCTCTTCTGGCGCCAAAATGTCGTTTCGTGGCAGGGGTTATTCGGCGGCTGGACGAGACA 240
          |||
Sbjct 181 GGCTCTTCTGGCGCCAAAATGTCGTTTCGTGGCAGGGGTTATTCGGCGGCTGGACGAGACA 240
  
```

## 1.2 COMPILACIÓN DE TODOS LOS SITIOS HETEROPLÁSMICOS PARA CADA INDIVIDUO EVALUADO:

### 1.1. Heteroplasmia de E1:

Heteroplasmia	Cobertura	Nucleótidos	Región	Longitud
1	secuencia referencia TRINITY_DN32984_c0_g2_i1 TRINITY_DN34938_c0_g1_i1 TRINITY_DN34938_c0_g2_i1	A A A C	(484) - rRNA- 12S ribosomal RNA	1
2	secuencia referencia TRINITY_DN32984_c0_g2_i1 TRINITY_DN34938_c0_g1_i1 TRINITY_DN34938_c0_g2_i1 TRINITY_DN32984_c0_g1_i1	G G G G A	(484) - rRNA- 12S ribosomal RNA	1
3	secuencia referencia TRINITY_DN45273_c0_g1_i1 TRINITY_DN50508_c0_g1_i3	TA TA CT	(1526-1527) - rRNA-16S ribosomal RNA	2
4	secuencia referencia TRINITY_DN45273_c0_g1_i1 TRINITY_DN50508_c0_g1_i3	C C A	(2705) - rRNA- 16S ribosomal RNA	10
5	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AC AC AC TT	(5371-5372) - tRNA-Tyr	2
6	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	C C C A	(5374) - tRNA- Tyr	1

7	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AA AA AA CT	(5376-5377) - tRNA-Tyr	2
8	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	ACACT ACACT ACACT TGGGG	(5391-5395) - tRNA-Tyr	5
9	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	GCCA GCCA GCCA TGAG	(5386-5389) - tRNA-Tyr	4
10	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	CCTA CCTA CCTA AGGC	(5391-5394) - tRNA-Tyr	4
11	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1	G G A	(7012) - tRNA- Asp	1
12	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1	CGT CGT AAA	(7014-7016) - tRNA-Asp	3
13	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	AATTATAGGTG AATTATAGGTG CCGATCTCTAT	(7051-7060) - tRNA-Asp	11
14	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	A A T	(7064) - tRNA- Asp	1
15	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	CCCTT CCCTT GGTGA	(7066-7070) - tRNA-Asp	5
16	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	CGA CGA TTG	(7073-7075) - tRNA-Asp	3
17	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	T T A	(7077) - tRNA- Asp	1
18	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1	A A C	(7079) - tRNA- Asp	1
19	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g1_i2	A A A T	(7730) - cytochrome c oxidase subunit II	1

20	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g1_i2	A A A T	(7730) - cytochrome c oxidase subunit II	1
21	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g1_i2	AC AC AC GA	(7732-7733) - cytochrome c oxidase subunit II	2
22	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g1_i2	TTGA TTGA TTGA AGCC	(7735-7738) - cytochrome c oxidase subunit II	4
23	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	G A A C	(7740) - cytochrome c oxidase subunit II	1
24	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	CTGA CTGA CTGA GGCT	(7742-7745) - cytochrome c oxidase subunit II	4
25	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	CTTC CTTC CTTC TGCA	(7747-7750) - cytochrome c oxidase subunit II	4
26	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	TTAA CTAA CTAA GAGT	(7752-7755) - cytochrome c oxidase subunit II	4
27	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	T T T C	(7759) - cytochrome c oxidase subunit II	1
28	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	TCCTAACAC TCTTAACAC TCTTAACAC ATAGTTTGT	(7761-7769) - cytochrome c oxidase subunit II; tRNA-Lys	9
29	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	ATAGAA ATAGAG ATAGAA TCTTGG	(7771-7776) - tRNA-Lys	6
30	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	C C C A	(7778) - tRNA- Lys	1

31	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AA AA AA TG	(7780-7781) - tRNA-Lys	2
32	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	G G G T	(7785) - tRNA- Lys	1
33	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	A A A C	(7787) - tRNA- Lys	1
34	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AG AG AG GC	(7789-7790) - tRNA-Lys	2
35	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	GCTA GCTA GCTA AGAG	(7792-7795) - tRNA-Lys	4
36	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	CCTTT CCTTT CCTTT GAAAG	(7797-7801) - tRNA-Lys	5
37	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	A A A C	(7803) - tRNA- Lys	1
38	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	GCTAG GCTAG GCTAG AAATT	(7805-7809) - tRNA-Lys	5
39	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AGAG AGAG AGAG CCTT	(7814-7817) - tRNA-Lys	4
40	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	AC AC AC TT	(7819-7820) - tRNA-Lys	2
41	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	CC CC CC AA	(7822-7824) - tRNA-Lys	2

42	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	A A A T	(7826) - tRNA-Lys	1
43	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	TCTCC CCTCC CCTCC TGATA	(7828-7832) - tRNA-Lys	5
44	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	G G G C	(7836) - tRNA-Lys	1
45	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	GA GA GA TC	(7838-7839) - tRNA-Lys	2
46	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	T C C A	(7846) - ATP synthase F0 subunit 8	1
47	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1	C C C A	(7855) - ATP synthase F0 subunit 8	1
48	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CTT CCT CCT CCT TAA	(7876-7878) - ATP synthase F0 subunit 8	3
49	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CTCTCC CTCTCC CTCTCC CTCTCC AAGGAA	(7880-7885) - ATP synthase F0 subunit 8	6
50	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CATG CATG CATG CATG GGAA	(7887-7890) - ATP synthase F0 subunit 8	4
51	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CTAATTTA CTAATTTA CTAATTTA CTAATTTA GATTACAT	(7892-7899) - ATP synthase F0 subunit 8	8

52	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CC CC CC CC AA	(7902-7903) - ATP synthase F0 subunit 8	2
53	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	TTATTTT TCATCTT TCATCTT TCATCTT AGGAAAC	(7905-7911) - ATP synthase F0 subunit 8	7
54	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	C C C C A	(7913) - ATP synthase F0 subunit 8	1
55	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	CCA CCA CCA CCA AAC	(7916-7918) - ATP synthase F0 subunit 8	3
56	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN45232_c0_g1_i1 TRINITY_DN50508_c0_g1_i1 TRINITY_DN50508_c0_g4_i1	ATCTCATCTTA ATTACATCTTA ATTACATCTTA ATTACATCTTA CAGTATGGAGC	(7922-7932) - ATP synthase F0 subunit 8	11
57	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	TGGCCC TGGCCC AAAAAA AAAAAA	(8680-8685) - cytochrome c oxidase subunit III	6
58	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	C C A A	(8687) - cytochrome c oxidase subunit III	1
59	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	T C A A	(8692) - cytochrome c oxidase subunit III	1
60	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	CGCCT CGCCT AAAAA AAAAA	(8696-8700) - cytochrome c oxidase subunit III	1
61	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	CATAGT ATATAG CACAAAC CACAAAC	(8705-8710) - cytochrome c oxidase subunit III	6



62	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	GACC TGAT TACA TACA	(8712-8715) - cytochrome c oxidase subunit III	4
63	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	AG AA TG TG	(8718-8719) - cytochrome c oxidase subunit III	2
64	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	TGA CAT TGA TGA	(8724-8726) - cytochrome c oxidase subunit III	3
65	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	CACTAACA ACCATTA TTTGGGGG TTTGGGGG	(8728-8735) - cytochrome c oxidase subunit III	8
66	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	G G C C	(8738) - cytochrome c oxidase subunit III	1
67	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	AGC GCA AAG AAG	(8741-8743) - cytochrome c oxidase subunit III	3
68	secuencia referencia TRINITY_DN50508_c0_g1_i3 TRINITY_DN50508_c0_g5_i1 TRINITY_DN50508_c0_g4_i1	GCA CAG AGT AGT	(8745-8747) - cytochrome c oxidase subunit III	3
69	secuencia referencia TRINITY_DN4102_c0_g2_i1 TRINITY_DN4102_c0_g1_i1 TRINITY_DN30895_c0_g1_i1	A G A A	(9646) - NADH dehydrogenase subunit 3	1
70	secuencia referencia TRINITY_DN4102_c0_g2_i1 TRINITY_DN4102_c0_g1_i1 TRINITY_DN30895_c0_g1_i1	A T A A	(9665) - NADH dehydrogenase subunit 3	1
71	secuencia referencia TRINITY_DN4102_c0_g2_i1 TRINITY_DN4102_c0_g1_i1 TRINITY_DN30895_c0_g1_i1 TRINITY_DN37761_c0_g1_i1	GGC AAA AAA GGT GGT	(9882-9884) - tRNA-Arg	3

72	secuencia referencia TRINITY_DN4102_c0_g2_i1 TRINITY_DN4102_c0_g1_i1 TRINITY_DN30895_c0_g1_i1 TRINITY_DN37761_c0_g1_i1	CT AA AA CT CT	(9887-9888) - tRNA-Arg	2
73	secuencia referencia TRINITY_DN30895_c0_g1_i1 TRINITY_DN37761_c0_g1_i1	GTT AAA GTT	(11622-11624) - tRNA-His	3
74	secuencia referencia TRINITY_DN30895_c0_g1_i1 TRINITY_DN37761_c0_g1_i1	T A T	(11627) - tRNA-His	1
75	secuencia referencia TRINITY_DN30895_c0_g1_i1 TRINITY_DN37761_c0_g1_i1	T A T	(11629) - tRNA-His	1
76	secuencia referencia TRINITY_DN34579_c0_g1_i1 TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	A A A A G	(14076) - NADH dehydrogenase subunit 6	1
77	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	TG AA TG TG	(14156-14157) - tRNA-Glu	2
78	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	TC AC TT TT	(14161-14162) -tRNA-Glu	2
79	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	AGACC TCCAA AGACC AGACC	(14169-14173) -tRNA-Glu	5
80	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	TGATTTGA AACAAAAC TGATTTGA TGATTTGA	(14176-14186) -tRNA-Glu	8
81	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	ACCG CAAA ACCG ACCG	(14190-14193) -tRNA-Glu	4
82	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	TGT AAA TGT TGT	(14195-14197) -tRNA-Glu	3

83	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	T A T T	(14199) -tRNA-Glu	1
84	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	CA GC CA CA	(14201-14202) -tRNA-Glu	2
85	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	CT AA CT CT	(14204-14205) -tRNA-Glu	2
86	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	C T C C	(14207) -tRNA-Glu	1
87	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	A C A A	(14209) -tRNA-Glu	1
88	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	A T A A	(14211) -tRNA-Glu	1
89	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	C A T T	(14214) - Zona intergénica	1
90	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	GGCCA TTTCG GGCTA GGCTA	(14219-14223) - cytochrome b	5
91	secuencia referencia TRINITY_DN40849_c0_g1_i1 TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	A C A A	(14225) - cytochrome b	1
92	secuencia referencia TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1	G G T	(14791) - cytochrome b	5
93	secuencia referencia TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1 TRINITY_DN28150_c0_g2_i1 TRINITY_DN28150_c0_g3_i1 TRINITY_DN28150_c0_g1_i1	TTCT AAAA AAAA TTCT TTCT TTCT	(15362-15365) - tRNA-Thr	4

94	secuencia referencia TRINITY_DN40849_c0_g1_i2 TRINITY_DN38087_c0_g1_i1 TRINITY_DN28150_c0_g2_i1 TRINITY_DN28150_c0_g3_i1 TRINITY_DN28150_c0_g1_i1	GT A- AA GT GT GT	(15367-15368) - tRNA-Thr	2
95	secuencia referencia TRINITY_DN38087_c0_g1_i1 TRINITY_DN28150_c0_g2_i1 TRINITY_DN28150_c0_g3_i1 TRINITY_DN28150_c0_g1_i1	GCT AAA GCT GCT GCT	(15370-15372) - tRNA-Thr	3
TOTAL				286

### 1.2. Heteroplasma de Cc1

Heteroplasma	Cobertura	nucleótidos	Región	Longitud
1	secuencia referencia TRINITY_DN17717_c0_g1_i1 TRINITY_DN25688_c0_g1_i1	C G C	(1123) - rRNA- 16S ribosomal RNA	1
2	secuencia referencia TRINITY_DN17717_c0_g1_i1 TRINITY_DN25688_c0_g1_i1	A T A	(1125) - rRNA- 16S ribosomal RNA	1
3	secuencia referencia TRINITY_DN17717_c0_g1_i1 TRINITY_DN25688_c0_g1_i1	C T C	(1127) - rRNA- 16S ribosomal RNA	1
4	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	ACCTCAACAA ACCTCAACAA GAGATTTTGT ACCTCAACAA	(4604-4613) - NADH dehydrogenase subunit 2	10
5	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	AT AT TG AT	(4615-4616) - NADH dehydrogenase subunit 2	2
6	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	A A T A	(4621) - NADH dehydrogenase subunit 2	1
7	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	T T G T	(4623) - NADH dehydrogenase subunit 2	1

8	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	TAAAAC TAAAAC GTTTTA TAAAAC	(4626-4631) - NADH dehydrogenase subunit 2	6
9	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	C C A C	(4634) - NADH dehydrogenase subunit 2	1
10	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	A A T A	(4636) - NADH dehydrogenase subunit 2	1
11	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	CA CA AT CA	(4641-4642) - NADH dehydrogenase subunit 2	2
12	secuencia referencia TRINITY_DN68855_c0_g1_i1 TRINITY_DN13494_c0_g1_i1 TRINITY_DN13494_c0_g2_i1	ACAAAATC ACAAAATC TTGTTGAG ACAAAATC	(4644-4651) - NADH dehydrogenase subunit 2	8
13	secuencia referencia TRINITY_DN13494_c0_g2_i1 TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1	A A G G	(5074) - tRNA-Trp	1
14	secuencia referencia TRINITY_DN13494_c0_g2_i1 TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	A A A A C	(5370) - tRNA-Tyr	1
15	secuencia referencia TRINITY_DN13494_c0_g2_i1 TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	A C A A A	(5389) - tRNA-Tyr	1
16	secuencia referencia TRINITY_DN13494_c0_g2_i1 TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	CCTGTGTTTT AAAAAAAAAAAA CCTGTGTTTT CCTGTGTTTT CCTGTGTTTT	(5395-5405) - tRNA-Tyr; cytochrome c oxidase subunit I	11

17	secuencia referencia TRINITY_DN13494_c0_g2_i1 TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	CCG AAA CCG CCG CCG	(5409-5411) - cytochrome c oxidase subunit I	3
18	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	G T G G	(6535) - cytochrome c oxidase subunit I	1
19	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	G T G G	(6548) - cytochrome c oxidase subunit I	1
19	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	GCCGT AAAAG GCCGT GCCGT	(6550-6554) - cytochrome c oxidase subunit I	5
20	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	TTTGCT AAGATA TTTGCT TTTGCT	(6556-6561) - cytochrome c oxidase subunit I	6
21	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	T A T T	(6563) - cytochrome c oxidase subunit I	1
22	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	A C A A	(6565) - cytochrome c oxidase subunit I	1
23	secuencia referencia TRINITY_DN25186_c0_g1_i2 TRINITY_DN25186_c0_g1_i1 TRINITY_DN22337_c0_g1_i1	CAGGAT GGCTCA CAGGAT CAGGAT	(6569-6574) - cytochrome c oxidase subunit I	6
24	secuencia referencia TRINITY_DN26422_c0_g1_i1 TRINITY_DN22108_c0_g1_i1	TGAGG AAGAT TGAGG	(9453-9457) - cytochrome c oxidase subunit III	5
25	secuencia referencia TRINITY_DN26422_c0_g1_i1 TRINITY_DN22108_c0_g1_i1	TC GG TC	(9459-9460) - cytochrome c oxidase subunit III	2

26	secuencia referencia TRINITY_DN26422_c0_g1_i1 TRINITY_DN22108_c0_g1_i1 TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1	GCTCCCCTAG GA----- AAAAAAAGA - CTCCCCTAG - CTCCCCTAG	(9463-9472) - tRNA-Gly	10
27	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	TTAC TTAC TTAC TTAC AGTA	(9817-9820) - NADH dehydrogenase subunit 3	4
28	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	CTCC CTCC CTCC CTCC GGGG	(9823-9826) - NADH dehydrogenase subunit 3	4
29	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	CAC CAC CAC CAC TTA	(9830-9832) - NADH dehydrogenase subunit 3	3
30	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	G G G G A	(9835) - NADH dehydrogenase subunit 3	1
31	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	CCT CCT CCT CCT TGA	(9837-9839) - NADH dehydrogenase subunit 3	3
32	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	ATTTA ATCTA ATCTA ATCTA GGGGT	(9841-9845) - NADH dehydrogenase subunit 3	5
33	secuencia referencia TRINITY_DN13439_c0_g1_i1 TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	GAATGAATCCAAGGAGGCTTAGAAT GAATGAGCCACCCAATCCCATCTC GAATGAGTCCAAGGAGGCTTAGAAT GAATGAGTCCAAGGAGGCTTAGAAT TGTAAATGGGTGGGTCATATTGCTA	(9847-9871) - NADH dehydrogenase subunit 3	25
34	secuencia referencia TRINITY_DN13439_c0_g2_i1 TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	GGC AAA GGC GGG	(9882-9884) - tRNA-Arg	3

35	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	AG GG AT	(9889-9890) - tRNA-Arg	2
36	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	CTAACA CTAACA TGCTTT	(9892-9897) - tRNA-Arg	6
37	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	A A T	(9899) - tRNA-Arg	1
38	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	ACTA ACTA TAGT	(9905-9908) - tRNA-Arg	4
39	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4	TTTCGACTTAGTTAATCA TTTCGACTTAGTTAATCA GAGTTGAGATTAAGTGGG	(9910-9927) - tRNA-Arg	18
40	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	GATTAACT GATTAACT TCGATGTAA -----GATGTAA	(9929-9937) - tRNA-Arg	9
41	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	C C G G	(9939) - tRNA-Arg	1
42	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	TG TG GA GA	(9941-9942) - tRNA-Arg	2
42	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	TTTCCC TTTCCC GCCTAT GCCTAT	(9949-9954) - tRNA-Arg; NADH dehydrogenase subunit 4L	6
43	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	AC AC CT AC	(9954-9955) - NADH dehydrogenase subunit 4L	2
44	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	CC CC AT CC	(9957-9958) - NADH dehydrogenase subunit 4L	2
45	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	T T A T	(9960) - NADH dehydrogenase subunit 4L	1



46	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	C C A C	(9963) - NADH dehydrogenase subunit 4L	1
47	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	CTTCAGC CTTCAGC GGCGGAG CTTCAGC	(9965-9971) - NADH dehydrogenase subunit 4L	7
48	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	ATC ACC GGT ACC	(9973-9975) - NADH dehydrogenase subunit 4L	3
49	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	CTCCGCC CTCCGCC GCTGAAG CTCCGCC	(9977-9983) - NADH dehydrogenase subunit 4L	7
50	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	T T G T	(9985) - NADH dehydrogenase subunit 4L	1
51	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	T T A T	(9988) - NADH dehydrogenase subunit 4L	1
52	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	AT AT GG AT	(9990-9991) - NADH dehydrogenase subunit 4L	1
53	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	AG AG GT AG	(9993-9994) - NADH dehydrogenase subunit 4L	2
54	secuencia referencia TRINITY_DN21587_c0_g1_i1 TRINITY_DN24818_c0_g3_i1	TGGCCAC AAAAACA TGGCCAC	(14218-14224) - cytochrome b	7
55	secuencia referencia TRINITY_DN21587_c0_g1_i1 TRINITY_DN24818_c0_g3_i1	CT AA CT	(14229-14230) - cytochrome b	2
56	secuencia referencia TRINITY_DN21587_c0_g1_i1 TRINITY_DN24818_c0_g3_i1 TRINITY_DN78593_c0_g1_i1	AT AT GG AT	(14229-14230) - cytochrome b	1

57	secuencia referencia TRINITY_DN21587_c0_g1_i1 TRINITY_DN24818_c0_g3_i1 TRINITY_DN78593_c0_g1_i1	CGAA ACCC CGAA -GAA	(14232-14235) - cytochrome b	4
58	secuencia referencia TRINITY_DN24442_c0_g1_i1 TRINITY_DN24442_c0_g1_i4 TRINITY_DN24442_c0_g1_i3	C T C C	(14239) - cytochrome b	1
59	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	GCTGACC GCTGATC TTCTCCA GCTGATC	(15207-15213) - cytochrome b	7
60	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	A A C A	(15215) - cytochrome b	1
61	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	C C T C	(15222) - cytochrome b	1
62	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	AC AC TT AC	(15225-15226) - cytochrome b	2
63	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	TG TG CT TG	(15228-15229) - cytochrome b	2
64	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	TGGAGG TGGAGG ACCCAC TGGAGG	(15233-15238) - cytochrome b	6
65	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	CA CA TT CA	(15240-15241) - cytochrome b	2
66	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	CAGTCGA CAGTCGA ACACATC CAGTCGA	(15244-15250) - cytochrome b	7
67	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	G G A G	(15252) - cytochrome b	1

68	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	T T A T	(15254) - cytochrome b	1
69	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	C C A C	(15256) - cytochrome b	1
70	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	TTC TTC CGA TTC	(15258-15260) - cytochrome b	3
71	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	TTA TTA CAG TTA	(15262-15264) - cytochrome b	3
72	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	ATTGGT ATTGGT TCATTC ATTGGT	(15267-15272) - cytochrome b	6
73	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	A A G A	(15274) - cytochrome b	1
74	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	AT AT CC AT	(15276-15277) - cytochrome b	2
75	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	GC GC CT GC	(15279-15280) - cytochrome b	2
76	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	T T A T	(15282) - cytochrome b	1
77	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	TAGCC TAGCC CCAAA TAGCC	(15284-15288) - cytochrome b	5
78	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	T T C T	(15290) - cytochrome b	1

79	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	AC AC TA AC	(15292-15293) - cytochrome b	2
80	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	T T G T	(15298) - cytochrome b	1
81	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	AT AT TC AT	(15300-15301) - cytochrome b	2
82	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	T T C T	(15303) - cytochrome b	1
83	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	CTA GAT CTA	(15413-15415) - tRNA-Thr	3
84	secuencia referencia TRINITY_DN78593_c0_g1_i1 TRINITY_DN24818_c0_g2_i1	AACT GGAA AACT	(15417-15420) - tRNA-Thr	4
85	secuencia referencia TRINITY_DN24818_c0_g2_i1 TRINITY_DN40817_c0_g1_i1	G G T	(15445) - tRNA- Pro	1
TOTAL				299

### 1.3. Heteroplasma Cc2:

Heteroplasma	Cobertura	Nucleótidos	Región	Longitud
1	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	C C C T	(3551) - NADH dehydrogenas e subunit 1	1
2	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	GG AA GG AA	(3764-3765) - tRNA-Ile	2

3	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	C A C A	(3767) - tRNA-Ile	1
4	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	CGTGCC AAAAAA CGTGCC AAAAAA	(3769-3774) - tRNA-Ile	6
5	secuencia referencia TRINITY_DN28027_c0_g2_i1 TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1	T T T A	(3934) - tRNA-Met	1
6	secuencia referencia TRINITY_DN28027_c0_g2_i1 TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1	C C C T	(3936) - tRNA-Met	1
7	secuencia referencia TRINITY_DN28027_c0_g2_i1 TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1	CCGAA CCGAA CCGAA AAACC	(3938-3942) - tRNA-Met	5
8	secuencia referencia TRINITY_DN28027_c0_g2_i1 TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1	TGT TGT TGT ACG	(3945-3947) - tRNA-Met	3
9	secuencia referencia TRINITY_DN28027_c0_g2_i1 TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1	GGTT GGTT GGTT CACA	(3949-3952) - tRNA-Met	4
10	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	A A A C	(3954) - tRNA-Met	1
11	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	ATCCCTCCT ATCCCTCCT ATCCCTCCT CGATACAAA	(3956-3964) - tRNA-Met	9
12	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	TACT TACT TACT GGAG	(3966-3969) - tRNA-Met	4
13	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	AT AT AT CA	(3971-3972) - NADH dehydrogenas e subunit 2	2

14	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	A A A G	(3975) - NADH dehydrogenas e subunit 2	1
15	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	CT CC CC AA	(3979-3980) - NADH dehydrogenas e subunit 2	2
16	secuencia referencia TRINITY_DN26863_c0_g1_i2 TRINITY_DN27634_c0_g1_i1 TRINITY_DN26863_c0_g1_i1	GCTAA GCTAA GCTAA CGATC	(5373-5377) - tRNA-Tyr	5
17	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	ACACT ACACT ACACT CGGGG	(5379-5383) - tRNA-Tyr	5
18	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	GCCA GCCA GCCA TGAG	(5386-5389) - tRNA-Tyr	4
19	secuencia referencia TRINITY_DN28115_c0_g1_i1 TRINITY_DN28027_c0_g2_i1 TRINITY_DN28115_c0_g2_i1	CCTA CCTA CCTA AGGC	(5391-5394) - tRNA-Tyr	4
20	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN16111_c0_g1_i1	A A G	(7776) - tRNA-Lys	1
21	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN16111_c0_g1_i1	A A G	(7781) - tRNA-Lys	1
22	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN16111_c0_g1_i1	T T C	(8012) - ATP synthase F0 subunit 6	1
23	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN27634_c0_g2_i1	A A C	(8780) - cytochrome c oxidase subunit III	1
24	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN27634_c0_g2_i1	C C A	(8799) - cytochrome c oxidase subunit III	1

25	secuencia referencia TRINITY_DN27634_c0_g1_i1 TRINITY_DN27634_c0_g2_i1 TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2	A A A C A	(9471) - tRNA-Gly	1
26	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AGCC AGCC AGCC TTTT	(11309- 11312) - NADH dehidrogenas e subunit 4	4
27	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11314) - NADH dehidrogenas e subunit 4	1
28	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GA GA GA TT	(11316- 11317) - NADH dehidrogenas e subunit 4	2
29	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GAC GAC GAC TTT	(11319- 11321) - NADH dehidrogenas e subunit 4	3
30	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AC AC AC TT	(11323- 11324) - NADH dehidrogenas e subunit 4	2
31	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GC GC GC TT	(11327- 11328) - NADH dehidrogenas e subunit 4	2
32	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	T T T G	(11332) - NADH dehidrogenas e subunit 4	1
33	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11335) - NADH dehidrogenas e subunit 4	1
34	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AAC AAC AAC TGT	(11339- 11341) - NADH	3

			dehidrogenas e subunit 4	
35	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAGCCC TAGCCC TAGCCC GTTGAA	(11343-11348) - NADH dehidrogenas e subunit 4	6
36	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	T T T A	(11350) - NADH dehidrogenas e subunit 4	1
37	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C A	(11352) - NADH dehidrogenas e subunit 4	1
38	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CAACCA CAACCA CAACCA GGTGGT	(11355-11360) - NADH dehidrogenas e subunit 4	6
39	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA TT	(11363-11364) - NADH dehidrogenas e subunit 4	2
40	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CT CT CT AA	(11366-11367) - NADH dehidrogenas e subunit 4	2
41	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AT AT AT TC	(11369-11370) - NADH dehidrogenas e subunit 4	2
42	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GGA GGA GGA TTG	(11372-11374) - NADH dehidrogenas e subunit 4	3
43	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA TC	(11376-11377) - NADH	2



			dehydrogenas e subunit 4	
44	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AACC AACC AACC GGTT	(11380-11383) - NADH dehydrogenas e subunit 4	4
45	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TTA TTA TTA GAG	(11385-11387) - NADH dehydrogenas e subunit 4	3
46	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TACTT TACTT TACTT CCAGG	(11389-11393) - NADH dehydrogenas e subunit 4	5
47	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CT CT CT AG	(11396-11397) - NADH dehydrogenas e subunit 4	2
48	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	T T T A	(11399) - NADH dehydrogenas e subunit 4	1
49	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CC CC CC GT	(11409-11410) - NADH dehydrogenas e subunit 4	2
50	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AC AC AC TT	(11412-11413) - NADH dehydrogenas e subunit 4	2
51	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A G	(11417) - NADH dehydrogenas e subunit 4	1
52	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11420) - NADH dehydrogenas e subunit 4	1

53	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CC CC CC TT	(11422- 11423) - NADH dehydrogenas e subunit 4	2
54	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11426) - NADH dehydrogenas e subunit 4	1
55	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AACAGGA AACAGGA AACAGGA TGGGTTT	(11428- 11434) - NADH dehydrogenas e subunit 4	7
56	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAGGAACCC TAGGAACCC TAGGAACCC GTTTTGTTT	(11436- 11444) - NADH dehydrogenas e subunit 4	9
57	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AATC AATC AATC TTGG	(11446- 11449) - NADH dehydrogenas e subunit 4	4
58	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CC CC CC TG	(11451- 11452) - NADH dehydrogenas e subunit 4	2
59	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C T	(11454) - NADH dehydrogenas e subunit 4	1
60	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AC AC AC GG	(11456- 11457) - NADH dehydrogenas e subunit 4	2
61	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TACA TACA TACA GTGT	(11459- 11462) - NADH dehydrogenas e subunit 4	4

62	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CCTAT CCTAT CCTAT TTGTA	(11464-11468) - NADH dehidrogenas e subunit 4	5
63	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ATA ATA ATA CCG	(11471-11473) - NADH dehidrogenas e subunit 4	3
64	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAT TAT TAT CCC	(11475-11477) - NADH dehidrogenas e subunit 4	3
65	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TACAACACA TACAACACA TACAACACA ATATTATGG	(11479-11487) - NADH dehidrogenas e subunit 4	9
66	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TGAGGGGAAACACC TGAGGGGAAACACC TGAGGGGAAACACC GTTTTAAGTTTGGT	(11489-11502) - NADH dehidrogenas e subunit 4	14
67	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TCATACATCAAAC TCATACATCAAAC TCATACATCAAAC CTTGGGGCGGCTTT	(11504-11517) - NADH dehidrogenas e subunit 4	14
68	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ATCCCCCAACCCACAC AC ATCCCCCAACCCACAC AC ATCCCCCAACCCACAC AC GGTTGTGGGTTGTTAGT TA	(11519-11537) - NADH dehidrogenas e subunit 4	19
69	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AGA AGA AGA TAT	(11539-11541) - NADH dehidrogenas e subunit 4	3

70	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CATCTCTTAA CATCTCCTAA CATCTCCTAA GGGGGGTCTT	(11543- 11552) - NADH dehydrogenas e subunit 4	10
71	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ATCA ATCA ATCA TGTT	(11554- 11557) - NADH dehydrogenas e subunit 4	4
72	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TACACA TACACA TACACA CTGTAG	(11559- 11564) - NADH dehydrogenas e subunit 4	6
73	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CC CC CC AT	(11566- 11567) - NADH dehydrogenas e subunit 4	2
74	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ACCAA ACCAA ACCAA GTTTT	(11569- 11573) - NADH dehydrogenas e subunit 4	5
75	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C T	(11582) - NADH dehydrogenas e subunit 4	1
76	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11584) - NADH dehydrogenas e subunit 4	1
77	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAACAA TAACAA TAACAA GGTGGC	(11586- 11591) - NADH dehydrogenas e subunit 4	6
78	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ACCAGAACTAA ACCAGAACTAA ACCAGAACTAA TATTAGTTATT	(11593- 11603) - NADH dehydrogenas e subunit 4	11

79	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C T	(11605) - NADH dehydrogenas e subunit 4	1
80	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AGGC AGGC AGGC CTTA	(11608- 11611) - NADH dehydrogenas e subunit 4	4
81	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C T	(11613) - NADH dehydrogenas e subunit 4	1
82	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	T T T A	(11615) - NADH dehydrogenas e subunit 4	1
83	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A G	(11619) - NADH dehydrogenas e subunit 4	1
84	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA GG	(11625- 11626) - tRNA-His	2
85	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AT AT AT GG	(11628- 11629) - tRNA-His	2
86	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GTTT GTTT GTTT AGAG	(11631- 11634) - tRNA-His	4
87	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AAA AAA AAA CTT	(11636- 11638) - tRNA-His	3
88	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CAAACA CAAACA CAAACA TCCTGT	(11640- 11645) - tRNA-His	6
89	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAGACT TAGACT TAGACT GCTTGA	(11647- 11652) - tRNA-His	6

90	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TGGC TGGC TGGC GTAA	(11654- 11657) - tRNA-His	4
91	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	T T T G	(11660) - tRNA-His	1
92	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AAAATAGG AAAATAGG AAAATAGG GGTGGGAT	(11662- 11669) - tRNA-His	8
93	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	G G G A	(11671) - tRNA-His	1
94	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11674) - tRNA-His	1
95	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA TG	(11676- 11677) - tRNA-His	2
96	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CTCCTTA CTCCTTA CTCCTTA GGTGAGT	(11679- 11685) - tRNA-His	7
97	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A T	(11688) - tRNA-His	1
98	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CCGAGAGAGG CCGAGAGAGG CCGAGAGAGG TTTTAGTTCT	(11690- 11699) - tRNA-His; tRNA-Ser	10
99	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A G	(11701) - tRNA-Ser	1
100	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AATAC AATAC AATAC GGGGT	(11703- 11707) - tRNA-Ser	6

101	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ATAA ATAA ATAA TGGG	(11709- 11712) - tRNA-Ser	4
102	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A C	(11714) - tRNA-Ser	1
103	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C A	(11716) - tRNA-Ser	1
104	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CTAAC CTAAC CTAAC TGTTA	(11723) - tRNA-Ser	5
105	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CCTA CCTA CCTA TGAC	(11725- 11728) - tRNA-Ser	4
106	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A G	(11730) - tRNA-Ser	1
107	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CTGAG CTGAG CTGAG GGAGT	(11732- 11736) - tRNA-Ser	5
108	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TA TA TA GG	(11739- 11740) - tRNA-Ser	6
109	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TCCC TCCC TCCC AGGG	(11742- 11745) - tRNA-Ser	4
110	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CA CA CA AT	(11747- 11748) - tRNA-Ser	2
111	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	C C C G	(11750) - tRNA-Ser	1

112	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	CCCTCACTTT CCCTCACTTT CCCTCACTTT AGTGTTACAA	(11752- 11761) - tRNA-Ser; tRNA-Leu	10
113	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA TG	(11763- 11764) - tRNA-Leu	2
114	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	G G G T	(11766) - tRNA-Leu	1
115	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A C	(11768) - tRNA-Leu	1
116	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	A A A G	(11770) - tRNA-Leu	1
117	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	AA AA AA TG	(11772- 11773) - tRNA-Leu	2
118	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TAATCCAC TAATCCAC TAATCCAC GTTGTTTG	(11775- 11782) - tRNA-Leu	8
119	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	G G G T	(11784) - tRNA-Leu	1
120	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	TT TT TT CG	(11788- 11789) - tRNA-Leu	2
121	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	GG GG GG TT	(11791- 11792) - tRNA-Leu	2
122	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2	ACCACG ACCACA ACCACA GATTTT	(11794- 11799) - tRNA-Leu	6



123	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	ACCCTTG ACCCTTG ACCCTTG GTGGGGT ACCCTTG ACCCTTG	(11801-11807) - tRNA-Leu	7
124	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	TGCAAT TGCAAT TGCAAT GCATGG TGCAAT TGCAAT	(11809-11814) - tRNA-Leu	6
125	secuencia referencia TRINITY_DN26669_c0_g1_i1 TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	CCA CCA CCA TTT CCA CCA	(11816-11818) - tRNA-Leu	3
126	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	G G T G G	(11820) - tRNA-Leu	1
127	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	AAAGTAAT AAAGTAAT TTTTGGCA AAAGTAAT AAAGTAAT	(11823-11830) - tRNA-Leu; NADH dehydrogenas e subunit 5	8
128	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	ACCACAC ACCACAC TTGGTTG ACCACAC ACCACAC	(11832-11838) - NADH dehydrogenas e subunit 5	7
129	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	AA AA TT AA AA	(11840-11841) - NADH dehydrogenas e subunit 5	2
130	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3	A A T A A	(11843) - NADH dehydrogenas e subunit 5	1

131	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CA CA GC CA CA CA	(11848-11849) - NADH dehydrogenas e subunit 5	2
132	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CC CC GG CC CC CC	(11851-11852) - NADH dehydrogenas e subunit 5	2
133	secuencia referencia TRINITY_DN26669_c0_g1_i2 TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCTCT CC----- GAGGG CCTCT CCTCT CCTCT	(11853-11859) - NADH dehydrogenas e subunit 5	5
134	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AGCCC TATTG AGCCC AGCCC AGCCC	(11861-11865) - NADH dehydrogenas e subunit 5	5
135	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AAT TGA AAT AAT AAT	(11867-11869) - NADH dehydrogenas e subunit 5	3
136	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ACCC GTTA ACCC ACCC ACCC	(11871-11874) - NADH dehydrogenas e subunit 5	4
137	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AATATT TTGTTG AATACT AATACT AATACT	(11876-11881) - NADH dehydrogenas e subunit 5	6
138	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCACT GATGG CCACT CCACT CCACT	(11883-11887) - NADH dehydrogenas e subunit 5	5

139	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ACAACAA GTTGGTT ACAACAA ACAACAA ACAACAA	(11889- 11895) - NADH dehydrogenas e subunit 5	7
140	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T G T T T	(11897) - NADH dehydrogenas e subunit 5	1
141	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCCA GTTT CCCA CCCA CCCA	(11900- 11903) - NADH dehydrogenas e subunit 5	4
142	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AAA TCT AAA AAA AAA	(11907) - NADH dehydrogenas e subunit 5	3
143	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A A	(11909) - NADH dehydrogenas e subunit 5	1
144	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AACAC GGGTA AACAC AACAC AACAC	(11912- 11916) - NADH dehydrogenas e subunit 5	5
145	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTAAAAACAA TCGTCCGATT ATAAAAAACAA ATAAAAAACAA ATAAAAAACAA	(11919- 11928) - NADH dehydrogenas e subunit 5	10
146	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AACAGCTGT GGTGATGAG AACAGCTGT AACAGCTGT AACAGCTGT	(11930- 11938) - NADH dehydrogenas e subunit 5	9
147	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AA GT AA AA AA	(11941- 11942) - NADH dehydrogenas e subunit 5	2

148	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TAGCAT GTAATG TAGCAT TAGCAT TAGCAT	(11944- 11949) - NADH dehydrogenas e subunit 5	6
149	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CT TA CT CT CT	(11951- 11952) - NADH dehydrogenas e subunit 5	2
150	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAT TGA CAT CAT CAT	(11954- 11956) - NADH dehydrogenas e subunit 5	3
151	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCC GGA CCC CCC CCC	(11959- 11961) - NADH dehydrogenas e subunit 5	3
152	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A A	(11963) - NADH dehydrogenas e subunit 5	1
153	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCCC ATGA TCCC TCCC TCCC	(11965- 11968) - NADH dehydrogenas e subunit 5	4
154	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C C	(11970) - NADH dehydrogenas e subunit 5	1
155	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A A	(11972) - NADH dehydrogenas e subunit 5	1
156	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CGCCT ATAGA CACCT CACCT CACCT	(11975- 11979) - NADH dehydrogenas e subunit 5	5

157	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CA TT CA CA CA	(11981- 11982) - NADH dehydrogenas e subunit 5	2
158	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TTAT AATG TTAT TTAT TTAT	(11984- 11987) - NADH dehydrogenas e subunit 5	4
159	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAGACA GGCCTT CAGACA CAGACA CAGACA	(11989- 11994) - NADH dehydrogenas e subunit 5	6
160	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GAATC TGTGA GAATC GAATC GAATC	(11997- 12001) - NADH dehydrogenas e subunit 5	5
161	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TTATC CGGAT TTATC TTATC TTATC	(12004- 12008) - NADH dehydrogenas e subunit 5	5
162	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCAACC AAGTTG CCAACC CCAACC CCAACC	(12010- 12015) - NADH dehydrogenas e subunit 5	6
163	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CACT ATTG CACT CACT CACT	(12018- 12021) - NADH dehydrogenas e subunit 5	4
164	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATCA ATAG ATCA ATCA ATCA	(12023- 12026) - NADH dehydrogenas e subunit 5	4
165	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCACATC TTTGTGA CCACTAA CCACATC CCACATC	(12028- 12034) - NADH dehydrogenas e subunit 5	7

166	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CACAT TTTGC CACCT CACAT CACAT	(12035- 12039) - NADH dehydrogenas e subunit 5	5
167	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C C	(12041) - NADH dehydrogenas e subunit 5	1
168	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCATAAACAT GTCCTTTTGG TT-TATACAG CCATAAACAT CCATAAACAT	(12043- 12052) - NADH dehydrogenas e subunit 5	10
169	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AGCTTTAACTTG CCAACGTTTTTCAT CATTGAATCTGTT AGCTTTAACTTG AGCTTTAACTTG	(12054- 12066) - NADH dehydrogenas e subunit 5	13
170	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CA TC TC CA CA	(12068- 12069) - NADH dehydrogenas e subunit 5	2
171	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GT GG CC GT GT	(12071- 12072) - NADH dehydrogenas e subunit 5	2
172	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTCCATCA CTGGTCAA ACCTACAC CTCCATCA CTCCATCA	(12074- 12081) - NADH dehydrogenas e subunit 5	8
173	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GTTC TAGA GATC GTTC GTTC	(12083- 12086) - NADH dehydrogenas e subunit 5	4
174	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g2_i1 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GTCCCAATCGCC GTGTTGCGATGT AACCAC----- GCCCAATCGC GCCCAATCGC	(12087- 12098) - NADH dehydrogenas e subunit 5	12

175	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATA TGG ATA ATA	(12106-12108) - NADH dehydrogenas e subunit 5	3
176	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GTC TAA GTC GTC	(12105-12107) - NADH dehydrogenas e subunit 5	3
177	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CA TT CA CA	(12109-12110) - NADH dehydrogenas e subunit 5	2
178	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G T G G	(12112) - NADH dehydrogenas e subunit 5	1
179	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TC AG TC TC	(12114-12115) - NADH dehydrogenas e subunit 5	2
180	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATC TCA ATC ATC	(12118-12119) - NADH dehydrogenas e subunit 5	3
181	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GAAT TTGG GAAT GAAT	(12123-12126) - NADH dehydrogenas e subunit 5	4
182	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TACAC AGTGA TACAC TACAC	(12128-12132) - NADH dehydrogenas e subunit 5	5
183	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T G T T	(12135) - NADH dehydrogenas e subunit 5	1

184	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATACA TGAT ATACA ATACA	(12137- 12141) - NADH dehydrogenas e subunit 5	5
185	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTAC GGTG CTAC CTAC	(12145- 12148) - NADH dehydrogenas e subunit 5	4
186	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GACCC TGAAG GACCC GACCC	(12150- 12154) - NADH dehydrogenas e subunit 5	5
187	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TATA ATGC TATA TATA	(12156- 12159) - NADH dehydrogenas e subunit 5	4
188	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CACA AGTG CACA CACA	(12161- 12164) - NADH dehydrogenas e subunit 5	4
189	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A	(12167) - NADH dehydrogenas e subunit 5	1
190	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TTTC GAGA TTTC TTTC	(12170- 12173) - NADH dehydrogenas e subunit 5	4
191	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A	(12176) - NADH dehydrogenas e subunit 5	1
192	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ACCTACTAATTTTCC GTGGGTGTTGGAGGG ACCTACTAATTTTCC ACCTACTAATTTTCC	(12178- 12192) - NADH dehydrogenas e subunit 5	15



193	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AG TT AG AG	(12194- 12195) - NADH dehydrogenas e subunit 5	2
194	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A	(12197) - NADH dehydrogenas e subunit 5	1
195	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCA GGT CCA CCA	(12199- 12201) - NADH dehydrogenas e subunit 5	3
196	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AATAA TTGTT AATAA AATAA	(12203- 12207) - NADH dehydrogenas e subunit 5	5
197	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C A C C	(12209) - NADH dehydrogenas e subunit 5	1
198	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G T G G	(12213) - NADH dehydrogenas e subunit 5	1
199	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AAC GTG AAC AAC	(12215- 12217) - NADH dehydrogenas e subunit 5	3
200	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCCAACAAC TTAGTTCTA GCCAACAAC GCCAACAAC	(12219- 12227) - NADH dehydrogenas e subunit 5	9
201	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TAT GGC TAT TAT	(12229- 12231) - NADH dehydrogenas e subunit 5	3
202	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCA AGT TCA TCA	(12233- 12235) - NADH	3

			dehidrogenas e subunit 5	
203	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T G T T	(12237) - NADH dehidrogenas e subunit 5	1
204	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTTTA AGGCC CTTTA CTTTA	(12239- 12243) - NADH dehidrogenas e subunit 5	5
205	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A T T	(12245) - NADH dehidrogenas e subunit 5	1
206	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C A C C	(12248) - NADH dehidrogenas e subunit 5	1
207	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GAGA TGTT GAGA GAGA	(12250- 12253) - NADH dehidrogenas e subunit 5	4
208	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GGAG CTGT GGAG GGAG	(12255- 12258) - NADH dehidrogenas e subunit 5	4
209	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GAA TGC GAA GAA	(12262- 12264) - NADH dehidrogenas e subunit 5	3
210	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAT GTG CAT CAT	(12266- 12268) - NADH dehidrogenas e subunit 5	3
211	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CC TT CC CC	(12271- 12272) - NADH dehidrogenas e subunit 5	2

212	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCCTCT AATGTA TCCTCT TCCTCT	(12274- 12279) - NADH dehydrogenas e subunit 5	6
213	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AA GT AA AA	(12281- 12282) - NADH dehydrogenas e subunit 5	2
214	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12284) - NADH dehydrogenas e subunit 5	1
215	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G T G G	(12286) - NADH dehydrogenas e subunit 5	1
216	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GA AG GA GA	(12289- 12290) - NADH dehydrogenas e subunit 5	2
217	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GA TG GA GA	(12292- 12293) - NADH dehydrogenas e subunit 5	2
218	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CC TG CC CC	(12295- 12296) - NADH dehydrogenas e subunit 5	2
219	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCGAACAGA GGAGTTTTT CCGAACAGA CCGAACAGA	(12299- 12307) - NADH dehydrogenas e subunit 5	9
220	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCAAAC ATGGTG GCAAAC GCAAAC	(12309- 12314) - NADH dehydrogenas e subunit 5	6

221	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12316) - NADH dehidrogenas e subunit 5	1
222	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAGCCC ATTTAG CAGCCC CAGCCC	(12319- 12324) - NADH dehidrogenas e subunit 5	6
223	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AC GA AC AC	(12326- 12327) - NADH dehidrogenas e subunit 5	2
224	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCCA TGAG GCCA GCCA	(12330- 12333) - NADH dehidrogenas e subunit 5	4
225	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A T T	(12335) - NADH dehidrogenas e subunit 5	1
226	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TTTACAAC GCCTGCGA TTTACAAC TTTACAAC	(12337- 12344) - NADH dehidrogenas e subunit 5	8
227	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TATCGGAGACA ATGCTTCCTAT TATTGGAGACG TATTGGAGACG	(12347- 12357) - NADH dehidrogenas e subunit 5	11
228	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CG GC CG CG	(12359- 12360) - NADH dehidrogenas e subunit 5	2
229	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTAATCCTCAGTATAGCC GGCGGGTGATTGGGTTGA CTAATCCTCAGTATAGCC CTAATCCTCAGTATAGCC	(12363- 12380) - NADH dehidrogenas e subunit 5	18

230	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G A G G	(12382) - NADH dehydrogenas e subunit 5	1
231	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C	(12384) - NADH dehydrogenas e subunit 5	1
232	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAATAAACC TGGGTTGTT CAATAAACC CAATAAACC	(12388- 12396) - NADH dehydrogenas e subunit 5	9
233	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AAACAC TCGTTT AAACAC AAACAC	(12398- 12403) - NADH dehydrogenas e subunit 5	6
234	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TG GT TG TG	(12405- 12406) - NADH dehydrogenas e subunit 5	2
235	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A	(12409) - NADH dehydrogenas e subunit 5	1
236	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12411) - NADH dehydrogenas e subunit 5	1
237	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCAACAAATCT GTGGAGGGGTA CCAACAAATCT CCAACAAATCT	(12413- 12423) - NADH dehydrogenas e subunit 5	11
238	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TACCCACAC CGTGGGTGT TACCCACAC TACCCACAC	(12425- 12433) - NADH dehydrogenas e subunit 5	9
239	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AATC CTGT AATC AATC	(12435- 12438) - NADH dehydrogenas e subunit 5	4

240	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CACC TGTA CACC CACC	(12440- 12443) - NADH dehydrogenas e subunit 5	4
241	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12445) - NADH dehydrogenas e subunit 5	1
242	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CT AG CT CT	(12447- 12448) - NADH dehydrogenas e subunit 5	2
243	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C	(12450) - NADH dehydrogenas e subunit 5	1
244	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCC AGG TCC TCC	(12452- 12454) - NADH dehydrogenas e subunit 5	3
245	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CT TG CT CT	(12456- 12457) - NADH dehydrogenas e subunit 5	2
246	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CT GA CT CT	(12459- 12460) - NADH dehydrogenas e subunit 5	2
247	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G A G G	(12462) - NADH dehydrogenas e subunit 5	1
248	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A C A A	(12464) - NADH dehydrogenas e subunit 5	1
249	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TA GT TA TA	(12466- 12467) - NADH dehydrogenas e subunit 5	2

250	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCC AAT TCC TCC	(12469- 12471) - NADH dehydrogenas e subunit 5	3
251	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AGCCGC GCGGTG AGCCGC AGCCGC	(12473- 12478) - NADH dehydrogenas e subunit 5	6
252	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAG TGA CAG CAG	(12481- 12483) - NADH dehydrogenas e subunit 5	3
253	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AAAATCAGCCCAA GTTGCGGTTAGTG AAAATCAGCCCAA AAAATCAGCCCAA	(12485- 12497) - NADH dehydrogenas e subunit 5	13
254	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C A C C	(12500) - NADH dehydrogenas e subunit 5	1
255	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CC AG CC CC	(12503- 12504) - NADH dehydrogenas e subunit 5	2
256	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCAC AGGG CCAC CCAC	(12506- 12509) - NADH dehydrogenas e subunit 5	4
257	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C	(12511) - NADH dehydrogenas e subunit 5	1
258	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A T T	(12513) - NADH dehydrogenas e subunit 5	1
259	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A	(12515) - NADH dehydrogenas e subunit 5	1

260	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TACC GTTT TACC TACC	(12517- 12520) - NADH dehydrogenas e subunit 5	4
261	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCAGCT TGTATG GCAGCT GCAGCT	(12522- 12527) - NADH dehydrogenas e subunit 5	6
262	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AG GT AG AG	(12530- 12531) - NADH dehydrogenas e subunit 5	2
263	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AGGCCCCACC TTTATGGTTT AGGCCCCACC AGGCCCCACC	(12533- 12542) - NADH dehydrogenas e subunit 5	10
264	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12544) - NADH dehydrogenas e subunit 5	1
265	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GTT TAA GTT GTT	(12546- 12548) - NADH dehydrogenas e subunit 5	3
266	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12550) - NADH dehydrogenas e subunit 5	1
267	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCAT TGTC GCAT GCAT	(12551- 12555) - NADH dehydrogenas e subunit 5	4
268	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ACTAC TTAGA ACTAC ACTAC	(12557- 12561) - NADH dehydrogenas e subunit 5	5



269	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTC TAG CTC CTC	(12563- 12565) - NADH dehidrogenas e subunit 5	3
270	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	G T G G	(12568) - NADH dehidrogenas e subunit 5	1
271	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ACTA CAGT ACTA ACTA	(12570- 12573) - NADH dehidrogenas e subunit 5	4
272	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GT TA GT GT	(12576- 12577) - NADH dehidrogenas e subunit 5	2
273	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12581) - NADH dehidrogenas e subunit 5	1
274	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTG TAT CTG CTG	(12584- 12585) - NADH dehidrogenas e subunit 5	3
275	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AA CC AA AA	(12587- 12588) - NADH dehidrogenas e subunit 5	2
276	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C G C C	(12590) - NADH dehidrogenas e subunit 5	1
277	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TCC GAG TCC TCC	(12592- 12594) - NADH dehidrogenas e subunit 5	3
278	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A	(12596) - NADH dehidrogenas e subunit 5	1

279	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AT TG AT AT	(12600-12601) - NADH dehidrogenas e subunit 5	2
280	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CGAAT TACCA CGAAT CGAAT	(12603-12607) - NADH dehidrogenas e subunit 5	5
281	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C	(12609) - NADH dehidrogenas e subunit 5	1
282	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCCCAT GTTAGG TCCCAT TCCCAT	(12611-12616) - NADH dehidrogenas e subunit 5	6
283	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A C C	(12618) - NADH dehidrogenas e subunit 5	1
284	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A G A A	(12620) - NADH dehidrogenas e subunit 5	1
285	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CC GG CC CC	(12622-12623) - NADH dehidrogenas e subunit 5	2
286	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCA GGT CCA CCA	(12625-12627) - NADH dehidrogenas e subunit 5	3
287	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAACAC ATTGGT CAACAC CAACAC	(12629-12634) - NADH dehidrogenas e subunit 5	6
288	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCC GGA CCC CCC	(12637-12639) - NADH	3

			dehydrogenas e subunit 5	
289	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C T C C	(12641) - NADH dehydrogenas e subunit 5	1
290	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CAACCTG GTGTAGT CAACCTG CAACCTG	(12643- 12649) - NADH dehydrogenas e subunit 5	7
291	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TTGCC CCTAT TTGCC TTGCC	(12653- 12657) - NADH dehydrogenas e subunit 5	5
292	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AGGA TTTC AGGA AGGA	(12659- 12662) - NADH dehydrogenas e subunit 5	4
293	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCATCACCACA AATATCTTGTT CCATCACCACA CCATCACCACA	(12664- 12674) - NADH dehydrogenas e subunit 5	11
294	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TA GT TA TA	(12676- 12677) - NADH dehydrogenas e subunit 5	2
295	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A T T	(12679) - NADH dehydrogenas e subunit 5	1
296	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AC TT AC AC	(12681- 12682) - NADH dehydrogenas e subunit 5	2
297	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C A C C	(12685) - NADH dehydrogenas e subunit 5	1

298	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	T A T A	(12688) - NADH dehydrogenas e subunit 5	1
299	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TGCGCCCTC GAATAATGG TGCGCCCTC TGCGCCCTC	(12690- 12698) - NADH dehydrogenas e subunit 5	9
300	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	C A C C	(12700) - NADH dehydrogenas e subunit 5	1
301	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AA TG AA AA	(12703- 12704) - NADH dehydrogenas e subunit 5	2
302	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATGAT GCATA ATGAT ATGAT	(12706- 12710) - NADH dehydrogenas e subunit 5	5
303	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TC GA TC TC	(12712- 12713) - NADH dehydrogenas e subunit 5	2
304	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A	(12715) - NADH dehydrogenas e subunit 5	1
305	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	AA GT AA AA	(12717- 12718) - NADH dehydrogenas e subunit 5	2
306	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	ATTA TGGC ATTA ATTA	(12720- 12723) - NADH dehydrogenas e subunit 5	4
307	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCCTTCTCCACATC TGAAGAATGCGTGT GCCTTCTCCACATC GCCTTCTCCACATC	(12726- 12739) - NADH	14

			dehidrogenas e subunit 5	
308	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	A T A A	(12741) - NADH dehidrogenas e subunit 5	1
309	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CCA GAG CCA CCA	(12743- 12745) - NADH dehidrogenas e subunit 5	3
310	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	CTA TAT CTA CTA	(12747- 12749) - NADH dehidrogenas e subunit 5	3
311	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	GCCTT TAGGA GCCTT GCCTT	(12751- 12755) - NADH dehidrogenas e subunit 5	5
312	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1	TAA GGC TAA TAA	(12757- 12759) - NADH dehidrogenas e subunit 5	3
313	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	TGGCC TGGCC AAAAA TGGCC TGGCC TGGCC	(14218- 14222) - cytochrome b	5
314	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	C C A C C C	(14224) - cytochrome b	1
315	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	CCT CCT AAA CCT CCT CCT	(14227- 14230) - cytochrome b	3

316	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i3 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	CG CG AA CG CG CG	(14232- 14233) - cytochrome b	2
317	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	A A A C A	(14849) - cytochrome b	1
318	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g1_i1	A A A T	(15369) - tRNA-Thr	1
319	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN10253_c0_g1_i1	T T T T C	(16205) - [D- loop]	1
320	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN10253_c0_g1_i1	CC AG AG CC CC	(16211- 16212) - [D- loop]	2
321	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN10253_c0_g1_i1	TAC CGG CGG TAC TAC	(16215- 16217) - [D- loop]	3
322	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN10253_c0_g1_i1	CC GA GA CC CC	(16220- 16221) - [D- loop]	2
323	secuencia referencia TRINITY_DN28133_c1_g1_i2 TRINITY_DN28133_c1_g1_i1 TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1	A A A C A	(16215- 16217) - [D- loop]	1
324	secuencia referencia TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN71581_c0_g1_i1	CC CC CC AT	(16239- 16240) - [D- loop]	2

325	secuencia referencia TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN71581_c0_g1_i1	CCAC CCAC CCAC GAGA	(16243- 16246) - [D- loop]	4
326	secuencia referencia TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN71581_c0_g1_i1	CCCA CCCA CCCA TAAC	(16248- 16251) - [D- loop]	4
327	secuencia referencia TRINITY_DN28133_c0_g2_i1 TRINITY_DN28133_c0_g1_i1 TRINITY_DN71581_c0_g1_i1	A A A G	(16258) - [D- loop]	1
TOTAL				1173

#### 1.4. Heteroplasma Cc3:

Heteroplasma	Cobertura	Nucleótidos	Región	Longitud
1	secuencia referencia TRINITY_DN5524_c0_g1_i1 TRINITY_DN990_c0_g1_i1	GA GA TG	(32-33) - tRNA-Phe	2
2	secuencia referencia TRINITY_DN23496_c0_g1_i1 TRINITY_DN23786_c0_g1_i1 TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1	A C C A A	(3881) - tRNA-Gln	1
3	secuencia referencia TRINITY_DN23496_c0_g1_i1 TRINITY_DN23786_c0_g1_i1 TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1	T A A T T	(3889) - tRNA-Gln	1
4	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	AAA AAA AAA GCC	(5354-5355) - tRNA-Tyr	3
5	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	GGGACTACAGC GGGACTACAGC GGGACTACAGC CTATTCCTGCT	(5357-5367) - tRNA-Tyr	11
6	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	CAA CAA CAA ATG	(5369-5371) - tRNA-Tyr	3

7	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	G G G C	(5373) - tRNA-Tyr	1
8	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	TA TA TA CG	(5375-5376) - tRNA-Tyr	2
9	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	TACTCTCAGCC TACTCTCAGCC TACTCTCAGCC AGATTAGGTAT	(5378-5388) - tRNA-Tyr	11
10	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	CCC CCC CCC GGG	(5390-5392) - tRNA-Tyr	3
11	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2	A A A G	(5394) - tRNA-Tyr	1
12	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2 TRINITY_DN29176_c0_g1_i2	C C C C G	(6694) - cytochrome c oxidase subunit I	1
13	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN29198_c0_g1_i2 TRINITY_DN29176_c0_g1_i2	TGGAATACCA TGGAATACCA TGGAATACCA TGGAATACCA GTCGTGGTAT	(6699-6708) - cytochrome c oxidase subunit I	10
14	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN23610_c0_g1_i1 TRINITY_DN24191_c0_g1_i1	GCTCCCCT AAAAAAAAA AAAAAAAAA GCTCCCCT GCTCCCCT	(9463-9470) - tRNA-Gly	8
15	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN23610_c0_g1_i1 TRINITY_DN24191_c0_g1_i1	GT AA AA GT GT	(9472-9473) - tRNA-Gly	2
16	secuencia referencia TRINITY_DN29198_c0_g1_i1 TRINITY_DN29176_c0_g1_i1 TRINITY_DN23610_c0_g1_i1 TRINITY_DN24191_c0_g1_i1	T A A T T	(9475) - tRNA-Gly	1



TOTAL				61
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### 1.3 RESUMEN DE LA HETEROPLASMA PARA CADA INDIVIDUO EVALUADO:

Ei1:

Región	# de sitios heteroplásmicos	% de heteroplasmia de la región	% de la heteroplasmia total	% de heteroplasmia del total del genoma
rRNA-12S ribosomal RNA	2	0,21	0,7	0,01
rRNA-16S ribosomal RNA	12	0,74	4,2	0,07
tRNA-Tyr	18	25,35	6,29	0,11
tRNA-Asp	26	37,14	9,09	0,16
cytochrome c oxidase subunit II	28	4,08	9,79	0,17
tRNA-Lys	48	65,75	16,78	0,29
ATP synthase F0 subunit 8	47	28,48	16,43	0,29
cytochrome c oxidase subunit III	39	4,97	13,64	0,24
NADH dehydrogenase subunit 3	2	0,57	0,7	0,01
tRNA-Arg	5	7,14	1,75	0,03
tRNA-His	5	7,14	1,75	0,03
NADH dehydrogenase subunit 6	1	0,19	0,35	0,01
tRNA-Glu	32	47,06	11,19	0,19
Zona intergénica	1	-	0,35	0,01
cytochrome b	11	0,96	3,85	0,07
tRNA-Thr	9	12,68	3,15	0,05

total	286	-	100	1,74
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Cc1:

Región	# de sitios heteroplásmicos	% de heteroplasma de la región	% de la heteroplasma total	% de heteroplasma del total del genoma
rRNA-16S ribosomal RNA	3	0,19	1	0,02
NADH dehydrogenase subunit 2	32	3,07	10,7	0,19
tRNA-Trp	1	1,3	0,33	0,01
tRNA-Tyr	4	5,63	1,34	0,02
cytochrome c oxidase subunit I	33	2,13	11,04	0,2
cytochrome c oxidase subunit III	7	0,89	2,34	0,04
tRNA-Gly	10	14,71	3,34	0,06
NADH dehydrogenase subunit 3	45	12,86	15,05	0,27
tRNA-Arg	48	68,57	16,05	0,29
NADH dehydrogenase subunit 4L	32	10,7	2,32	0,19
cytochrome b	76	6,64	25,42	0,46
tRNA-Thr	7	9,86	2,34	0,04
tRNA-Pro	1	1,41	0,33	0,01
total	299	-	100	1,8

Cc2:

Región	# de sitios heteroplásmicos	% de heteroplasma de la región	% de la heteroplasma total	% de heteroplasma del total del genoma
NADH dehydrogenase subunit 1	1	0,1	0,09	0,01

tRNA-Ile	9	13,04	0,77	0,05
tRNA-Met	28	40,58	2,39	0,17
NADH dehydrogenase subunit 2	5	0,48	0,43	0,03
tRNA-Tyr	18	25,35	1,53	0,11
tRNA-Lys	2	2,74	0,17	0,01
ATP synthase F0 subunit 6	1	0,15	0,09	0,01
cytochrome c oxidase subunit III	2	0,26	0,17	0,01
tRNA-Gly	1	1,47	0,09	0,01
NADH dehydrogenase subunit 4	221	16	18,84	1,34
tRNA-His	50	71,43	4,26	0,3
tRNA-Ser	55	83,33	4,69	0,33
tRNA-Leu	53	73,61	4,52	0,32
NADH dehydrogenase subunit 5	694	38,62	59,16	4,22
cytochrome b	12	1,05	1,02	0,07
tRNA-Thr	1	1,41	0,09	0,01
[D-loop]	20	2,08	1,71	0,12
total	1173	-	100	7,13

Cc3:

Región	# de sitios heteroplásmicos	% de heteroplasmia de la región	% de la heteroplasmia total	% de heteroplasmia del total del genoma
tRNA-Phe	2	2,9	3,28	0,01
tRNA-Gln	2	2,82	3,28	0,01
tRNA-Tyr	35	49,3	57,38	0,21
cytochrome c oxidase subunit I	11	0,71	18,03	0,07
tRNA-Gly	11	16,18	18,03	0,07
total	61	-	100	0,37

**1.4 MUTACIONES DE LAS TORTUGAS RELACIONADAS CON MUTACIONES PATOLÓGICAS EN HUMANOS. LOS CAMBIOS NUCLEOTÍDICOS EN NEGRO HACEN REFERENCIA A LOS REPORTADOS EN EL MTDNA HUMANO. LOS NUCLEÓTIDOS EN ROJO HACEN REFERENCIA A LOS CAMBIOS EVIDENCIADOS EN EL MTDNA DE LAS TORTUGAS ESTUDIADAS. LAS LECTURAS REVELAN EL NÚMERO DE SECUENCIAS QUE FUERON TOMADAS PARA DETERMINAR EL UMBRAL:**

Ei1:

Mutación	Locus	Enfermedad	Cambio nucleotídico	Umbral (%)	Lecturas
A7877C	MT-COX2	PEG glaucoma	A-C C-A	25	4
G8719A	MT-ATP6	Suspected mito disease	G-A G-A	33	3
T8741G	MT-ATP6	MILS	T-G A-G	33	3
TA11622del	MT-ND4	CPEO	TA-del G-A	50	2

Cc1:

Mutación	Locus	Enfermedad	Cambio nucleotídico	Umbral (%)	Lecturas
T4648C	MT-ND2	PEG	T-C A-T	33	3
T9861C	MT-COX3	AD	T-C A-T	25	4
T9957C	MT-COX3	MELAS	T-C C-A	33	3
T15209C	MT-CYB	Prader-Willi syndrome	T-C T-C	33	3
T15237C	MT-CYB	LHON	T-C G-A	33	3
T15287C	MT-CYB	DEAF	T-C C-A	33	3

Cc2:

Posición	Locus	Enfermedad	Cambio nucleotídico	Umbral (%)	Lecturas
C3551T	MT-ND1	LHON	C-T C-T	33	3
C3769G	MT-ND1	LHON	C-G C-A	66	3
G3946A	MT-ND1	MELAS	G-A G-C	33	3
T3949C	MT-ND1	MELAS	T-C G-C	33	3
G3958A	MT-ND1	LHON	G-A C-A	33	3
G3959A	MT-ND1	MELAS	G-A C-T	33	3
A11467G	MT-ND4	Altered brain pH	A-G A-T	33	3
G11696A	MT-ND4	LHON	G-A G-T	33	3
C11777A	MT-ND4	Leigh Disease	C-A A-T	33	33
G11778A	MT-ND4	LHON	G-A T-G	33	3
G11832A	MT-ND4	EXIT	G-A A-T	25	4
C11874A	MT-ND4	LHON	C-A C-A	25	4
C11919T	MT-ND4	Thyroid Cancer Cell Line	C-T A-T	25	4
C11994T	MT-ND4	OAT	C-T A-T	25	4
A12026G	MT-ND4	DM	A-G A-G	25	4
A12146G	tRNA His	MELAS	A-G T-G	33	3
G12147A	tRNA His	Encephalopathy	G-A A-T	33	3
T12148C	tRNA His	Developmental delay	T-C C-G	33	3

G12183A	tRNA His	DEAF	G-A C-T	33	3
C12187A	tRNA His	Asthenozoosper mia	C-A T-G	33	3
G12192A	tRNA His	MICM	G-A C-G	33	3
C12206T	tRNA His	MELAS	C-T A-T	33	3
G12207A	tRNA Ser	Encephalopathy	G-A A-T	33	3
C12224T	tRNA Ser	DEAF	C-T C-T	33	3
C12258A	tRNA Ser	DMDF	C-A G-T	33	3
C12262A	tRNA Ser	Deafness	C-A G-T	33	3
C12264T	tRNA Ser	DEAF	C-T A-C	33	3
G12276A	tRNA Leu	CPEO	G-A C-T	33	3
A12299C	tRNA Leu	MELAS	A-C C-G	33	3
T12311C	tRNA Leu	CPEO	T-C A-G	33	3
T12313C	tRNA Leu	FSHD	T-C A-T	33	3
G12316A	tRNA Leu	CPEO	G-A C-G	33	3
A12320G	tRNA Leu	MM	A-G A-T	33	3
T12338C	MT-ND5	LHON	T-C T-C	33	3
G12372A	MT-ND5	Altered brain pH	G-A A-T	33	3
A12425de I	MT-ND5	Mitochondrial Myopathy & Renal Failure	A-del T-C	33	3
T12477C	MT-ND5	MHCM	T-C G-T	33	3

G12622A	MT-ND5	Leigh Disease	G-A C-G	33	3
A12634G	MT-ND5	Thyroid Cancer Cell Line	A-G C-T	33	3
T12706C	MT-ND5	Leigh Disease	T-C A-G	33	3
T14849C	MT-CYB	EXIT	T-C A-C	25	4

Cc3:

Posición	Locus	Enfermedad	Cambio nucleotídico	Umbral (%)	Lecturas
G6708A	MT- CO1	Rhabdomyolysis y MM	G-A A-T	25	4