

Exploitation of Concatenated Olive Plastome DNA Markers for Reliable Varietal Identification for On-Farm Genetic Resource Conservation

Muhammad Noman^{1,2*}, Wajya Ajmal^{1*}, Muhammad Ramzan Khan^{1,2#}, Armghan Shahzad^{1,2}, Ghulam Muhammad Ali^{1,2#}

¹National Institute for Genomics and Advanced Biotechnology, National Agricultural Research Centre (NARC), Islamabad, Pakistan

²PARC Institute of Advanced Studies in Agriculture, National Agricultural Research Centre (NARC), Islamabad, Pakistan

Email: [#]drmrkhan_nigab@yahoo.com, [#]drgmali@yahoo.com

Received 20 September 2015; accepted 5 December 2015; published 8 December 2015

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Abstract

Rapid and reliable identification of olive plants using DNA markers has been attempted in the past but the selection of polymorphic regions for discrimination at varietal level remained obscure. Recent sequencing of plastid genome of the olive flaunts high resolution Cp markers for olive DNA fingerprinting. Using this information, we designed a combination of chloroplast markers to amplify genes recruited in photosynthesis, ribosomal and NADH energy metabolism for varietal identification of olive plants. Concatenated DNA sequences of more than 100 unknown and 10 reference plants samples were analyzed using various bioinformatics and phylogenetic tools. Conserved blocks of nucleotide sequences were detected in multiple alignments. Phylogenetic reconstruction differentiated the unknown plants into various clusters with known varieties. Further narrowing down of the samples through UPGMA tree clearly separated the plants into Arbosana, Frantoio and Koroneiki as the major varieties. Multiple alignments of these clusters revealed important variety specific SNPs including G and T nucleotides at specific positions. Sequence identifying at intra cultivar level was more than 98.79% while it dropped to 97%, and even to 96% at inter varietal level. Furthermore, a neighbor net network analysis separated these three clusters, thus validating the results of UPGMA tree. Over all, out of 100 plants samples, 49 plants were identified that fall into 10 varieties including Arbosana, Carolea, Chetoui, Coratina, Domat, Frantoio, Gemlik, Koroneiki,

^{*}Contributed equally.

How to cite this paper: Noman, M., Ajmal, W., Khan, M.R., Shahzad, A. and Ali, G.M. (2015) Exploitation of Concatenated Olive Plastome DNA Markers for Reliable Varietal Identification for On-Farm Genetic Resource Conservation. *American Journal of Plant Sciences*, **6**, 3045-3074. <u>http://dx.doi.org/10.4236/ajps.2015.619299</u>

[#]Corresponding authors.

Leccino and Moraiolo. The maximum number of known plants belongs to Frantoio and Gemlik (8 each). The least number of samples was identified from Carolea, Domat and Moraiolo with 2 samples each. However, 51 plants could not be identified, as plants were not clustered with any of reference control. Our results have implications in on-farm conservation of olive germplasm and provision of genuine material for multiplication of authentic varieties. This strategy can be extended to varietal identification of other plant species.

Keywords

DNA Fingerprinting, Olive, Marker, Chloroplast, Genome, Identification, Phylogenetic

1. Introduction

One of the characteristic fruit trees of the Mediterranean area is the evergreen and long-lived olive (*Olea europaea* L.). It is diploid with 46 chromosomes from the Oleaceae family [1]-[3]. Olive can be as older as 500 years but over 2000 years older trees are also in record. It is a medium sized tree with grey-green leaves arranged opposite to one another. The olive comes from the genus Olea that has 3 subgenera Paniculatea, Olea and Tetrapilus [4]. *Olea europaea* L. is the only single species that bears edible fruit [5] [6]. The origin of olive is still unclear, but the main hypothesis suggests that it originated from the Eastern shores of the Mediterranean [7].

The fruit and oil of olive are of prime importance worldwide. Although 90% of world olive production is used for oil extraction [8], the consumption of table olives is also growing globally. Today, the olive tree is grown commercially within latitudes 30° and 45° in both the Northern and Southern hemispheres, where climatic conditions are similar to the Mediterranean basin, with mild winters and warm, dry summers [9] [10]. Pakistan lies in the belt between 30° - 45° North and South of the equator, hence it is a potential area for olive cultivation. The suitable areas include Pothwar, Khyber Pakhtunkhwa, Swat, Dir, Malakand, Loralai, Khuzdar and Quetta districts etc. Edible oil is the biggest food import item of Pakistan. Pakistan imports olive oil and fruit every year and huge funds are consumed on their cost. Self-sufficiency in edible can be attained by cultivating olive orchards in the marginal lands (more than 3 million acres; 30% of total land) of Pakistan. Under different projects, the total olive tree cover is more than 800 ha comprising of 106,048 trees. These plants are at fruiting stage and some of these plants are giving very good yield. But the biggest problem which is restricting their large scale propagation is that these olive varieties/plants are unidentified and there is no record which variety/cultivar they are. Therefore, oil extracted from these plants is mixed and does not get its premium price in the market. Unavailability of known high yielding and quality oil producing varieties/plants is the biggest hurdle for large scale propagation of olive in the poor lands of Pakistan. Furthermore, the unavailability of true to type olive nurseries is also impeding the olive propagation in the potential regions.

The olive's ancient origin, easy propagation and popularity have resulted in the presence of its numerous cultivars across the world. Several cultivars may have the same name (homonyms), or the same cultivar may be called by different names (synonyms) in different areas [11]-[13]. Many areas in botany depend on the efficiency to discriminate plant genotypes and calculate the amount of diversity and similarity in a group of genotypes. This has been done traditionally through morphological and biochemical markers and presently through DNA markers or DNA fingerprinting [14]. Molecular markers are preferred because they have several advantages over their alternatives. Like, they are co-dominantly inherited and highly polymorphic. They can be easily visualized and are spread over the whole genome evenly. They are stable, quick, inexpensive and simple to use. They require small amount of DNA and do not require any pre-info about the genome [15]. The olive gene pools have also been characterized utilizing the high resolving capacity of the molecular markers. Many researchers have traced the origin of olive germplasm using different molecular makers like RAPD [16].

An advanced genome screening technique is that of the plastome sequencing or screening the chloroplast DNA through specific markers. The chloroplasts are inherited maternally in the cultivated olives [17]. The plastidial variability is low in the cultivated olives in contrast to that detected at the subspecies level. The mitochondria and chloroplasts both pass through recurrent mutations but the level of mutations is low as demonstrated by [18]. Taking advantage of the highly conserved nature of cpDNA, universal primers for the cpDNA introns have been developed for numerous plant species [19]. Besnard and his colleagues detected 14 polymorphisms in the 3

chloroplast regions (trnT-L, trnQ-R and matK) in the Olea europaea complex [20].

For this study, the last approach of sequencing of the entire chloroplast genome of the *Olea europaea* subsp. europaea cv. Frantoio to identify the polymorphic regions was employed. The resulting availability of the entire plastome map allowed to evaluate the sequence arrangement of the plastid genome in Olea europaea and to identify new organellar polymorphisms that could discriminate between cultivated olive varieties [21]. In order to propagate only the better and high yielding cultivars, there is dire need to screen the cultivated olive plants in Pakistan to identify variety/cultivar. We can also graft our desired varieties onto the wild plants. This can enhance the olive fruit and oil yield in Pakistan. The work of this nature has not been done in Pakistan to date. Olive growers can name accurately some cultivars with distinguished phenotypic traits. But they confuse while differentiating the cultivars having similar morphological characters. Due to this problem, certified and good quality material for the establishment of new olive orchards is not available. Hence rapid and reliable identification of unknown olive plants growing at various olive farms through DNA marker is essential. Therefore, the objective of the present study was to screen unknown and known plants through specific cholorplast DNA markers for identification of polymorphic regions, identification of unknown cultivars of olive growing at different orchards in Pakistan using DNA markers, and to infer their evolutionary relationship through phylogenetic reconstruction. The results demonstrate that olive genome harbours some very advantageous polymorphic sites which can be employed for the reliable screening of unknown olive varieties through cultivar specific SNPs. The evolutionary relationship explored by phylogenetic investigation also helped in identifying the plants. Finally the neighbor-net network analysis validated the clustering of plants into specific variety.

2. Plant Materials and Methods

2.1. Selection of Materials and Sampling Plan

Information about the olive plants growing at different locations in Pakistan was obtained from National Director of the Olive Project, Pakistan Agricultural Research Council, Islamabad, Pakistan. Different areas of Khyber Pakhtunkhwa province were selected for plant sampling. Each plant was labeled using olive farm name, orchard number, row number and plant number. After plant labeling, fresh leaf tissue was harvested from the plants. The samples were stored at -80° C until DNA extraction was performed.

2.2. Sequence Retrieval and Primer Designing

The chloroplast genomes of 8 olive cultivars including Frantoio were retrieved from NCBI database. The genome sequences were aligned and scanned using MacVector7.2 software [22] and polymorphic markers were selected. In this case, three chloroplast markers Oe-psbK-psbI-trnS-trnG-trnS-GCU-trnGUCC, Oe-rps8-rpl14-rps8-rpl14 exon, Oe-ndhF exon-rpl32-trnL3-trnL-UAG were selected. Three pairs of primers were designed for all the selected genes and regions.

2.3. DNA Extraction, PCR Amplification and Sequencing

A total of 110 plant leaf samples were used for DNA extraction using CTAB method [23]. For quality assessment DNA was run on 0.8% agarose gel. The diluted DNA samples were used as a template for PCR amplification with three primer pairs. The primer pairs used were named as CP3, CP4 and CP5. The sequence of the CP5 forward primer was 5'-CTGACAATTCATTTCTATTTCTAGA-3' and reverse primer was

5'-CATTATTTATCTATAATTCGTTGGA-3'. Their position in cpDNA is 8986 to 9705 and they amplify a fragment of 720 bp length.

Each PCR reaction (50 μ l) contained 10 ng DNA template, 10× reaction buffer, 5 μ L MgCl₂, 1 μ L dNTPs, 1 μ L of each primer, and 0.5 μ L of Taq DNA polymerase (Promega, Madison, WI, USA). The reaction mixtures were incubated in a thermocycler (Applied Biosystems Inc) for 5 min at 95°C, followed by 36 cycles of 1 min at 94°C (denaturing), 1 minute at the annealing temperature 58°C, and 1 min at 68°C (extension). PCR products were run on 1.2% agarose gel to view the amplification success. The PCR product was sent to Macrogen (Korea) for sequencing.

2.4. Sequence Analysis and Multiple Alignments

The sequence files obtained were edited and analyzed with MacVector7.2 program [22]. Blastn was done for

target identification in NCBI database (<u>http://blast.ncbi.nlm.nih.gov/Blast.cgi</u>). The BioEdit software [24] was used to trim the sequences to remove the mismatched/flanking regions from both the ends. The ClustalW multiple alignment of the sequences was done using BioEdit and MEGA6 software [24] [25]. The mutations were detected, recorded and matched with previously available known data of different olive cultivars. Furthermore sequence identity at intra and inter varietal level was calculated through pairwise alignments. In this way, different olive cultivars were discriminated based on sequences similarities. A dataset was prepared that comprised 100 unknown and 10 known plants marker region sequences to be analyzed with bioinformatics software.

2.5. Phylogenetic Reconstruction

In order to infer the evolutionary relationship among different cultivars, phylogenetic reconstruction using UPGMA algorithm was done in MEGA6. The data generated was also helpful in cultivar identification.

It is well demonstrated that phylogenetic network could better reveal the evolutionary history including hybridization, recombination and homoplasmy etc. than a tree like structure. Therefore, a neighbor-net network reconstruction analysis was implemented in SplitTree4 package with default parameters using an uncorrected P distance method [26].

2.6. Unknown Plant Identification

The results from cultivar specific mutations *i.e.* SNPs, multiple alignments and phylogenetic reconstruction were combined and analyzed for plant identification. The identified plants were tabulated and shown graphically in results section.

3. Results

3.1. The Selected Marker Genes in Olive Plastome Are Polymorphic

Mariottiand his colleagues sequenced entire chloroplast genome of Frantoio cultivar and reported a number of polymorphic markers [21]. Using this information we set out to find the most variable regions with high resolving power that can be used to identify the olive plants at variety level. Scanning of the olive chloroplast genome revealed three polymorphic regions (**Supplementary Figure S1**). The region 1 coding for the photosystem thylakoid membrane (psb-A) and transfer RNA (trnL) gene is located in the start from 8986 bp to 9705 bp. This region spans a length of 720 bp. It is the most polymorphic region as it harbors six different types of mutations including two SNPs, two indels and two SSRs. The details about these regions are given in **Table 1**. Similarly, the region 2 is located between 83112 bp to 83852 bp with a stretch of 740 bp. This region was also quite polymorphic and encodes ribosomal protein S (rps). Region 3 is located in the extreme distal portion. This region could amplify a size of 1334 bp between 101263 bp to 102599 bp. Ribosomal protein S (rpsT) and NADH dehydrogenase (ndhF) are encoded by these markers genes. Based on this information, three primer pairs CP5, CP4 and CP3 were designed for the amplification of selected regions 1, 2, and 3, respectively using "primer tool" in MacVector 7.2 software (**Supplementary Table S1**).

Initially, PCR amplification followed by sequencing analysis for five known cultivars, Carolea, Gemlik, Domat, Leccino and Moraiolo grown at NARC revealed that CP5 gave the best amplification and sequencing results in comparison with CP3 and CP4 primers. There were fewer polymorphic sites detected in regions ampli-

mentioneu.			
Sr. No.	Polymorphism type	Motif	Position
1	SSR	T10-11	9072
2	SNP	C/T	9463
3	SNP/Indel	A/T/-	9535
4	Indel	TTAGATA/-	9536
5	Indel	A4(G)A5/-	9574
6	SSR	A11-14	9579

Table 1. Mutations detected in the selected polymorphic region of olive plastome. Type and position of mutation are also mentioned.

fied using CP3 and CP4 primers. Furthermore the sizes of their products were also longer in comparison with CP5 (Data not shown). On the other hand, CP5 revealed a number of polymorphic sites. Hence CP5 primer pair was selected for the amplification of olive samples. Moreover the product size with CP5 was smaller (less than 720 bp) that could be easily amplified which reduced the sequencing cost as well. At least three PCR products were sequenced for each sample. The sequences were edited using BioEdit program and trimmed in order to eliminate the errors induced by sequencing procedure and to get the reliable sequence for analysis.

To explore the variability in the upstream regions of chloroplast genes, five reference plants sampled from NARC were compared with Frantoio sequence of NCBI database. For this purpose a multiple alignment was generated in BioEdit program. The alignment in **Figure 1** shows that the selected region is quite polymorphic. In a short span of 600 bp, 14 mutations can be identified. These mutations included SNPs and deletion/insertions. There are two deletions located at 445 bp and 514 bp position, where A is deleted. The most frequent substitutions present are A and G nucleotides. There are specific SNPs in the NARC Carolea including A at position 46, 86, 294 and 296. Similarly another SNP of the nucleotide G is present only in NCBI Frantoio at 238th position. These mutations seem to be cultivars specific.

NARC Carolea	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC Domat	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC Gemlik	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC Leccino	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC Moraiolo	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NCBI_Frantoio	AAGATCTATT (CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC_Carolea	TACCGAAGGG #	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Domat	TACCGTAGTG #	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Gemlik	TACCGTAGGG #	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Leccino	TACCGTAGTG 3	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
NARC_Moratolo	TACCGTAGTG A	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
NCBI_Franto10	TACCGTAGTG I	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
NARC Carolea	AATAAAATCC #	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
NARC Domat	AATAAAATCC A	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
NARC Gemlik	AATAAAATCC A	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
NARC Leccino	AATAAAATCC A	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
NARC Moraiolo	AATAAAATCC A	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
NCBI Frantoio	AATAAAATCC A	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
_								
NARC_Carolea	TTCAAAAATT 1	IGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAAAAAGGG	ATTCAAACCC	TCGGTACGAA
NARC Domat	TTCAAAAATT 1	IGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
NARC Gemlik	TTCAAAAATT 1	IGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACOGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
NARC Leccino	TTCAAAAATT 1	IGAAAAATAA	TAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
NARC Moraiolo	TTCAAAAATT 1	IGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
NCBI Frantoio	TTCAAAAATT 1	IGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
_								
NARC_Carolea	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Domat	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Gemlik	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Leccino	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Moraiolo	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NCBI_Frantoio	TAACTCGTAC A	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC Carolea	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC Domat	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC Gemlik	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC Leccino	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC Moraiolo	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NCBI Frantoio	TACATATAAT (STAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NAKC_Carolea	GATAAAGGAA (GGCTCGAAC	GAGCCTATAA	ATAAATAAAG	AAAAAAAAA	AAGAAAACTT	CITG	
NARC_Domat	GATAAAGGAA (GGCTCGAAC	GAGCCTATAA	ATAAATAAAG	AAAAAAAAA	AAAAAAACTT	CTTT	
NARC_Gemlik	GATAAAGGAA (SGGCICGAAC	GAGCCTATAA	ATAA-TAAAG	AAAAAAAAAA	AAAAAAACTT	CIII	
NARC_Leccino	GATAAAGGAA (GGCTCGAAC	GAGCCTATAA	ATAAATAAAG	AAAAAAAAA	AAAAAAACAT	CITT	
NAKC_Moraiolo	GATAAAGGAA (GGCTCGAAC	GAGCCTATAA	ATAAATAAAG	AAAAAAAAAA	AAAAAAACTT	CTTT	
NUBI_Frantoio	GATAAAGGAA (SGGCI CGAAL	GAGCULAIAA	ATAAATAAAG	AAAAAAAAAA	ANGARGACAI	0111	

Figure 1. Multiple alignments of the marker region sequences of 5 olive varieties collected from NARC and one sequence of Frantoio retrieved from NCBI database, using BioEdit software. The shaded regions show the conserved sequences in the marker region of the chloroplast DNA of these different varieties. The regions that are not shaded exhibit the sites of mutations. These are SNPs and indels. SNPs are substitutions of single nucleotides. The gaps are the indels.

The above results allow us to infer that upstream region of the olive plastome is highly polymorphic with cultivar specific SNPs. Thus, this region *i.e.* CP5 primer specific can be used to identify plants at the variety level.

3.2. Phylogenetic Reconstruction Clustered the Unknown with Known Varieties of Olive

After sampling, the leaf material was immediately processed for DNA extraction using CTAB method [23]. A total of 110 samples were run on agarose gel for quantification. Chloroplast DNA was also present in this genomic DNA. These DNA samples were labelled and stored at -20° C. As CP5 primer pair was found to be the most polymorphic that could amplify a very short region of 720 bp containing 6 different mutations; therefore this primer pair was used to amplify Oe-psbK-psbI and Oe-trnS-trnG-1-4 regions of the plastome DNA of olive. It was possible to amplify the entire plate of 96 samples in a single PCR reaction. The amplified products were resolved on agarose gel against 1 kb ladder (**Figure 2**). The quality and quantity of PCR product was good enough for sequencing.

Sequencing of all the 110 samples was carried out using the services of MACROGEN Korea. Targets samples were selected using BLAST search. The sequences were edited using BioEdit software [24]. The sequences were trimmed and aligned. This region contains all the SNPs, indels and SSRs showing polymorphism in different samples.

Based on sequence data, three types of *in silico* approaches were adopted to identify the unknown olive samples/sequences. Firstly, comparison of unknown sequences with known sequences through multiple alignments Secondly, identification of variety specific SNPs, indels and SSRs in unknown plant samples. Thirdly, phylogenetic reconstruction of unknown plants with known plants using UPGMA and neighbor-net network analysis. In order to get the final results about the plant samples identification, these three approaches were combined.

Multiple alignments of all the samples were generated (Supplementary Figure S2). The sequences for all the samples were highly conserved but different groups of plants with specific mutations were detectable. SNPs, indels and deletions were found throughout the aligned regions. The conserved region was shaded while the sites of mutations were not as shown in the Supplementary Figure S2. Though chloroplast like mitochondria is inherited from the mother parent only, this is exempted from genetic recombination during meiosis. Even, the major portion of the CpDNA is conserved, but the sequencing of the whole plastome of olive revealed that mutations such as SNPs, indels and SSRs are present. Some of the mutations are variety specific and this level of polymorphism is suitable to be used for cultivar identification.

In order to differentiate the unknown plants, phylogenetic reconstruction was carried out for all the samples including 100 unknown plants samples along with 10 known plants. A circular phylogenetic tree (Figure 3) demonstrates 17 clusters and 21 branches. Of them, 49 unknown plants clustered with 10 varieties of olive plants. These clusters include Frantoio and Gemlik (8 plants each), Coratina (5 plants), Arbosana and Chetoui (6 plants each), Carolea, Domat and Moraiolo (2 plants each), Leccino (3 plants) and Koroneiki (7 plants). The



Figure 2. PCR product amplified with CP5 primer visualized on agarose gel. Each fragment is about 720 bp in length. $1 \rightarrow 110$ indicates samples and control PCR products These include 100 unknown samples and 10 reference known samples. "M" denotes marker (1 kb).



Figure 3. Phylogenetic circular tree of all the 110 olive plants samples. The evolutionary history was inferred using the UPGMA method. The optimal tree with the sum of branch length = 0.77561405 is shown. The evolutionary distances were computed using the Kimura 2-parameter method and are in the units of the number of base substitutions per site. The analysis involved 110 nucleotide sequences. All positions containing gaps and missing data were eliminated. There were a total of 523 positions in the final dataset. Evolutionary analyses were conducted in MEGA6. The clusters with coloured branches were selected for further validation in two other phylogenetic reconstructions.

reference plants getting the maximum matches of 8 plants were Frantoio and Gemlik (8 each) while the olive varieties with minimum matches were Carolea, Domat and Moraiolo (2 plants each) (**Table 2**). The Koroneiki is found at the basal position while Frantoio is the most recent variety. The rest of samples did not cluster with any of the reference samples. They clustered together, separately from the known varieties and remained unknown. They constitute majority of the samples (51).

3.3. Variety Specific SNPs, Indels, SSRs Can Be Detected in Amplified Regions

For zooming in the data were fragmented into smaller sets. For example the 1st set contains the sequences of only Arbosana, Frantoio and Koroneiki and of the unknown plants in their clusters. A smaller phylogenetic UPGMA tree was constructed in MEGA6. Figure 4 demonstrate that all the three clades retained their integrity by the clustering of the same unknown plants to their reference plants as in the circular tree thus validating the results obtained from the circular tree. The neighbour-net network better reveals recombination, homoplasmy and evo-



Figure 4. UPGMA phylogenetic tree showing unknown plants along with their reference plants. Tree was constructed using MEGA6 software. The topology of the tree is as that of the corresponding clusters in the circular tree. The number on the nodes indicates bootstrap values for 1000 replicates.

Sr. No.	Known Cultivars	No. of identified Plants
1	NARC_Carolea	2
2	NARC_Domat	2
3	NARC_Gemlik	8
4	NARC_Leccino	3
5	NARC_Moraiolo	2
6	Tn_Arbosana	6
7	Tn_Chetoui	6
8	Tn_Coratina	5
9	Tn_Frantoio	8
10	Tn_Koroneiki	7

 Table 2. List of plants identified using multiple alignments and phylogenetic reconstruction.

lutionary relationship than a tree like structure. To further validate our results, the neighbour-net network of the sequences of three clusters was constructed in SpitsTree4 software (Figure 5). The resulting phylogenetic tree exhibited the same clusters of reference plants and unknown plants. The tree is clearly differentiated into three clusters. Though branches are scattered and are at distance in Koroneiki but it is the same cluster. Furthermore the tree retained the topology as UPGMA tree. So it can be concluded from all the three phylogenetic trees, that the mutations in the marker regions are variety specific. This marker region is reliable for the identification of olive varieties.

The multiple alignments of the sequences of marker regions of 16 plants showed a number of different SNPs at specific positions (**Figure 6**). Variety specific SNPs are present specifically in the marker region sequences of Frantoio and its clustered plants at positions 82, 258, 275 and 357 collected from Ternab. Similarly, Koroneiki



Figure 5. Neighbour-net network constructed with SplitsTree 4. The clusters retained their integrity thus further validating the corresponding clusters of the circular tree.

and the unknown plants in its cluster taken from Ternab have SNPs at 147, 163 and 221 positions. Similarly, Arbosana and the unknown plants in this cluster from Ternab have a common SNP at position 163 where T has substituted. Two deletions are also found at positions 532 and 536.

The unknown plants that have mutations corresponding to their reference plants and on this basis they have clustered together with a unique reference plant. These can be considered to be that variety sharing similarities in the chloroplast DNA sequence. This small dataset validated our results.

Over all data show that there are 49 plants differentiated into 10 varieties given as Arbosana, Carolea, Chetoui, Coratina, Domat, Frantoio, Gemlik, Koroneiki, Leccino and Moraiolo (Figure 7). A total of 188 mutations are present including SNPs and indels in 110 plants in the region amplified with CP5 marker shown in Supplementary Figure S2.

T 1	ACTOTOL NAC TOTTOOTTA	TOCOTTOTO	3 T 3 T T T T T T T T T	***	03 TOTTTOO3	TTOOTATOTA	3 7 6 3 7 6 6 3 6 6
Tn_Arbosona	ACICIGAAAC ICIICGIIIA	ICCCGIAGIG	AIAIIIIIG	Incidicit	CAICIIIGGA	TICCIAICIA	AIGAICCAGG
Tn 16	ACTCTGAAAC TCTTCGTTTA	TCCCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
T_{n} 10	ACTCTGAAAC TCTTCGTTTA	TCCCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
T_{m}^{11}	ACTCTGAAAC TCTTCGTTTA	TCCCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
III_/0	ACTOTOL ALC TOTTOCTTA	TOCOCTICTO	3 T 3 T T T T T T T T	****	CA TOTTTOCA	TTOOTATOTA	3 7 6 3 7 6 6 3 6 6
ln_31	ACICIGAAAC ICIICGIIIA	ICCCGIAGIG	AIAIIIIIG	THURSDOIGH	CATCILIGGA	TICCIAICIA	AIGAICCAGG
Tn Frantoio	ACTCTGAAAC TCTTCGTTTA	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
Tn^{-3}	ACTCTGAAAC TCTTCGTTTA	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
T_{m}^{-62}	ACTOTGANAC TOTTCOTTA	TACCETACTO	ATATTTTTC:	TTTCTCTCTT	CATCTTTCCA	TTCCTATCTA	ATGATCCACC
111_03	ACTOTOMIC TOTTOOTTIM	TACCCTACTC	ATATTTTTC	TTTCTCTCTT	CATCTTTCCA	TTCCTATCTA	ATCATCCACC
Tn_80	ACICIGAAAC ICIICGIIIA	TACCGIAGIG	AIAIIIIIG	IIICICICI	CAICIIIGGA	TICCIAICIA	AIGAICCAGG
Tn 82	ACTCTGAAAC TCTTCGTTTA	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
Tn 85	ACTCTGAAAC TCTTCGTTTA	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
Ta Kananalia	ACTOTGANAC TOTTOGTTTA	TCCCGAAGTG	ATATTTTTC	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG
In_Koronekie		7000011010	3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		01.1011100.		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Tn 26	ACICIGAAAC ICIICGIIIA	TUUUGAAGGG	ATATITITIG	THUCICICIT	CATCITIGGA	TICCIAICIA	AIGACCCAGG
Tn ⁵¹	ACTCTGAAAC TCTTCGTTTA	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCAATCTA	ATGATCCAGG
Tn 33	ACCCTGAAAC CCTTCGTTTA	TCCCGTAGGG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG
Tm 20	ACCCTGAAAC TCTTCGTTTA	TCCCGTAGGG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG
111_39							
Tn Arbosona	ACGTAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTTATCTAT
$T_n 16$	ACGTAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
	ACGTAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
In_49	ACCENNECCE CONCEPTONIC	***********	A A A C C C T T T T	TOOTTOOTTA	3 TTTTT 3 3 3 TT	TTTOTTLOCK	TTTT XTOT XT
Tn 70	ACGIAAICCI GGACGIGAAG	AATAAAAICC	AAAGGGIIII	ICCIIGGIIA	ATTTICAAAT	TITCITAGGA	TITIAICIAI
Tn_31	ACGAAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
Tn Frantoio	ACGTAATCCT GGACGTGAAG	AAAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
	ACGTANTOCT COACGTONAC	AATAAATCC	AAAGGGTTTT	TCCTTCCTTA	ATTTTCAAAT	TTTCTTACCA	TTTTATCTAT
Tn_3	ACGINATOOT GONCOTONNO	1171111700	111000000000000000000000000000000000000	TOOTTOOTTA	ATTTTOAAAT	TTTOTINGGA	TITINICIAL
Tn 63	ACGIAAICCI GGACGIGAAG	AATAAAAICC	AAAGGGIIII	ICCIIGGIIA	ATTTICAAAT	TITCITAGGA	TITIAICIAI
Tn_80	ACGTAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
T. 92	ACGTAATCCT GGACGTGAAG	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
1n_82	ACCENATOOT COACCECARC	AAAAAATCC	AAACCCTTTT	TCCTTCCTTA	a TTTTC as aT	TTTCTTACCA	TTTTATCTAT
In_85	ACGINATOCI GGACGIGAAG	AAAAAAA	11100001111	TOOTIOGITA	ATTTTOART	TITCITAGGA	TITIATOTAL
Tn Koronekie	ACGAAACCCG GGACGTGAAG	AAAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
T_{n}^{-26}	ACGAAACCCG GGACGTGAAG	AAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
Tn_20	ACGAAACCCG GGACGTGAAG	AAAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT
1n_51	ACCANACCCC CCACCTCAAC	AAAAAATCC	AAACCCTTTT	TCCTTCCTTA	ATTTTCAA AT	TTTCTTACCA	TTTTATCTAT
Tn_33	ACGRARCOUS GORCOIGRAS	AAAAAAA	AAA66601111	ICCIICGIIA	ATTTTCAAAT	TITCTINGGA	TITIAICIAI
Tn 39	ACGTAACCCT GGACGTGAAG	AAAAAAATCC	AAACCCTTTT	TCCTTCCTTA	ATTTTCAAAT	TTTCTTACCA	TTTTATCTAT
11 07				1001100111		111011110011	
				1001100111		111011110011	
Tn_or	TCCACACGTT TAACTAAAAT	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG
Tn_Arbosona	TCCACACGTT TAACTAAAAT	TTCAAAAATT TTCAAAAATT	TGAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG
Tn_Arbosona Tn_16	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT	TTCAAAAATT TTCAAAAATT	ТGАААААААА ТGАААААААА	АТАААТАААТ АААААТАААТ	CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG	AAAGAGAGGG
Tn_Arbosona Tn_16 Tn 49	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGАААААААА ТGАААААААА	АТАААТАААТ АААААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAA TCCACACGTT TAACTAAAAA	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGАААААААА ТGAAAAAAA TGAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGАААААААА ТGAAAAAAAA TGAAAAAAAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТСАААААААА ТСАААААААА ТСАААААААА ТСАААААААА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGАААААААА ТGАААААААА ТGАААААААА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	Т <u>GAAAAAAAA</u> Т <u>GAAAAAAAAA</u> Т <u>GAAAAAAAAA</u> Т <u>GAAAAAAAAA</u> Т <u>GAAAAAAAA</u> Т <u>GAAAAAAAA</u>	ATAAATAAAT AAAAATAAAT ATAAATAAAT ATAAATAAAT ATAAATAAAT ATAAATAAAT ATAAATAAAT	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAA TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGААААААА TGAAAAATA TGAAAAATA TGAAAAATA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_63 Tn_80	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA ТGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТСАААААААА ТСАААААААА ТСАААААААА ТСАААААААА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_71 Tn_Frantoio Tn_3 Tn_63 Tn_63 Tn_80 Tn_82	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGААААААА TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_82 Tn_85	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА TGАЛАЛАТА TGAЛАЛТА TGAЛАЛТА TGAЛАЛТА TGAЛАЛТА TGAЛАЛТА	АТАААТАААТ АДАААТАААТ АТАААТАААТ АТАААТАА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_Koronekie	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGААААААА TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АЗААЗАЗААТ	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_21	ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ ТССАСАССТТ ТААСТАЛАЛ СССАССССТТ ТААСТАЛАЛ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТСАЛАЛАЛА ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАТАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ ТСАЛАЛАЛАЛ	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АЗАААЗАА	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGGG AAAGAGAGGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТА TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCCGG ACGGACCCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АЗАААЛАААТ АЗАААТАААТ	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCCGG ACGGACCCGG ACGGACCCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_70 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGOCATCA CAAGOCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCCGG ACGGACCCGG ACGGACCGG ACGGACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТА TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCCGG ACGGACCCGG ACGGACCCGG ACGGACCGG ACGGACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_33 Tn_39 Tn_Arbosona	ТССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ СССАССССТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGACOGG ACGGACCOGG ACGGACCOGG ACGGACCOGG ACGGACCOGG ACGGACCOGG ACGGACCOGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39 Tn_Arbosona	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТАА TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ	CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGOCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39 Tn_Arbosona Tn_16	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ГССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ	ТGААААААА ТGААААААА ТGААААААА ТGААААААА TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCCGG ACGGACCCGG ACGGACCCGG ACGGACCCGG CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT
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Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39 Tn_Arbosona Tn_16 Tn_49 Tn_70	ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ СССАССССТТ ТААСТАЛАЛТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТААСТСGTАС ТААСТСGTАС	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТАА TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ СААТСССЯАСС СААТСССЯАСС	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CATTAGCCCA CTTTAGCCCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGACCOGG ACGGACCOGG ACGGACCOGG CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_39 Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_21	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТААСТССТАС ТААСТССТАС ТААСТССТАС	ТGААААААА ТGААААААА ТGААААААА ТGААААААА TGAAAAAAA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAATA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CATTAGCCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGAG AAAGAGAGAGAGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_39 Tn_Arbosona Tn_16 Tn_70 Tn_16 Tn_70 Tn_71 Tn_71	ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААСАТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ ТССАСАССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ СССАССССТТ ТААСТААААТ	ТТСААААТТ ТТСААСТСЯТАС ТААСТСЯТАС ТААСТСЯТАС	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТАА TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CATTAGCCCA CTTTAGCCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_39 Tn_Arbosona Tn_16 Tn_49 Tn_31 Tn_Frantoio	ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ СССАССССТТ САСТАЛАЛТ	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТАСТСGTАС ТААСТСGTАС ТААСТСGTАС ТААСТСGTАС	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАЛА TGAЛАЛАТА TGAЛАЛАТА TGAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АЛАААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGACOGG ACGGACOGG CCGGACCOGG CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGAG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG AAAGAGAGAGG TCTCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_730 Tn_731 Tn_70 Tn_31 Tn_70 Tn_31 Tn_70 Tn_31 Tn_Frantoio Tn_70 Tn_31 Tn_70 Tn_31 Tn_70 Tn_31 Tn_Frantoio Tn_70 Tn_31 Tn_Frantoio Tn_70 Tn_70 </td <td>TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT</td> <td>ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС</td> <td>ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA</td> <td>АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА</td> <td>CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA</td> <td>ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC</td> <td>AAAGAGAGAG AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT</td>	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС	ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGAG AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGAGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA AAAGAGAGAGGA TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_30 Tn_49 Tn_33 Tn_39 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_Frantoio Tn_31 Tn_Frantoio Tn_3	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGGTT TAACTAAAAT CCCACCGGTT TAACTAAAAT CCCACCGGTT TAACTAAAAT CCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCGGTT TAACTAAAAT TCCACCCGGT TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGAЛАЛАТА TGAЛAЛАТА TGAЛАЛАЛАТА TGA TGA TGAC TGA TGAC TGA TGAC TGAC TGA	АТАААТААТ ААААТАААТ АТАААТАААТ АТАААТАА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGGG AAAGAGAGAGAGGG AAAGAGAGAGAGGG AAAGAGAGAGAGGG AAAGAAG
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_39 Tn_Arbosona Tn_16 Tn_70 Tn_51 Tn_33 Tn_70 Tn_70 Tn_710 Tn_Frantoio Tn_31 Tn_Frantoio Tn_31 Tn_90	ТССАСАССТТ ТААСТАЛАЛТ ТССАСАССТТ ТААСТАЛАЛТ СССАСАССТТ ТААСТАЛАЛТ АТТССАЛССС ГСССТАССАЛ АТТССАЛССС ТСССТАССАЛ АТТССАЛССС ТСССТАССАЛ АТТССАЛССС ТСССТАССАЛ	TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGААААААА ТGАААААТАА TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG CCCAGCACC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_739 Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_31 Tn_63 Tn_63 Tn_63 Tn_80	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТТСАААААТТ ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС ТААСТССГАС	ТGААААААА ТGААААААА ТGААААААА TGAAAAAAA TGAAAAAAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_30 Tn_37 Tn_731 Tn_33 Tn_39 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_80 Tn_82	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT TCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACCCGTT TAACTAAAAAT CCCACACGTT TAACTAAAAAT CCCACCCGTT TAACTAAAAAT CCCACCCGTT TAACTAAAAAT CCCACCCGTT TAACTAAAAAT CCCACCCGTT TAACTAAAAAT ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	TTCAAAAATT TACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGАЛАЛАЛА ТGАЛАЛАЛАА ТGАЛАЛАЛАА ТGАЛАЛАЛАА ТGАЛАЛАЛАА ТGАЛАЛАЛАА ТGАЛАЛАТАА ТGАЛАЛАТАА ТGАЛАЛАТАА ТGАЛАЛАТАА TGАЛАЛАТАА TGАЛАЛАЛАА TGАЛАЛАЛАА TGАЛАЛАЛАА TGАЛАЛАЛАА TGАЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАТАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAЛАЛАЛАА TGAACAA TGACGATTAG AACGGATTAG AACGGATTAG AACGGATTAG AACGGATTAG AACGGATTAG AACGGATTAG AACGGATTAG	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG ACGGACCGG ACGGACCGG CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT
Tn_Arbosona Tn_16 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_82 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_39 Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_31 Tn_Frantoio Tn_31 Tn_Frantoio Tn_80 Tn_80 Tn_70 Tn_181 Tn_Frantoio Tn_31 Tn_80 Tn_80 Tn_80 Tn_80 Tn_81 Tn_70 Tn_31 Tn_70 Tn_31 Tn_70 Tn_80 Tn_80 Tn_82 Tn_85	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGGT TAACTAAAAT CCCACCGGT TAACTAAAAT CCCACCGGT TAACTAAAAT CCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT CCCCCCGTT TAACTAAAAT CCCCCCGTT TAACTAAAAT CCCCCCGTT TAACTAAAAT ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА ТGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАТА TGАЛАЛАЛА TGАЛАЛАЛА TGАЛАЛАЛА TGAAAAAAA TGAЛAЛАЛА TGAAAAAAA TGAAAAAAAA TGAAAAAAAA TGAAAAAAAA	АТАААТАААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААТАААТ АААААТАААТ АААААТАААТ СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС СААТСССАСС	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG CCGGACCGG CCCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_70 Tn_33 Tn_70 Tn_85 Tn_Koronekie Tn_26 Tn_33 Tn_70 Tn_31 Tn_Frantoio Tn_31 Tn_Frantoio Tn_80 Tn_82 Tn_82 Tn_85	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAGAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGTT TAACTAAAAT TCCACCGGT TAACTAAAAT TCCACCGGT TAACTAAAAT CCCACCGTT TAACTAAAAT CCCACCGGT TAACTAAAAT CCCACCGGT TAACTAAAAT TCCACCGCGT TAACTAAAAT TCCACCCGTT TAACTAAAAT ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA ТGAAAAAAA TGAAAAAAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAATAA TGAAAAAAAA	АТАААТААТ АААААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АТАААТАААТ АААААА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA	ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGAACCGG ACGGACCGG ACGGACCGG CTCAGCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT TCTCCCCAATT
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Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_63 Tn_80 Tn_85 Tn_Koronekie Tn_26 Tn_51 Tn_33 Tn_70 Tn_Arbosona Tn_16 Tn_49 Tn_70 Tn_31 Tn_Frantoio Tn_3 Tn_Frantoio Tn_3 Tn_Frantoio Tn_3 Tn_Frantoio Tn_3 Tn_Frantoio Tn_3 Tn_Frantoio Tn_3 Tn_70 Tn_16 Tn_49 Tn_70 Tn_16 Tn_49 Tn_70 Tn_16 Tn_31 Tn_Frantoio Tn_31 Tn_Frantoio Tn_32 Tn_51 Tn_70 Tn_31 Tn_Frantoio Tn_31 Tn_Frantoio Tn_32 Tn_70 Tn_70 Tn_31 Tn_Frantoio Tn_32 Tn_70 Tn_70 Tn_31 Tn_Frantoio Tn_32 Tn_700 Tn_70 Tn_700 Tn_70 Tn_70	TCCACACGTT TAACTAAAAT TCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT CCCACACGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT TCCACCCGTT TAACTAAAAT ACTCGAACCC TCGGTACGAA ATTCGAACCC TCGGTACGAA	TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TTCAAAAATT TACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC TAACTCGTAC	ТGААААААА ТGАААААААА ТGАААААААА ТGАААААААА	АТАААТАААТ АЛАААТАААТ АТАААТАААТ АТАААТАА	CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGTCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CAAGCCATCA CTTTAGCCCA CTTTAGCCCA CTTTAGCCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA CTTTAGTCCA	ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGAACOGG ACGGACCOGG ACGGACCOGG CTCAGCCATC	AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG AAAGAGAGGG CTCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT TCTCCCAATT

Figure 6. Multiple alignment of the sequences of the marker regions generated in BioEdit software. These are the sequences of the CP5 amplified marker regions of three reference plants (Arbosana, Frantoio and Koroneiki) and the 13 unknown plants (Tn_16, Tn_49....). Variety specific SNPs can be seen in the unknown and reference plant. The regions that are not shaded are the sites of SNPs. The shaded regions are the conserved sequences in this region of cpDNA of the olive plants shown here.



Figure 7. Graph showing the number of identified and unidentified olive plants on the basis of DNA sequence variations, multiple alignment and phylogenetic reconstruction. Frantoio and Gemlik revealed maximum matches of 8 each.

3.4. Identification of Olive Plants Using Multiple Alignments and Phylogenetics

Forty nine unknown plants were identified when a circular UPGMA (Unweighted Pair Group Mean Average) tree was reconstructed with MEGA6 (Figure 3). The remaining 51 unknown plants either clustered together or arranged separately but not with any of the known variety. They remained unidentified. The identified plants are written against their respective known variety in the Table 3.

Frantoio variety sampled from Ternab was clustered with 8 unknown plants. Gemlik sampled from NARC also clustered with 8 other unknown plants. It means, those plants that are clustered with Frantoio are all Frantoio. This is based on the similarity of the marker region and thus they clustered with their respective varieties. Five plants found to be Coratina, 6 were clustered with Arbosana, 6 with Chetoui. 2 were Carolea, 2 Domat, 2 clustered with Moraiolo and 3 found to be Leccino. A total of 49 unknown could be identified while the remaining 51 remained unidentified (Figure 7). They might also be identified by taking more reference controls. In order to find the closeness and differentiation at cultivar level, pairwise alignments were generated using Bio-Edit software to calculate the percent identity. In this connection, three plant cultivars represented in circular UPGMA tree (Tn_Arbosana, Tn_Frantoio and Tn_Koroneiki) were tested. The similarity is 99.26% - 99.81% between Tn_Arbosana and samples. It is 99.44% - 99.81% in Tn_Frantoio and its clustered plants. Similarly, Koroneiki and its samples are 98.17% - 99.16% identical as given in Table 4. It means these are closely related and represent one cultivar.

But surprisingly, the identity was less than 98% and even reduced to 96% between the different known cultivars. Tn_Arbosana and Tn_Frantoiohas 98% identity. Tn_Arbosana and Tn_Koroneikihas 97% and Tn_Frantoio and Tn_Koroneiki has 96% identity. Hence we can infer that 98% identity shows a different cultivar and above it is the same cultivar or plant.

4. Discussion

Varietal identification of olive plants is very important for further propagation and marketing of olive oil. The

M. Noman et al.

Sr. No.	Known cultivars	Identified unknown plants	Sr. No.	Known cultivars	Identified unknown plants
		Tn_Oc1_84 (R7-P5) ^a			Tn_Oc1_17 (R2-P12)
1	NARC_Carolea	Tn_Oc1_93 (R8-P2)	2	NARC_Domat	Tn_Oc1_41 (R4-P8)
		Tn_Oc1_65 (R6-P2)			Tn_Oc1_10 (R1-P10)
2	NARC_Leccino	Tn_Oc1_68 (R6-P5)	7	NARC_Moraiolo	T- 0-1 (0 (D5 D12)
		Tn_Oc1_81 (R7-P2)			In_Oc1_60 (K5-P13)
		Tn_Oc1_28 (R3-P11)		Tn_Oc1_3 (R1-P3)	
3 NARC_Gemlik	Tn_Oc1_30 (R3-P13)			Tn_Oc1_6 (R1-P6)	
		Tn_Oc1_40 (R4-P7)			Tn_Oc1_21 (R2-P16)
	NAPC Comlik	Tn_Oc1_42 (R4-P9)	8	Th Frontoio	Tn_Oc1_63 (R5-P16)
	NARC_Gennik	Tn_Oc1_43 (R4-P10)		TII_FIAIII010	Tn_Oc1_69 (R6-P6)
		Tn_Oc1_47 (R4-P15)			Tn_Oc1_80 (R7-P1)
		Tn_Oc1_58 (R5-P11)			Tn_Oc1_82 (R7-P3)
		Tn_Oc1_87 (R7-P9)			Tn_Oc1_85 (R7-P6)
		Tn_Oc1_8 (R1-P8)			Tn_Oc1_9 (R1-P9)
		Tn_Oc1_16 (R2-P11)			Tn_Oc1_14 (R2-P6)
4	Tn Arbosana	Tn_Oc1_31 (R3-P14)	0	Tn Chatoui	Tn_Oc1_15 (R2-P9)
4	TII_AI bosana	Tn_Oc1_49 (R5-P2)	9	III_Chetour	Tn_Oc1_53 (R5-P6)
		Tn_Oc1_62 (R5-P15)			Tn_Oc1_59 (R5-P12)
		Tn_Oc1_70 (R6-P7)			Tn_Oc1_75 (R6-P12)
		Tn_Oc1_26 (R3-P9)			Tn_Oc1_7 (R1-P7)
		Tn_Oc1_33 (R3-P16)			Tn_Oc1_11 (R1-P11)
		Tn_Oc1_39 (R4-P6)			Tn_Oc1_18 (R2-P13)
5	Tn_Koroneiki	Tn_Oc1_51 (R5-P4)	10	Tn_Coratina	Tn_Oc1_28 (R3-P11)
		Tn_Oc1_89 (R7-P13)			
		Tn_Oc1_94 (R8-P4)			Tn_Oc1_78 (R6-P15)
		Tn_Oc1_98 (R8-P8)			

Table 3. Identified olive varieties and number of plants from Tarnab olive orchard.

^aTn_Oc_1 (R1-P1) stands for Tarnab Orchard 1, Sample 1 in the Row 1 and Plant number 1.

 Table 4. Sequence identity percentage calculated through pairwise alignment of the samples in three clusters of Tn_Arbosana,

 Tn_Frantoio and Tn_Koroneiki calculated in BioEdit software.

Tn_4	Arbosana	Tn_	_Frantoio	Tn_Koroneiki		
Unknown Plant	Sequence Identity %	Unknown Plant	Sequence Identity %	Unknown Plant	Sequence Identity %	
Tn_16	99.63	Tn_3	99.81	Tn_26	99.16	
Tn_49	99.81	Tn_63	99.44	Tn_51	99.08	
Tn_70	99.26	Tn_80	99.44	Tn_33	98.79	
Tn-31	99.81	Tn_82	99.63	Tn_39	98.17	

majority of the cultivated olive plants present in Pakistan were brought from foreign countries, mostly Afghanistan and their variety name is not known and this is serious problem that the farmers are facing for years. They can differentiate these plants only by their morphology. They have no idea about the exact variety name or cultivar. As the morphological as well as biochemical parameters have limitations of being not reliable and very time consuming [27]. Thus it urged to develop a rapid, reliable and cost effective protocol for the accurate identification through DNA marker, an alternative. Molecular markers can detect DNA polymorphism to discriminate different cultivars in a very effective way [28].

The chloroplast genome of olive is the best platform for resolving the mixed and unknown plants of olive exactly into their varieties [29]. CpDNA is mostly conserved but has polymorphic regions enough to be used for this purpose. In this regard, the recent sequencing of the entire chloroplast genome of Frantoio cultivar is a big landmark. Marrioti and colleagues revealed 40 polymorphic regions in the CpDNA. Recent sequencing of plastid genome of the olive flaunts high resolution Cp markers for olive DNA fingerprinting [21]. Using this information, we designed a combination of chloroplast markers to amplify genes recruited in photosynthesis, ribosomal and NADH energy metabolism. Concatenated sequence of more than 100 unknown plants and 10 reference plants samples were analyzed using various bioinformatics and phylogenetic tools.

Scanning of entire chloroplast genome revealed 3 polymorphic regions. Multiple alignments of Frantoio and 5 NARC cultivars exhibited cultivar specific SNPs and deletions insertion that paved the way to extend this work to identify plants from 100 samples with more reference controls sampled from Ternab. Besnard and colleagues designed three markers in this region for identification of species or plants [30]. The plastid DNA regions screened by them showed a higher level of polymorphisms within the genus Olea than the rps16 and trnL-trnF sequences used in previous study [31]. The trnS-trnG intergenic spacer was the most variable region and was highly recommended for phylogenetic reconstructions of Oleaceae.

In this study, the marker region sequences of 100 unknown olive plants were analyzed. In order to investigate the evolutionary relationship, a phylogenetic tree was constructed taking 10 known reference plants. The tree clearly separated the samples into 10 clusters. These clusters include Arbosana, Carolea, Chetoui, Coratina, Domat, Frantoio, Gemlik, Koroneiki, Leccino and Moraiolo. This relationship shows that these plants have sequences similar to the known plants and might be the same variety. Multiple alignments were generated for the entire samples. The alignments revealed conservations groups in these plants on the basis of sequence similarities. This dataset was fragmented into smaller groups. Three clusters including Arbosana, Frantoio and Koroneiki were put under phylogenetic reconstruction again. There was a clear separation of these clusters along with unknown plants. This clustering was further validated using a neighbor net network in Splits Tree4 package. In order to find variety specific SNPs, a multiple alignment for these three clusters was generated. There was an obvious differentiation into three groups. "A" was specific to Koroneiki, "C" seemed to be preferable SNP for Frantoio. This is supported by pairwise alignments generated to calculate the percent identity between the samples of three clusters in circular phylogenetic reconstruction. The similarity is 99.26% - 99.81% between Tn_Arbosana and samples. It is 99.44% - 99.81% in Tn_Frantoio and its clustered plants. Similarly, Koroneiki and its samples are 98.17% - 99.16% identical. It means these are closely related and represent one cultivar. But surprisingly, the identity was less than 98% and even reduced to 96% between the different known cultivars. Hence we can infer that 98% identity shows a different cultivar and above it is the same cultivar or plant.

Taken together the data from all the approaches allow us to demonstrate that out of 100 plants 49 could be identified separated into 10 varieties. It is very important to mention that 51 plant samples could not be identified. They were not clustered into any of the known sequence clade. This means that there exist other varieties in these orchards for which we do not have any reference genome sequence. There are two solutions to this problem. First there is need to sequence more known varieties growing in Pakistan or to acquire the DNA of these varieties from other olive growing countries to be used as reference known genome. Secondly we need to sequence another nearby marker to expand gene region. Both the sequences will be joined. This is referred as concatenation of the sequences. It has more resolving power than a single sequence. Hence both sequences will be concatenated for alignment and phylogenetic reconstruction. This will generate more sequence diversity to get plants identified. An alternative strategy is to use nuclear markers (Cos markers) for which already many olive varieties have been sequenced. The implication of the above study is to identify all the fruit bearing unknown olive plants. The advent of high throughput genotyping through base calling SNPs has revolutionized the DNA fingerprinting. It is now possible to sequence the entire genome of the organisms and this technology is becoming cheaper ever passing day. This can be very practical for plants especially olive to sequence the entire plastome of all the samples.

5. Conclusion

In nutshell, our data reveal that the chloroplast genome of olive has polymorphic sites having variety specific SNPs and indels and they have resolving power to discriminate the olive plants at variety level. The Cp5 primer used successfully identified 49 varieties out of 100 unknown olive plants through mutations detection by alignment of the marker region sequences followed by the phylogenetic reconstruction with different bioinformatics software. This strategy can be further extended to characterize the olive tree germplasm reliably and efficiently with low costs which is distributed throughout the country in search of the better varieties. After the better varieties have been identified, this will enhance the olive oil and fruit production in Pakistan by the on-farm preservation and provision of the authentic germplasm to olive growers for the establishment to new olive orchards.

Acknowledgements

We are grateful to Dr. Muhammad Munir (National Project Director Olive), Dr. Nasir Cheema, PSO, Olive project at PARC for providing useful information aboit olive orchards and help there in sampling. We are thankful to Mr. Said Ahmed (Director, Olive Project KPK), Mr. Riaz Alam (Ternab), Dr. Muhammad Tariq (Director BARI), Mr. Muhammad Khalil (RA, BARI), Mr. Mukhtar (PSO, HRI, NARC), for providing the olive plants research material. Sincere appreciation and gratitude to Dr. Amir Ali Abbasi (NCB, QAU) for help in bioinformatics analysis. Italian funded project "Promotion of Olive Cultivation for Economic Development and Poverty" Pakistan Agricultural Research Council (PARC), Islamabad Pakistan is acknowledged for providing funding to Dr. MR Khan.

References

- Angiolillo, A., Mencuccini, M. and Baldoni, L. (1999) Olive Genetic Diversity Assessed Using Amplified Fragment Length Polymorphisms. *Theoretical and Applied Genetics*, 98, 411-421. <u>http://dx.doi.org/10.1007/s001220051087</u>
- [2] Doveri, S. and Baldoni, L. (2007) Olive. Fruits and Nuts, Springer, 253-264. <u>http://dx.doi.org/10.1007/978-3-540-34533-6_13</u>
- [3] Golding, B., Reale, S., Doveri, S., Díaz, A., Angiolillo, A., Lucentini, L., Pilla, F., Martín, A., Donini, P. and Lee, D. (2006) SNP-Based Markers for Discriminating Olive (*Olea europaea L.*) Cultivars. *Genome*, 49, 1193-1205.
- [4] Green, P. (2002) A Revision of Olea L.(Oleaceae). Kew Bulletin, 91-140. http://dx.doi.org/10.2307/4110824
- [5] Carriero, F., Fontanazza, G., Cellini, F. and Giorio, G. (2002) Identification of Simple Sequence Repeats (SSRs) in Olive (*Olea europaea* L.). *Theoretical and Applied Genetics*, **104**, 301-307. <u>http://dx.doi.org/10.1007/s001220100691</u>
- [6] Lavee, S. (1985) Olea europaea. Handbook of Flowering, Vol. 6, CRC Press, Boca Raton, 423-434.
- [7] Rugini, E. and Lavee, S. (1992) Olive. *Biotechnology of Perennial Fruit Crops*, CAB International, Wallingford, 371-382.
- [8] Colmogro, S., Collins, G. and Sedgley, M. (2010) Processing Technology of the Table Olive. *Horticultural Reviews*, 25, 235.
- [9] Connels, J.H. (2005) History and Scope of the Olive Industry. *Olive Production Manual*, Vol. 3353, UCANR Publications, Oakland, 1-10.
- [10] Sanz-Cortés, F., Martinez-Calvo, J., Badenes, M., Bleiholder, H., Hack, H., Llacer, G. and Meier, U. (2002) Phenological Growth Stages of Olive Trees (*Olea europaea*). *Annals of Applied Biology*, **140**, 151-157. <u>http://dx.doi.org/10.1111/j.1744-7348.2002.tb00167.x</u>
- [11] Besnard, G., Breton, C., Baradat, P., Khadari, B. and Bervillé, A. (2001) Cultivar Identification in Olive Based on RAPD Markers. *Journal of the American Society for Horticultural Science*, **126**, 668-675.
- [12] Lanza, B., Marsilio, V. and Martinelli, N. (1996) Olive Pollen Ultrastructure: Characterization of Exine Pattern through Image Analysis-Scanning Electron Microscopy (IA-SEM). *Scientia Horticulturae*, 65, 283-294. http://dx.doi.org/10.1016/0304-4238(95)00868-3
- [13] Barranco, D., Cimato, A., Fiorino, P., Rallo, L., Touzani, A., Castaneda, C., Serafin, F. and Truijillo, I. (2000) World Catalogue of Olive Varieties. International Olive Oil Council, Madrid.
- [14] Jeffreys, A.J., Wilson, V. and Thein, S.L. (1985) Individual-Specific "Fingerprints" of Human DNA. *Nature*, **316**, 76-79. http://dx.doi.org/10.1038/316076a0
- [15] Giannoulia, K., Gazis, F., Nikoloudakis, N., Milioni, D. and Haralampidis, K. (2002) Breeding, Molecular Markers and Molecular Biology of the Olive Tree. *European Journal of Lipid Science and Technology*, **104**, 574-586. <u>http://dx.doi.org/10.1002/1438-9312(200210)104:9/10<574::AID-EJLT574>3.0.CO;2-1</u>

- [16] Belaj, A., Caballero, J.M., Barranco, D., Rallo. L. and Trujillo, I. (2003) Genetic Characterization and Identification of New Accessions from Syria in an Olive Germplasm Bank by Means of RAPD Markers. *Euphytica*, 134, 261-268. <u>http://dx.doi.org/10.1023/B:EUPH.0000004954.93250.f5</u>
- Besnard, G., Khadari, B., Villemur, P. and Bervillé, A. (2000) Cytoplasmic Male Sterility in the Olive (*Olea europaea* L.). *Theoretical and Applied Genetics*, **100**, 1018-1024. <u>http://dx.doi.org/10.1007/s001220051383</u>
- [18] Besnard, G., Khadari, B., Baradat, P. and Bervillé, A. (2002) Combination of Chloroplast and Mitochondrial DNA Polymorphisms to Study Cytoplasm Genetic Differentiation in the Olive Complex (*Olea europaea* L.). *Theoretical and Applied Genetics*, **105**, 139-144. <u>http://dx.doi.org/10.1007/s00122-002-0868-6</u>
- [19] Dumolin-Lapegue, S., Pemonge, M. and Petit, R. (1997) An Enlarged Set of Consensus Primers for the Study of Organelle DNA in Plants. *Molecular Ecology*, 6, 393-397. <u>http://dx.doi.org/10.1046/j.1365-294X.1997.00193.x</u>
- [20] Besnard, G., Casas, D., Rubio, R. and Vargas, P. (2003) A Set of Primers for Length and Nucleotide-Substitution Polymorphism in Chloroplastic DNA of *Olea europaea* L. (Oleaceae). *Molecular Ecology Notes*, 3, 651-653. http://dx.doi.org/10.1046/j.1471-8286.2003.00547.x
- [21] Mariotti, R., Cultrera, N.G., Díez, C.M., Baldoni, L. and Rubini, A. (2010) Identification of New Polymorphic Regions and Differentiation of Cultivated Olives (*Olea europaea* L.) through Plastome Sequence Comparison. *BMC Plant Biology*, 10, 211. <u>http://dx.doi.org/10.1186/1471-2229-10-211</u>
- [22] Olson, S.A. (1994) MacVector: An Integrated Sequence Analysis Program for the Macintosh. Computer Analysis of Sequence Data, Springer, 195-201. <u>http://dx.doi.org/10.1385/0-89603-276-0:195</u>
- [23] Doyle, J.J. (1987) A Rapid DNA Isolation Procedure for Small Quantities of Fresh Leaf Tissue. *Phytochemical Bulletin*, **19**, 11-15.
- [24] Hall, T.A. (1999) BioEdit: A User-Friendly Biological Sequence Alignment Editor and Analysis Program for Windows 95/98/NT. Nucleic Acids Symposium Series, 41, 95-98.
- [25] Tamura, K, Stecher, G., Peterson, D., Filipski, A. and Kumar, S. (2013) MEGA6: Molecular Evolutionary Genetics Analysis Version 6.0. *Molecular Biology and Evolution*, **30**, 2725-2729. <u>http://dx.doi.org/10.1093/molbev/mst197</u>
- [26] Huson, D.H. and Bryant, D. (2006) Application of Phylogenetic Networks in Evolutionary Studies. *Molecular Biology Evolution*, 23, 254-267. <u>http://dx.doi.org/10.1093/molbev/msj030</u>
- [27] Tanksley, S.D. and Orton, T.J. (1983) Isozymes in Plant Breeding and Genetics. Elsevier.
- [28] Busconi, M., Foroni, C., Corradi, M., Bongiorni, C., Cattapan, F. and Fogher, C. (2003) DNA Extraction from Olive Oil and Its Use in the Identification of the Production Cultivar. *Food Chemistry*, 83, 127-134. http://dx.doi.org/10.1016/S0308-8146(03)00218-8
- [29] Shaw, J., Lickey, E.B., Schilling, E.E. and Small, R.L. (2007) Comparison of Whole Chloroplast Genome Sequences to Choose Noncoding Regions for Phylogenetic Studies in Angiosperms: The Tortoise and the Hare III. American Journal of Botany, 94, 275-288. http://dx.doi.org/10.3732/ajb.94.3.275
- [30] Besnard, G., de Casas, R.R., Christin, P.A. and Vargas, P. (2009) Phylogenetics of Olea (Oleaceae) Based on Plastid and Nuclear Ribosomal DNA Sequences: Tertiary Climatic Shifts and Lineage Differentiation Times. *Annals of Botany*, 105. <u>http://dx.doi.org/10.1093/aob/mcp105</u>
- [31] Wallander, E. and Albert, V.A. (2000) Phylogeny and Classification of Oleaceae Based on rps16 and trnL-F Sequence Data. American Journal of Botany, 87, 1827-1841. <u>http://dx.doi.org/10.2307/2656836</u>

Abbreviations

Cp, Chloroplast CTAB, Cetyl Trimethyl Ammonium Bromide MEGA, Molecular Evolution Genetics Analysis NARC, National Agricultural Research Centre NCBI, National Center for Biotechnology Information RAPD, Random Amplified Polymorphic DNA SNP, Single Nucleotide Polymorphism SSR, Simple Sequence Repeat UPGMA, Unweighted Pair Grouped Method with Arithmetic Mean



Figure S1. Polymorphic sites of olive chloroplast genome cv. Frantoio. (Adopted from Mariotti *et al.* (2010)). The three marker regions namely CP3, CP4 and CP5 are shown. The different colours indicate the four mono-nucleotide microsatellites (poly-T and poly-G are reported in the external circle, poly-A and poly-C in the internal circle), bar lengths correspond to the number of repetitions. Arrows indicate polymorphisms (base mutations, microsatellites and indels). The circle reports the interspersed repeats to the same number corresponds the same repetition. External or internal number position corresponds to the sense or anti-sense sequence direction.

 Table S1. Scanning of plastid genome of Frantoio and selection of three polymorphic region for which 3 pairs of primers if were designed.

S. No	Marker Name	Sequence (5' to 3')	Product Size (bp)	Position in CP Genome (bp)	
1	CP3-F	CCTTCTCGGAAAAGTATTTTCACA	7.10	83112-83852	
1	CP3-R	CATCCTTTGCATTGGAAGAATAGA	740		
2	CP4-F	CP4-F GCTGAATAGACAGATTCATTGAAA		101265 102500	
Z	CP4-R	CCAGACTCTCTTCACTAAGTGTTA	1554	101265-102599	
2	CP5-F	CTGACAATTCATTTCTATTTCTAGA	720		
3	CP5-R CATTATTTATCTATAATTCGTTGGA		720	8986-9705	

Amplified length is also given, bold encloses he CP5 primer that was selected for further analysis.

Tn_1	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn 2	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn 3	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_4	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_5	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_6	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_7	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_8	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_9	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_10	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_11	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	АААААТСАТС	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_12	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_13	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_14	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_15	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_16	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_17	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_18	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_19	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACCCTGAAAC	TCTTCGTTTA
Tn_20	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAA-TCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_21	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_22	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	CCTTCGTTTA
Tn_23	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_24	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_25	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_26	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_27	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_28	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_29	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_30	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_31	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_32	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_33	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACCCTGAAAC	CCTTCGTTTA
Tn_34	AAGATCTATT	CTCTTTTTTT	TTTT-AAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTCCGTTTA
Tn_35	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAAGGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_36	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAAGGCTT	ACCCTGAAAC	CCTTCGTTTA
Tn_37	AAGATCTATT	CTCTTTTTTT	TTTT-AAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_38	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	GGTAAGGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_39	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACCCTGAAAC	TCTTCGTTTA
In_40	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
1n_41 T- 42	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
1n_42 T42	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	GGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
1n_43 Tn_44	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
10_44 Tn 45	AAGAICIAII	CICITIIII	TTTTCAAAAA	AAAAAICAIC	TIGGAGATIG	TGTAAIGCII	ACICIGAAAC	TCTTCGTTTA
10_45 Tp 46	AAGAICIAII	CICILIIII	TTTTCAAAAA	AAAAAICAIC	TIGGAGATIG	TGTAAIGCII	ACICIGAAAC	TCTTCGTTTA
Tn_40	AAGAICIAII		TITICAAAAA	AAAAAICAIC	TIGGAGATIG	TGTAAIGCII	ACICIGAAAC	TCTTCGTTTA
Tn 48	AAGAICIAII	CICILIIII	TTTTCAAAAA	AAAAAICAIC	TIGGAAAIIG	TGTAAGGCII	ACICIGAAAC	TCTTCGTTTA
$T_{n} 40$	AAGAICIAII	CTCTTTTTTT	TTTTCAAAAA	AAAAAICAIC	TTCCACATTC	TGTAAGGCII	ACTCTGAAAC	TCTTCGTTTA
$T_n = 50$	AAGAICIAII	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTC	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn 51	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn 52	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tp 53	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn 54	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA

T., 55								
11_33 T= 56	AAGATCTATT	CICITITIT	ТТТТСААААА	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
1n_50 T 57	AAGATCTATT	CICITITIT	ТТТТСААААА	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
In_5/	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
1n_58	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAAGGCTT	ACTCTGAAAC	TCTTCGTTTA
In_59	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
In_60	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_61	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_62	AAGA-CTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_63	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_64	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_65	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_66	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_67	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_68	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_69	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_70	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_71	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_72	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_73	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_74	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_75	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_76	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_ 77	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_78	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_79	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_80	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_81	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_82	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_83	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_84	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_85	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_86	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATGG	GGTAAGGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_87	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_88	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_89	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_90	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TGGGAGATTG	GGTAATGCTT	ACCCTGAAAC	CCTCCGTTTA
Tn_91	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_92	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	GGTAAGGCTT	ACTCTAAAAC	TCTTCTTTTA
Tn_93	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_94	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	CCTCCGTTTA
Tn_95	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_96	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	GGTAAGGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_97	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_98	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_99	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_100	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC_Carolea	AGATCTATTT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAAATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC_Domat	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC Gemik	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC_Leccino	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
NARC_Moraiolo	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TTGGAGATTG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
In Arbosana	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	IGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
Tn_Cnetoui	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
In_Coratina	AAGATCTATT	CTCTTTTTTT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTCTGAAAC	TCTTCGTTTA
In Koroneiki	AAGATCTATT	CICITITIT	TTTTCAAAAA	AAAAATCATC	TIGGAGATIG	TGTAATGCTT	ACTOTGAAAC	TCTTCGTTTA
	AAGAICIAII	CICITIIII	TTTTCAAAAA	MAAAAICAIC	1100AGA110	TGIAAIGUII	ACICIGAAAC	TCITCGITTA

T., 1							10000110000	
III_I T 2	TACCGIAGIG	AIAIIIIIIG		CAICIIIGGA		AIGAICCAGG	ACGIAAICCI	GGACGIGAAG
In_2	TACCGTAGTG	ATATTTTTTG	TITCICICIT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
1n_3	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_4	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_5	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG	ACGAAACCCG	GGACGTGAAG
Tn_6	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_7	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_8	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_9	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_10	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 11	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 12	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 13	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 14	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn 15	TCCCGTAGTG	ATATTTTTT	TTTCTCTCTT	CATCTTTGGA	ттестатета	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 16	TCCCGTAGTG	ATATTTTTT	TTTCTCTCTT	CATCTITICA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn 17	TACCCTACTC	ATATTTTTC	TTTCTCTCTT	CATCTITICOA	TTCCTATCTA	ATCATCCACC	ACCENATOOT	CCACCTCAAC
Tn_10	TACCGIAGIG	ATATITITIG		CATCITIGGA	TICCIAICIA	AIGAICCAGG	ACGIAAICCI	GGACGIGAAG
Tn_10	ICCCGIAGIG	ATATITITIG		CATCITIGGA		AIGAICCAGG	ACGIAAICCI	GGACGIGAAG
In_19 T0	TCCCGTAGTG	ATTTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCGGG	ACGTAATCCG	GGACGTGAAG
In_20	TACCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_21	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_22	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn_23	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCT	GGACGTGAAG
Tn_24	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_25	TACCGAAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	AGGATCCAGG	ACGTAATCCG	GGACGTGAAA
Tn_26	TCCCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG	ACGAAACCCG	GGACGTGAAG
Tn_27	TCCCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCT	GGACGTGAAG
Tn_28	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_29	TACCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_30	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_31	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCT	GGACGTGAAG
Tn_32	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_33	TCCCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG	ACGAAACCCG	GGACGTGAAG
Tn 34	TCCCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn 35	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn 36	AACCGAAGGG	AAATTTTTTG	TTTCCCCCTC	CACCTTTGGA	TCCCAATCTA	ATGACCCAGG	ACGTAACCCG	GGACGGGAAG
Tn_37	TCCCGAAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	ттестатета	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 38	TCCCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCG	GGACGTGAAA
Tn 39	TCCCGTAGGG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	ттестатета	ATGATCCAGG	ACGTAACCCT	GGACGTGAAG
Tn 40	TCCCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn 41	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	ттестатета	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 42	TACCGAAGGG	ATATTTTTT	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_42	TCCCGTAGTG	ATATTTTTT	TTTCTCTCTT	CATCTITICA	TTCCTATCTA	ATGATCCAGG	ACGINATOCT	GCACCICAAA
Tn 44	TCCCGTAGIG	ATATTTTTT	TTTCTCTCTT	CATCTITICA	TTCCTATCTA	ATGATCCAGG	ACGINATCCI	GGACGIGAAA
Tn_45	TACCCTACTC	ATATTTTTC	TTTCTCTCTT	CATCTITICOA	TTCCTATCTA	ATCATCCACC	ACCENATOOT	CCACCTCAAC
Tn 46	TACCGIAGIG	ATATTTTTT	TTTCCCTCTT	CATCITIGGA	TTCCTATCTA	ATGATCCAGG	ACGIAAICCI	GGACGIGAAG
Tn_40	TCCCGIAGIG	ATATITITIG		CAICIIIGGA	TICCIAICIA	AIGAICCAGG	ACGAAACCCCG	GGACGIGAAG
111_4/ Tn 49	TACCGTAGTG	ATATTTTTG	TITCICICIT	CATCITTGGA	TTCCTATCTA	AIGAICCAGG	ACGIAATCCT	GGACGTGAAA
Tn 40	TCCCGTAGTG	ATATITTTG	THUTCHUT	CATCITTEGA	TTCCTATCTA	AGGACCCAGG	ACGIAACCCG	GGACGTGAAA
111_49 Tn 50	TCCCGTAGTG	ATATITTTTG	TITCICICIT	CATCITTGGA	TICCIATCIA	AIGAICCAGG	ACGIAATCCT	GGACGTGAAG
11_50 T_ 51	ICCCGTAGTG	ATATTTTTTG	TITCICICIT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
11_51 T= 52	TACCGTAGTG	ATATTTTTG	TITCTCTCTT	CATCTTTGGA	TTCCAATCTA	ATGATCCAGG	ACGAAACCCG	GGACGTGAAG
1n_52 T_52	TCCCGTAGTG	ATATTTTTTG	TITCTCTCTT	CATCTTTGGA	TICCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
1n_53	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAÀG
Tn_54	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG

Tn_55	TACCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_56	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAACCCT	GGACGTGAAG
Tn_57	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_58	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_59	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_60	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_61	TACCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_62	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_63	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_64	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_65	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCG	GGACGTGAAG
Tn_66	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_6 7	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_68	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 69	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 70	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 71	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 72	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 73	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 74	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 75	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 76	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	ттестатета	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 77	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn 78	TACCETAGTE	ATATTTTTC	TTTCTCTCTT	CATCTITICA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GENCETENNE
Tn 79	TCCCGTAGIG	ATATTTTTC	TTTCTCTCTT	CATCITIGGA	TTCCTATCTA	ATGATCCAGG	ACGINATOCT	GGACGIGAAG
Tn 80	TACCETACTE	ATATTTTTC	TTTCTCTCTT	CATCITICOA	TTCCTATCTA	ATGATCCAGG	ACGINATOCT	CCACCICARG
Tn 81	TACCOTAGIG	ATATTTTTC	TTTCTCTCTT	CATCITIGGA	TTCCTATCTA	ATGATCCAGG	ACGIAAICCI	CCACCICAAG
Tn 82	TACCGIAGIG	ATATTTTTC	TTTCTCTCTT	CATCITIGGA	TTCCTATCTA	ATGATCCAGG	ACGIAAICCI	GGACGIGAAG
Tn_02	TACCGIAGIG	AIAIIIIIG		CAICIIIGGA	TICCIAICIA	AIGAICCAGG	ACGIAAICCI	GGACGIGAAG
11_03 T= 94	TACCGTAGTG	ATATTTTTG	THEFT	CATCITIGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
1n_84 T_85	TACCGTAGGG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
In_85	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
In_80 T_07	TACCGTAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
In_8/	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_88	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn_89	TCCCGTAGTG	ATATTTTTTG	TTTCCCCCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn_90	ACCCGAAGGG	ATATTTTTTG	TTTCCCCCTT	CATCTTTGGA	TTCCTATCTA	AGGACCCAGG	ACGAAACCCG	GGACGTGAAA
Tn_91	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_92	TCCCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAACCCG	GGACGTGAAA
Tn_93	TACCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
Tn_94	TCCCGAAGTG	ATATTTTTTG	TTTCCCCCTT	CATCTTTGGA	TTCCTATCTA	AGGACCCAGG	ACGAAACCCG	GGACGGGAAG
Tn_95	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_96	TCCCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	AGGACCCAGG	ACGTAACCCG	GGACGTGAAA
Tn_97	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_98	TCCCGTAGGG	ATATTTTTTG	TTTCCCCCTT	CATCTTTGGA	TTCCTATCTA	AGGACCCAGG	ACGAAACCCG	GGACGTGAAG
Tn_99	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGAAATCCG	GGACGTGAAG
Tn_100	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
NARC_Carolea	TACCGAAGGG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Domat	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Gemlik	TACCGTAGGG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAA
NARC_Leccino	TACCGTAGTG	ATATTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
NARC_Moraiolo	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
<u>Tn Arbosana</u>	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_Chetoui	TCCCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
Tn_Coratina	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG
<u>Tn_Koroneiki</u>	TCCCGAAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGACCCAGG	ACGAAACCCG	GGACGTGAAG
Tn_Frantoio	TACCGTAGTG	ATATTTTTTG	TTTCTCTCTT	CATCTTTGGA	TTCCTATCTA	ATGATCCAGG	ACGTAATCCT	GGACGTGAAG

Tn 1	ратаратсс	AAAGGGTTTT	TCCTTGGTTA	аттттсааат	TTTCTTAGGA	ттттатстат	TCCACACGTT	таастаааат
T_n 2	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
Tn 3	AATAAAATCC .	AAAGGGIIII	TCCTTCCTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGII	TAACTAACAT
Tn_3	AATAAAATCC .	AAAGGGIIII	TCCTTCCTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGII	TAACTAAGAT
Tn 5	AATAAAAICC .	AAAGGGIIII	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	CCCACACGII	TAACTAAGAT
Tn_5	AATAAAATCC .	AAAGGGIIII	TCCTTCCTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGII	TAACTAAGAT
Tn 7	AATAAAATCC .	AAAGGGIIII	TCCIIGGIIA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGII	TAACTAAGAT
Tn 9	AATAAAATCC .	AAAGGGIIII	TCCIIGGIIA	ATTTTCAAAT	TITCITAGGA	TITIAICIAI	CCACACGII	TAACTAAGAT
11_0 Tn 0	AATAAAATCC .	AAAGGGIIII	TCCTTGGTTA	ATTTTCAAAT	TITCIIAGGA	TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	TCCACACGII	TAACTAAAAT
$T_{n} = 10$	AAAAAAAICC .	AAAGGGIIII	TCCIIGGIIA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGII	TAACTAAAAT
In_10 Tn_11	AATAAAATCC .	AAAGGGIIII	TCCIIGGIIA	ATTTTCAAAT	TITCITAGGA	TITIAICIAI	TCCACACGII	TAACTAAAAT
10_11 T= 12	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TITTATCTAT	TCCACACGTT	TAACTAAAAT
11_12 T= 12	AATAAAATCC	AAAGGGIIII	TCCTTGGTTA	ATTTTCAAAT	TITCITAGGA		TCCACACGIT	TAACTAAAAT
In_15 T_14	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTTATCTAT	TCCACACGTT	TAACTAAAAT
1n_14 T_15	AAAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
In_15	AAAAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAAAT
In_16	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_17	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_18	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_19	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACCCGTT	TAACTAAGAT
Tn_20	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_21	AAAAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_22	AATAAAATCC .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_23	ааааааатсс	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_24	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_25	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_26	ааааааатсс	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	CCCACACGTT	ТААСТААААТ
Tn_27	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_28	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТАААТ
Tn_29	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_30	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_31	ААТААААТСС :	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_32	ААТААААТСС :	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn_33	ааааааатсс :	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	CCCACACGTT	таастаааат
Tn_34	AATAAAATCC :	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_35	ааааааатсс	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_36	ааааааассс :	AAAGGGTTTT	CCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTTT	CCCCCCCGTT	таасааааат
Tn_37	ааааааатсс :	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_38	ааааааатсс .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_39	ааааааатсс	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACCCGTT	таастаааат
Tn_40	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_41	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 42	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 43	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 44	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 45	ААТААААТСС .	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 46	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn 47	ААТААААТСС	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	таастаааат
Tn_48	AAAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACCCGTT	ТААСТААААТ
Tn 49	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn 50	AATAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn 51	AAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	CCCACCCGTT	ТААСТААААТ
Tn 52	AAAAAATCC	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
Tn 53	ААААААТСС	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	ТААСТААААТ
Tn_54	ААААААТСС	AAAGGGTTTT	TCCTTGGTTA	ATTTTCAAAT	TTTCTTAGGA	TTTTATCTAT	TCCACACGTT	TAACTAAGAT
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Tn_55	TTCAAAAATT	TGAAAAATAA	ТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_56	TTCAAAAATT	TGAAAAAAA	адааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_57	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_58	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_59	ТТСАААААТТ	TGAAAAAAAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_60	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn_61	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_62	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_63	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_64	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_65	ттсааааатт	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn_66	ттсааааатт	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_67	ттсааааатт	TGAAAAATAA	ТАААТАААТА	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 68	ттсааааатт	TGAAAAATAA	тааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 69	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 70	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn ⁷¹	TTCAAAAATT	TGAAAAAAAA	атааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 72	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 73	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 74	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 75	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 76	ттсаааатт	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 77	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 78	TTCAAAAATT	TGAAAAAAA	ΑΤΑΔΑΤΑΔΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 79	TTCAAAAATT	ТСААААТАА	ΔΤΔΔΔΤΔΔΔΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 80	TTCAAAAATT	ТСААААТАА	ΔΤΔΔΔΤΔΔΔΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 81	TTCAAAAATT	TGAAAATAA	ATAAATAAAT	CAAGTCATCA	ACCOMACCOO	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 82	TTCANANATT	TCAAAAAAAAA	ATAAATAAAT	CARGICATCA	ACCOMACCOG	AAAGAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 83	TTCANANATT	TCAAAAATAA	ATAAATAAAT	CARGICATCA	ACCOMACCOO	AAAGAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 84	TTCAAAAAII	TCANANATAA	ATAAATAAAT	CAAGCCAICA	ACCOAACCOG	AAAGAGAGGGG	ATTCCAACCC	TCCCTACCAA
Tn 85	TTCAAAAAII	TCARARATAA	ATAAATAAAT	CAAGICAICA	ACCOAACCOG	AAAGAGAGGGG	ATTCGAACCC	TCCGTACGAA
Tn 96	TTCAAAAATT	TGAAAAATAA		CAAGICAICA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 87	TTCAAAAAII	TCARACATAA	ATAAATAAAT	CAAGICAICA	ACCEALCCCG	AAAGAGAGGGG	ATTCAAACCC	TCCCTACAAA
Tn 99	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGICAICA	ACGGAACCGG	AAAGAGAGGGG	ATTCCAAACCC	TCCGTACAAA
Tn 80	TTCAAAAATT	TGAAAAAIAA	ATAAATAAAT	CAAGCC-ICA	ACCOACCCCG	AAAGAGAGGG-	ATTCGAACCC	TCCGTACGAA
Tn_00	TICAAAAAII	TGAAAAAAAA	AAAAATAAAC	CAAGCCATCA	ACGGACCCGG	AAAGAGAGAGGG	ATTCGAACCC	TCGGTACGAA
$T_{n} = 01$	TTCAAAAAII	TGAAAAAAAA	ATAAATAAAT	CAAGCCACCA	ACCENACCEG	AAAGAGAGAGGG	ATTCCAACCC	TCGGIACAAA
Tn 02	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCAACCC	CCCCTCCAA
Tn 02	TTCAAAAATT	TGAAAAAAAA	ATAAAAAAAT	CAAGCCATCA	CCGGACCCGG	AAAAAGAGGG	ATTCAACCCC	CCGGICCAAA
Tn 04	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGICAICA	ACGGAACCGG	AAAGAGAGGGG	ATTCCAAACCC	TCCGTCCGAA
Tn 05	TTCAAAAAII	TCANANTAN	ATAAATAAAC	CAAGCCCICA	ACCCARCCCC	AAAGAGAGGGG	ATTCCAACCC	TCCCTACCAA
Tn 96	TTCAAAAATT	TGAAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACCORACCOG	AAAGAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn 97	TTCAAAAATT	TGAAAAAAAAA	ATAAATAAAT	CAAGICATCA	ACCORACCOG	AAAAAAAAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 08	TTCANANATI	TCANANTAN	ATAAATAAAT	CARGICATCA	ACCORACCCC	AAAGAGAGAGGG	ATTCCAACCC	TCCCTACCAA
Tn 99	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCC-ICA	ACGGACCCGG	AAAGAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 100	TTCAAAAATT	TGAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACCOACCCCC	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
NARC Carolea	TTCAAAAATT	TGAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACCORCCCCC	AAAGAGAGAGGG	ATTCAAACCC	TCGGTACGAA
NARC Domat	TTCAAAAATT	TGAAAAAATAA	ATAAATAAAT	CAAGICATCA	ACGGAACCGG	AAAAAAAAGGGG	ATTCAAACCC	TCGGTACGAA
NARC Gemlik	TTCAAAAATT	TGALAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCCG	PITCHONOMOGO	ATTCAAACCC	TCGGTACAAA
NARC Leccine	TTCAAAAATT	TGANANATAA	ATAAATAAAT	CAAGTCATCA	ACCCAACCOG	777CYCYCYCCC	ATTCGAACCC	TCGGTACGAA
NARC Moraiolo	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGICATCA	ACGGAACCOG	VYCYCYCCC	ATTCARACCC	TCGGTACOAA
Tn Arheana	TTCAAAAATI	TGAAAAATAA	ATAAATAAAT	CANGICATCA	ACGGAACCCC	7776767666	ATTCGAACCC	TCGGTACGAA
Tn Chetoui	TTCANANT	TGAAAAAAA	ATAAATAAAT	CAAGECATCA	ACCOMACCOG	AAAGAGAGGGG	ATTCGAACCC	TCGCTACGAA
Tn Coratina	TTCAAAAAII	ТСЛЛЛЛЛТА	ATAAAATAAAT	CANGCCATCA	ACCOMACCOG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn Koronoiki	TTCAAAAAII	TCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACCOMACCOG	AAAGAGAGGGG	ATTCGAACCC	TCCCTACCAA
Tn Franteic	TTCAAAAAIT	TGAAAAAAAAA	ATAAAAAAAAT	CAAGUCATCA	ACGCAACCGG	AAAGAGAGGGG	ATTCCAACCC	TCGCTACCAA
	TICAAAAAIT	TOAAAAATAA	ATAAATAAAT	CAHGICATCA	ACGGAACCGG	AAAGAGAGGG	ATTOGAACOC	TCGGIACGAA

Tn_1	ТТСАААААТТ '	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_2	ттсааааатт	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_3	TTCAAAAATT	TGAAAAATAA	тааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_4	TTCAAAAATT	tgaaaaaaaaa	атааатааат	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_5	TTCAAAAATT	TGAAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_6	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAG <mark>T</mark> CATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_7	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_8	TTCAAAAATT	tgaaaaaaaaa	тааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_9	TTCAAAAATT	TGAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_10	TTCAAAAATT	TGAAAAATAA	ТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_11	TTCAAAAATT	TGAAAAATAA	ΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_12	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_13	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_14	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_15 T= 16	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_10 T= 17	TTCAAAAATT	TGAAAAAAAA	AAAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
In_1/ T= 19	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCAAACCC	TCGGTACGAA
In_18 T= 10	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
$1n_{19}$ Tn 20	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 21	TTCAAAAAII	TCARAAAAIAA	ATAAATAAAT	CAAGICAICA	ACCONACCCC	AAAGAGAGGGG	ATTCGAACCC	TCCCTACCAA
$T_{n} 21$	TTCAAAAAII	TCARAAAIAA	ATAAATAAAT	CAAGICAICA	ACCEAACCOG	AAAGAGAGGGG	ATTCGAACCC	TCCCTACCAA
Tn 23	TTCAAAAAII	TCAAAAAAAAA	ATAAATAAAT	CAAGUCAICA	ACCEACCEC	AAAGAGAGGGG	ATTCGAACCC	TCCCTACCAA
Tn_24	TTCAAAAAII	TCAAAAAAAAA	AAAAAAAAAA	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn_25	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CANGUCATCA	ACGGAACCGG	AAAGAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_26	TTCAAAAATT	TGAAAAAAAAAA	ALAAAAAAAA	CAAGICATCA	ACGGACCCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn_27	TTCAAAAATT	TGAAAAAAAA	TATATATA	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 28	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn 29	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 30	TTCAAAAATT	TGAAAAATAA	ТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn 31	TTCAAAAATT	TGAAAAAAAA	тааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_32	TTCAAAAATT	TGAAAAAAAA	атааатааат	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_33	TTCAAAAATT	tgaaaaaaaaa	адааатааат	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_34	TTCAAAAATT	TGAAAAAAAA	атааатааат	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_35	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_36	TTCAAAAATT	tgaaaaaaaaa	аааааааааа	AAAGCCCCCC	ccccccccc	AAGAAGAGGG	AGTCGACCCC	CCCCCCCAAA
Tn_37	TTCAAAAATT	TGAAAAAAAA	тааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_38	TTCAAAAATT	TGAAAAATAA	тааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_39	TTCAAAAATT	tgaaaaaaaaa	а <mark>а</mark> ааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_40	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_41	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn_42	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_43	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_44	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
1n_45	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_40 T= 47	TTCAAAAATT	TGAAAAAAAA	ΑΑΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
1n_4/ T= 49	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_40	TTCAAAAATT	TGAAAAATAA		CAAGICAICA	ACGGAACCGG	AAAGAGAGGGG	ATTCAAACCC	TCGGTACAAA
Tn 50	TTCAAAAAIT	TCAAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACCEACCEC	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 51	TTCAAAAAII	TCAAAAAAAAA	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	CAAGCCATCA	ACCOACCCCC	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 52	TTCAAAAAII	TGAAAAAAAAA	AAAAAIAAAI	CAAGUCATCA	ACGGAACCCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 53	TTCAAAAATT	TGAAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCCG	7776767666	ATTCGAACCC	TCGGTACGAA
Tn 54	TTCADADATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCCG	PPERSONCE CO	ATTCGAACCC	TCGGTACGAA
	TIONAAATI	IONNAMIAA	ATAAATAAAT	CAROCCATCA	NSOOMACCOB	THAN ADADAD	ALICOMACCO	TOOTACOAR

Tn_55	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_56	TTCAAAAATT	TGAAAAAAA	адааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_57	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_58	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_59	TTCAAAAATT	TGAAAAAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_60	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn_61	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_62	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_63	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_64	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_65	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
Tn_66	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_67	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_68	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 69	TTCAAAAATT	TGAAAAATAA	ТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 70	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn ⁷¹	TTCAAAAATT	TGAAAAAAAA	атааатааат	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 72	TTCAAAAATT	TGAAAAAAAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 73	TTCAAAAATT	TGAAAAATAA	атааатааат	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 74	TTCAAAAATT	TGAAAAATAA	ТАААТАААТА	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 75	TTCAAAAATT	TGAAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 76	ттсаааатт	TGAAAAAAAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 77	TTCAAAAATT	TGAAAAAAAA	ΔΤΔΔΔΤΔΔΔΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 78	TTCAAAAATT	TGAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 79	TTCAAAAATT	ТСААБАБТАБ	ATAAATAAAT	CARGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 80	TTCAAAAATT	телалатал	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 81	TTCAAAAATT	TCAAAAAAAAAA	ATAAATAAAT	CAAGICATCA	ACCORACCOG	AAAGAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn 87	TTCANANTT	TCAAAAAAAAA	ATAAATAAAT	CARGICATCA	ACCONACCCO	AAAGAGAGAGGG	ATTCCAACCC	TCCCTACCAA
Tn 83	TTCARARATI	TCAAAAAAAAA	ATAAATAAAT	CARGICATCA	ACCOMACCOG	AAAGAGAGGGG	ATTCCAACCC	TCCCTACCAA
Tn 84	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn 95	TTCAAAAATT	TGAAAAATAA		CAAGICAICA	ACGGAACCGG	AAAGAGAGGGG	ATTCGAACCC	TCGGTACGAA
Tn_05	TICAAAAATT	IGAAAAATAA		CAAGICATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
11_00 Tn 97	TTCAAAAATT	TGAAAAATAA		CAAGICATCA	ACGGACCCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
Tn_0/	TICAAAAATI	IGAAAAAIAA		CAAGICAICA	ACGGAACCGG	AAAGAGAGAGGG	ATTCAAACCC	TCGGTACAAA
TIL_00 T., 90		IGAAAAAIAA		CAAGCC-ICA	ACGGACCCGG	AAAGAGAGAGG-	ATTCGAACCC	TCGGTACGAA
In_89	TTCAAAAATT	TGAAAAAAA	AAAAATAAAC	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_90 T= 01	TTCAAAAATT	TGAAAAAAA	ATAAATAAAT	CAAGCCACCA	CCGGACCCGG	AAAGAGAGGG	ATTCCAACCC	TCGGTACAAA
In_91 T02	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_92	TTCAAAAATT	TGAAAAAAAA	АТАААААААТ	CAAGCCATCA	CCGGACCCGG	AAAAAGAGGG	ATTCAACCCC	CCGGTCCAAA
In_93	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTCCGAA
1n_94 T= 05	TTCAAAAATT	TGAAAAATAA	АТАААТАААС	CAAGCCCTCA	CCGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_95	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
1n_90 T= 07	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAAAAAGGG	ATTCAAACCC	TCGGTACAAA
In_9/	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
1n_98 T= 00	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCC-TCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_99	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
	TTCAAAAATT	TGAAAAAAAA	ATAAATAAAT	CAAGCCATCA	ACGGACCCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
NARC_Carolea	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAAAAGGG	ATTCAAACCC	TCGGTACGAA
NARC_Domat	TTCAAAAATT	TGAAAAATAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACGAA
NARC_Gemlik	TTCAAAAATT	TGAAAAATÀA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAÀA
NARC_Leccino	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
NARC_Moraiolo	TTCAAAAATT	TGAAAAATAA	ТАААТАААТ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCAAACCC	TCGGTACAAA
In Arbsana	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
In_Chetoui	TTCAAAAATT	TGAAAAAAAA	ΑΤΑΑΑΤΑΑΑΤ	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_Coratina	TTCAAAAATT	TGAAAAATAA	АТАААТАААТ	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn_Koroneiki	TTCAAAAATT	TGAAAAAAA	таааааааа	CAAGCCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA
Tn Frantoio	TTCAAAAATT	TGAAAAATAA	ATAAATAAAT	CAAGTCATCA	ACGGAACCGG	AAAGAGAGGG	ATTCGAACCC	TCGGTACGAA

Ta TRACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART ENCICALT GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALCOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATLACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATTACTACT Ta TALACTOSTAC ALGOBATTAG CARTCORAGE CITIASTICA CICLORCART CITCICCART GANARASIA ATTACTACT Ta TALA	Tn_l	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Ta TARCTORIA: ALGOBATTAG CALTCORAGE CITLATICOL TELECOLAT E BALANAGKA ATLACTACE Ta TALECTORIA: ALGOBATTAG CALTCORAGE CITLATICOLAT CITLAGUAR ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLAT CITLAGUAR ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLAT CITLAGUAR CITLATICOLAT Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLAT CITLAGUAR CITLATICOLAT Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLA CITLAGUAR CITLATICOLATI CIALAGUAR ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLA CICLAGUAR CITLACUART GALAAAGAA ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLA CICLAGUAR CITLACUART GALAAAGAA ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLATI CILLAGUAR GALATACHACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLATI GALAAAGAA ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLATI GALAAAGAA ATLACTACE Ta TALECTORIA: CALGOBATTAG CALTCORAGE CITLATICOLATI CILLAGUAR	Tn_2	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tag TRACTORIAC ALCOGATIAG CALTCORECG CITLAGUCA TECRECOLT ENCOCULAT GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCORECG CITLAGUCA TECRECOLTE TECTOCIATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCORECG CITLAGUCA TECRECOLTE TECTOCIATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCORECCE CITLAGUCA TECTOCIATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCORECCE CITLAGUCAT TETTOCIATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCORECG CITLAGUCAT TETTOCIATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI TETOCATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI TETOCATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI TETOCATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI TETOCATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI GALAARGER ATLECTACT Tag TALECTORIAC ALCOGATIAG CALTCOREG CITLAGUCA TETROCOATI GALAARGER ATLECTACT <th>Tn_3</th> <th>TAACTCGTAC</th> <th>AACGGATTAG</th> <th>CAATCCGACG</th> <th>CTTTAGTCCA</th> <th>CTCAGCCATC</th> <th>TCTCCCAATT</th> <th>GAAAAAGAGA</th> <th>ATTACTACCT</th>	Tn_3	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tag TRACTORIA CACGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CICCUCAT GANAAGBA ATTACTACT Tag TAACTORIA AAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCATAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCATAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCATAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUAT CITCUCATAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUCAT CICCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUCAT CICCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUCAT CICCUCAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUCAT CICUCAAT GANAAGBA ATTACTACT Tag TAACTORIA CAGGGATTAG CARCCOAGE CITIAGUCA CICLAGUCAT CICUCUAT GANAAGBA ATTACTACT	Tn_4	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tm The TRANCTORIA ARGGANTAG CANCORGE CITANGUCA TERECORT ETECCONT GANAMAGRA ATHERACU Tm TARCTORIA ARGGANTAG CANTCORGE CITANGUCA TERECORT ETECCONT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA TERECORT ETECCONT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA TERECORT TERECORT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA TERECORT TERECORT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA TERECORT TETECONT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CECAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CICAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGE CITANGUCA CICAGCCART CITCUCANT GANAMAGRA ATHERACU Tm TARCTORIA CANGGANTAG CANTCORGC CITANGUCA CICAGCCART CITCUCANT GANAMAGRA ATHERACU <th>Tn_5</th> <th>TAACTCGTAC</th> <th>AACGGATTAG</th> <th>CAATCCGACG</th> <th>CTTTAGCCCA</th> <th>CTCAGCCATC</th> <th>TCTCCCAATT</th> <th>GAAAAAGAGA</th> <th>ATTACTACCT</th>	Tn_5	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tm TARACTORIA CAGOSATTAG CANCOGAGO CITAGÓCCA CICAGOCANT GANANGRA ATIACTACOT Tm 9 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 10 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 11 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 12 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 13 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 14 TAACTORIA ANOGRATIAG CANTOCAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 14 TAACTORIA ANOGRATIAG CANTOCAGOS CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 14 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 15 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 16 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 17 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 18 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT Tm 19 TAACTORIA ANOGRATIAG CANTOGAGO CITAGÓCA CICAGOCANT GANANGRA ATIACTACOT	Tn_6	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tag TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECAT CITECCAATT GANANGRA ATHERTACT Tag TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT GIOCAATT GANANGRA ATHERTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT GIOCAATT GANANGRA ATHERTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHERTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHERTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHERTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHECTACT Tal TARECEGTAC AGGGATTAG CANCEGAG CITAGECCA CICAGECATT CICCECAATT GANANGRA ATHE	Tn_7	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn P TRACTORIA CACOGNITIG CANCOGNO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 10 TRACTORIA CANCOGNITIG CANTOCONO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 11 TRACTORIA CANCOGNITIG CANTOCONO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 12 TRACTORIA CANCOGNITIG CANTOGNO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 13 TRACTORIA CANCONTIN CANTONNO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 14 TRACTORIA CANCONTIN CANTONNO CITAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 16 TRACTORIA CANCONTINO CANTONNO CITAGETCO TETEOCOLATI GANANGANA ATHETACIÓN Tn 17 TRACTORIA CANCONTINO CITAGETCO TETAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 18 TRACTORIA CANCONTINO CITAGETCO TETAGETCO TETEOCOLATI GANANGAN ATHETACIÓN Tn 10 TRACTORIA CANCONTINO CITAGETCO TETAGETCO TETAG	Tn_8	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn.10 THACTOSTAC ALCOGNITIA CANTECCAGE CITIAGECCA CICAGECCANT CANANAGAA, "THACHACE T Tn.11 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA CICAGECCANT CANANAGAA, "THACHACE T Tn.12 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA CICAGECCANT CANANAGAEA ATTACHACE T Tn.13 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECCANT CANANAGAEA ATTACHACE T Tn.14 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECANT CICCECANT GANANAGAEA ATTACHACE T Tn.15 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECANT CICCECANT GANANAGAEA ATTACHACE T Tn.16 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECANT CICCECANT GANANAGAEA ATTACHACET Tn.18 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.20 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.21 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.22 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.23 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.23 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn.23 THACTOSTAC ALCOGNITIA CANTEGENES CITIAGETCA TECAGECATE TECTECCANT GANANAGAEA ATTACHACET Tn	Tn_9	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn Thatcrostic ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACHACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACTACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACTACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACTACT Tn TAACTOSTAC ALCOGNITIA CANTCORAGE CITHASTCCA TCASCCATC TOTCCCANT GANANGRAGE ATTACTACT Tn TAACTOSTAC ALCOGNITIA CANTCO	Tn_10	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAAA	-TTACTACCT
Tn The Control Concerns Control Contre Contro Contre Control Contre Control Control Control Contrel Co	Tn_11	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn.13 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_14 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_15 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_16 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_18 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_20 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_210 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_211 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_212 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_213 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_214 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_225 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_236 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_237 TAACTOGING ANGEGATING CANTOGAGG CITINGTOCA CICAGOCATE INTOCOANT GANANGAGA MITHOTACIE Tn_238 TAACTOGING ANGEGATING CAN	Tn_12	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGA- <mark>A</mark>	ATTACTACCT
Tn.14 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_15 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_17 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_18 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_19 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_20 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_21 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_22 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_23 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_24 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_25 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACCT Tn_26 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_27 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_28 TAACTOGIAC ALCEGRATIAS CANTOGRAG CITINGTOCA CICREGOLAT CITCCOLATI GANAAGAR ATTACTACT Tn_29 TAACTOGIAC ALCEGRATIAS CANTOGRAG	Tn_13	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn.15 TAACTOGIAC ALCEGRATIAS CARTCORACE CITIAGUCA CICAGOCATE CITCCORATE GANAAGRA ATTACTACET Tn.16 TAACTOGIAC ALCEGRATIAS CARTCORACE CITTAGUCA CICAGOCATE CITCCORATE GANAAGRA ATTACTACET Tn.18 TAACTOGIAC ALCEGRATIAS CARTCORACE CITTAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.19 TAACTOGIAC ALCEGRATIAS CARTCORACE CITTAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.20 TAACTOGIAC ALCEGRATIAS CARTCORACE CITTAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.21 TAACTOGIAC ALCEGRATIAS CARTCORACE CITTAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.22 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.23 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.24 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.25 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.26 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.27 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.28 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.29 TAACTOGIAC ALCEGRATIAS CARTCORACE CITLAGUCA CICAGOCATE TETECORATE GANAAGRA ATTACTACET Tn.29 TAACTOGIAC ALCEGRATI	Tn_14	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn.16 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGCOL CICAGOCATE GUTCCOANT GANANGAGA ATTACTACET Tn.17 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGCOL CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.19 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGCOL CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.20 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGCOL CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.21 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGCOL CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.22 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.21 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.22 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.23 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.24 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.25 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.28 TAACTOGIAC AACGGATTAG CANTOGAGG GITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.29 TAACTOGIAC AACGGATTAG CANTOGAGG CITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.20 TAACTOGIAC AACGGATTAG CANTOGAGG CITTAGTOCA CICAGOCATE ICTOCOANT GANANGAGA ATTACTACET Tn.20 TAACTOGIAC AACGGATTAG CANTOGAGG CITTAGT	Tn_15	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn17 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn218 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn20 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn21 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn22 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn22 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn23 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn225 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAAGAGA ATTACTACCT Tn26 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn27 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn29 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAAGAGA ATTACTACCT Tn30 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn31 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn32 TAACTGATAC AACGGATTAG CAATCCGACG CITTAGECCA CICAGCCATC ICTCCCCAAT GAAAAGAGA ATTACTACCT Tn33 TAACTGATAC AACGGA	Tn_16	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn18 TAACTORIC AACGGATTAG CARTCORACG CITIAGCOCA CTORSOCARC INCORAT GAAAAGAGA ATTACTACC Tn21 TAACTORIAC AACGGATTAG CARTCORACG CITIAGCOCA CTORSOCARC INCOCCART GAAAAGAGA ATTACTACC Tn21 TAACTORIAC AACGGATTAG CARTCORACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACC Tn21 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn22 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn23 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn25 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn25 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn26 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn27 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn28 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn29 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn30 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCARC INTOCOCART GAAAAGAGA ATTACTACCT Tn31 TAACTORIAC AACGGATTAG CARTCOGACG CITTAGOCCA CTORSOCART INTOCAATT GAAAAAGAGA ATTACTACCT Tn33 TAACTORIAC AACGGATTAG CARTCOG	Tn_17	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_19 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA TECAGECART GENERALGAE ATTACHACT Tn_21 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECART CITCCCART GANAHAGAG ATTACHACT Tn_21 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECART CITCCCART GANAHAGAG ATTACHACT Tn_21 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECCART CITCCCART GANAHAGAG ATTACHACT Tn_21 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECCART CITCCCART GANAHAGAG ATTACHACT Tn_22 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECCART CITCCCART GANAHAGAG ATTACHACT Tn_25 THACTOGING HAGGGATING CARTCOGAGE GITHAGECCA CTCAGECCART CITCCCART GANAHAGAG ATTACHACT Tn_27 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CITCCCART GANAHAGAGA ATTACHACT Tn_28 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CITCCCART GANAHAGAGA ATTACHACT Tn_30 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CITCCCART GANAHAGAGA ATTACHACT Tn_31 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CITCCCART GANAHAGAGA ATTACHACT Tn_32 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CITCCCAATT GANAHAGAGA ATTACHACT Tn_33 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CAATAGATA GANAHAGAGA ATTACHACT Tn_34 THACTOGING HAGGGATING CARTCOGAGE GITTAGECCA CTCAGECCART CAATAGATA GANAHAGAGA ATTACHACT Tn_35 THACTOGING HAGGGATING CA	Tn_18	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn 20 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA CTCAGCCART CAAAAAGAGA ATTACAACCT Tn 21 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA CTCAGCCART CACAATT GAAAAAGAGA ATTACTACCT Tn 22 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 23 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 24 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 25 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 26 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 27 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 28 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 30 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA TCCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT Tn 31 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA TCCAGCCART CTCACCCAATT GAAAAAGAGA ATTACTACCT Tn 32 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA Tn 33 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA Tn 34 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCCA Tn 33 TAACTOGTAC AACGGATTAG CAATCOGACG CTTLAGTCA Tn 34 TAACTOGTAC AACGGATTAG CAATCOGA	Tn_19	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn.21 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART GANARAGAG ATTACHACT Tn.22 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART GICAARAGAGA ATTACHACT Tn.24 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART GICAARAGAGA ATTACHACT Tn.25 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART GICAARAGAGA ATTACHACT Tn.26 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCART GANARAGAG ATTACHACT Tn.27 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCART GANARAGAGA ATTACHACT Tn.28 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCART GANARAGAGA ATTACHACT Tn.29 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCART GANARAGAGA ATTACHACT Tn.29 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCATT GANARAGAGA ATTACHACT Tn.30 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCATT GANARAGAGA ATTACHACT Tn.31 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCANT GANARAGAGA ATTACHACT Tn.33 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCANT GANARAGAGA ATTACHACT Tn.34 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCANT GANARAGAGA ATTACHACT Tn.35 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCANT GANARAGAGA ATTACHACT Tn.36 TRACTOGING RAGGANING CARTCOGAGE GITHAGICCA CICAGCCART CICACCCANT GANARAGA	Tn_20	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACAACCT
Tn 22 TRACTOCIAC ARCEGATTAG CARTCORACE CITTAGECCA CICAGCCATT CICCCART GARAAGAGA ATTACTACCT Tn 24 TRACTOCIAC ARCEGATTAG CARTCORACE CITTAGECCA CICAGCCATT CICCCART GARAAGAGA ATTACTACCT Tn 25 TRACTOCIAC ARCEGATTAG CARTCORACE CITTAGECCA CICAGCCATT CICCCART GARAAGAGA ATTACTACCT Tn 26 TRACTOCIAC ARCEGATTAG CARTCORACE CITTAGECCA CICAGCCATT CICCCART GARAAGAGA ATTACTACCT Tn 27 TRACTOCIAC ARCEGATTAG CARTCORACE CITTAGECCA CICAGCCATT CICCCART GARAAGAGA ATTACTACCT Tn 28 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCATT CICCCCART GARAAGAGA ATTACTACCT Tn 29 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCATT CICCCCART GARAAGAGA ATTACTACCT Tn 31 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCATT CICCCCART GARAAGAGA ATTACTACCT Tn 31 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCATT CICCCCART GARAAGAGA ATTACTACCT Tn 32 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCART CICCCCART GARAAGAGA ATTACTACCT Tn 33 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCART CICCCCART GARAAGAGA ATTACTACCT Tn 34 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCART CICCCCART GARAAGAGA ATTACTACCT Tn 35 TRACTOCIAC ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCART CICCCCART GARAAGAGA ATTACTACCT Tn 36 RAACTOCIA ARCEGATTAG CARTCOGACE CITTAGECCA CICAGCCART CICCCCART GARAAGAGA ATTACTACCT Tn 37 TRACTOCIAC ARCEGATTAG CART	Tn_21	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn 23 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 24 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 25 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 26 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 27 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 28 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICCECAATT GAAAAGAGA ATTACTACET Tn 30 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 31 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 33 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 34 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 35 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 36 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 37 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 36 TAACTEGTAC AACGGATTAG CAATCEGACG CITTAGECCA CICAGECATT CICECCAATT GAAAAGAGA ATTACTACET Tn 37 TAACTE	Tn_22	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_24TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_25TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_27TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_28TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_30TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_30TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_31TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_32TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTTn_33TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCTTn_34TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_35TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_36AAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_37AAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_39TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_40TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_41TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_43TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA TCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTGGTAC AAC	Tn_23	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_25TAACTGGTAC AACGGATTAG CAATCCGACG GTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAAAA ATTACTACCTTn_26TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_27TAACTGGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_29TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_30TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_31TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_32TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_33TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_34TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_35TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_36AACCCCCA AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_37AACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_40TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_41TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_45TAAC	Tn_24	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_26IAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCAATT GAAAAGAGA ATTACTACCTTn_27TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_29TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_30TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_31TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_31TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_33TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAGAGA ATTACTACCTTn_34TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_35TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_36AAACACCTCA AACGGATTAG CAATCCGACG CITTAGCCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_37AAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_38TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_40TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_41TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_42TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_43TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCART CITCCCCAATT GAAAAAGAGA ATTACTACCT <t< th=""><th>Tn_25</th><th>TAACTCGTAC</th><th>AACGGATTAG</th><th>CAATCCAACG</th><th>CTTTAGTCCA</th><th>CTCAGCCATC</th><th>TCTCCCAATT</th><th>GAAAAAAAA</th><th>ATTACTACCT</th></t<>	Tn_25	TAACTCGTAC	AACGGATTAG	CAATCCAACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAA	ATTACTACCT
In 27TRACTOSTAC ARCGATTAG CARTCGAGG CITTASCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 28TAACTOSTAC ARCGATTAG CARTCGAGG CITTASCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 29TAACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 30TAACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 31TRACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 33TRACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 33TRACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 34TAACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 35TRACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 36AARCACTCA ARCGAGTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 37ARACTOSTAC ARCGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATACTACCTIn 38TAACTOSTAC ARCGGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 40TAACTOSTAC ARCGGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 41TAACTOSTAC ARCGGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 42TAACTOSTAC ARCGGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 43TAACTOSTAC ARCGGATTAG CARTCGAGG CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 44TAACTOSTAC ARCGGATTAG CARTCGAGC CITTAGCCCA CTCAGCCART CTCCCCART GARAAGAGA ATTACTACCTIn 45TAACTOSTAC ARCGGATTAG CARTCGAGC CITTAGCCCA CTCAGCCART CTC	Tn_26	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In 28TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAAA ATTACTACCTIn 29TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAAA ATTACTACCTIn 30TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAAA ATTACTACCTIn 31TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCTIn 32TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCTIn 33TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCTIn 34TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn 35TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 36AAACACCTCA AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 37AAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 38TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 39TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 40TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 41TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 42TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn 45	Tn_27	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_29TRACTORIAC ARCIGATIAG CARTCOGACG CITIAGCCCA CICAGCCART CICCCCART GAAAAAGAGA ATTACIACCTIn_30TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCCA CICAGCCART CICCCCART GAAAAAGAGA ATTACIACCTIn_31TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCCA CICAGCCART CICCCCART GAAAAAGAGA ATTACIACCTIn_32TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATTACIACCTIn_33TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATTACIACCTIn_34TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATTACIACCTIn_35TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_36AAACACCTCA ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_37AAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_38TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_40TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_41TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_42TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAA ATACIACCTIn_43TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATACIACCTIn_44TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATACIACCTIn_45TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATACIACCTIn_46TAACTORIAC ARCIGATIAG CAATCOGACG CITIAGTCCA CICAGCCART CICCCCAATT GAAAAAGAGA ATACIACCTIn_47TAACTORIAC ARCIGATIAG	Tn_28	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAAA	ATTACTACCT
 In_30 TAACTORIAC AACGGATTAG CANTOCAACG CITTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT In_31 TAACTORIAC AACGGATTAG CANTOCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_32 TAACTORIAC AACGGATTAG CANTOCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_33 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_34 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_35 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_36 AAACACCTCA AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_37 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_38 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_40 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_41 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_42 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT In_43 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT In_44 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT In_45 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT In_46 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT In_47 TAACTORIAC AACGGATTAG CAATCCGACG CITTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAGAGA ATTACTACCT <l< th=""><th>Tn_29</th><th>TAACTCGTAC</th><th>AACGGATTAG</th><th>CAATCCGACG</th><th>CTTTAGCCCA</th><th>CTCAGCCATC</th><th>TCTCCCAATT</th><th>GAAAAAGAGA</th><th>ATTACTACCT</th></l<>	Tn_29	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_31TARCTORIAC ARCIGATIAS CARTOGACS CITIAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTACUTIn_32TARCTORIAC ARCIGATIAS CARTOGACS CITIAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTACUTIn_33TARCTORIAC ARCIGATIAS CARTOGACS CITIAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTACUTIn_34TARCTORIAC ARCIGATIAS CARTOGACS CITTAGUCCA CTCAGUCAUT CUCCUCATT GAAAAAGAGA ATTACTAUCTIn_35TARCTORIAC ARCIGATIAS CARTOGACS CITTAGUCCA CTCAGUCAUT UNDERCART GAAAAAGAA ATTACTAUCTIn_36AAACAUCTCA ARCIGATIAS CARTOGACS CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_37ARACTORIAC ARCIGATIAS CARTOGACS CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAAA ATACTAUCTIn_38TARCTOGTAC ARCIGATIAS CARTOGACS CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_39TARCTOGTAC ARCIGATIAS CARTOGACS CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_40TARCTOGTAC ARCIGATIAS CARTOGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_41TARCTOGTAC ARCIGATTAS CARTOGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_42TARCTOGTAC ARCIGATTAS CARTOGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_43TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_44TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_47TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_48TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_49TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAGUCCA CTCAGUCAUT UNDERCART GAAAAGAGA ATTACTAUCTIn_50TARCTOGTAC ARCIGATTAS CAATOCGACG CUTTAG	In_30 T= 21	TAACTCGTAC	AACGGATTAG	CAATCCAACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAAA	ATTACTACCT
In_32TRACTORIAC ARCEGATIAG CARTCEGACG CITITAGTECA CICAGECART TETECECART GARAAAGAGA ATTACTACETTn_33TRACTEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECCECART GARAAAGAGA ATTACTACETTn_35TRACTEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECCECART GARAAAGAGA ATTACTACETTn_36ARACACETCA ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CETCECCART GARAAAGAGA ATTACTACETTn_37ARACACETCA ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CETCECCART GARAAAGAGA ATTACTACETTn_38TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART TECCECART GARAAAGAGA ATTACTACETTn_39TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECCART GARAAAGAGA ATTACTACETTn_40TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECCART GARAAAGAGA ATTACTACETTn_41TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECCART GARAAAGAGA ATTACTACETTn_42TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECCART GARAAAGAGA ATTACTACETTn_43TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECARTT GARAAAGAGA ATTACTACETTn_44TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECARTT GARAAAGAGA ATTACTACETTn_45TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECARTT GARAAAGAGA ATTACTACETTn_46TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECARTT GARAAAGAGA ATTACTACETTn_47TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECARTT GARAAAGAGA ATTACTACETTn_46TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECAATT GARAAAGAGA ATTACTACETTn_50TRACTCEGTAC ARCEGATTAG CARTCEGACG CITTAGTECA CICAGECART CECECCARTT GARAAAGAGA ATTACTACETTn_51 </th <th>In_31 T_32</th> <th>TAACTCGTAC</th> <th>AACGGATTAG</th> <th>CAATCCGACG</th> <th>CTTTAGCCCA</th> <th>CTCAGCCATC</th> <th>TCTCCCAATT</th> <th>GAAAAAGAGA</th> <th>ATTACTACCT</th>	In_31 T_32	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_33TRACTOGIAC ARCOGATIAG CARTCORACE CTITAGECCA CTCAGCCATE FECCECCART GARAAAGAGA ATTACTACETTn_34TRACTOGIAC ARCOGATIAG CARTCORACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACETTn_35TRACTCOTAC ARCOGATIAG CARTCORACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACETTn_36ARACACCTCA ARCOGATIAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACETTn_37ARACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_38TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_39TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_40TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_41TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_42TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCATE TCECCCART GARAAAGAGA ATTACTACCTTn_43TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_44TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_45TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_46TRACTCOTAC ARCOGATTAG CARTCOGACE CTITAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_47TRACTCOTAC ARCOGATTAG CARTCOGACE CTTAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_48TRACTCOTAC ARCOGATTAG CARTCOGACE CTTAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_50TRACTCOTAC ARCOGATTAG CARTCOGACE CTTAGECCA CTCAGCCARE TCECCCART GARAAAGAGA ATTACTACCTTn_51TRACTCOTAC A	1n_32 T_ 32	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_34TARCTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART FUNCTIONAL GARARAGAGA HIRCTRCTTn_35TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART GARARAGAGA HIRCTRCTTn_36ARACACCTCA ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART GARARAGAGA ATTACTACCTTn_37ARACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART GARARAGAGA ATTACTACCTTn_38TARCTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART CTCCCCART GARARAGAGA ATTACTACCTTn_39TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART CTCCCCART GARARAGAGA ATTACTACCTTn_40TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART CTCCCCCART GARARAGAGA ATTACTACCTTn_41TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART CTCCCCCART GARARAGAGA ATTACTACCTTn_42TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARCCART CTCCCCART GARARAGAGA ATTACTACCTTn_43TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_44TRACTORIAC ARCOGNTING CARTCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_45TRACTORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_46TAACTCORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_47TRACTORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_49TRACTORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_50TRACTORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_51TRACTORIAC ARCOGNTING CAATCCORACE CTITAGECCA CTCARGCCART CTCTCCCART GARARAGAGA ATTACTACCTTn_52TRACTORIAC ARCOGNT	11_33 Tn 24	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCCCCCAATT	GAAAAAGAGA	ATTACTACCT
In_35TAACICGIAC AACGGATIAG CAATCCGACG CITTAGUCCA CUCAGCCALC INCCCAATT GAAAAAGAAA AAGACAIn_36AAACACCTCA AACGGATAG CAATCCGACG CUTTAGUCCA CUCAGCCACC CCCCCCACT AAAAAAGAAA AAGACCCCCTIn_37AAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAAA ATACTACCTIn_38TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAAA ATACTACCTIn_40TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_41TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_42TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_43TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_44TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_45TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_46TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_47TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAAA ATTACTACCTIn_48TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAAA ATTACTACCTIn_50TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAAA ATTACTACCTIn_52TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_53TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCTIn_55TAACTCGTAC AACGGATTAG CAATCCGACG CUTTAGUCCA CUCAGCCATC TCUCCCAATT GAAAAAGAGA ATTACTACCCT	Tn 25	TAACICGIAC	AACGGAIIAG	CAAICCGACG	CITIAGCCCA	CICAGCCAIC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_30AAACACCTAR ARGARAGA ARACCCOCC CETTAGECEE CECECECEE CECECECE CECECATT GAAAAGGA ATACACCECTIn_37AAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_39TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_40TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_41TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_42TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_43TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTIn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGECCA CTCAGCCATC TCTCCCAATT GAAAAGGA ATTACTACCTTn_55TAACTCGTAC AACGGA	Tn 26	TAACICGIAC	AACGGATTAG	AATCCGACG	CITIAGICCA	CICAGCCAIC	CCCCCAATT	GAAAAAAAAA	ATTACTACCT
Th_37AARCTOGTAC ARCGATTAG CARTCGACG CTTTAGTCCA CTCAGCCART CTCCCCAATT GAAAAGAGA ATTACTACCTTn_38TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCCAATT GAAAAGAGA ATTACTACCTTn_40TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCCAATT GAAAAGAGA ATTACTACCTTn_41TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCCAATT GAAAAGAGA ATTACTACCTTn_42TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCAATT GAAAAGAGA ATTACTACCTTn_43TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCAATT GAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCAATT GAAAAGAGA ATTACTACCTTn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCCAATT GAAAAGAGA ATTACTACCTTn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCAATT GAAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCCCCCAATT GAAAAGAGA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCART CTCCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCART CTCTCCCAATT GAAAAAGAGA ATTACTACCT	Tn_30	AAACACCICA	AACGAAGAAG	AAACCCCCCG	CUTTIGCCCC	CCCGCCCCCC	TOTOCCAUCI	AAAAAAGAAA	AAGACCCCCCI
The_50TARCTOTIAC MACGATTAG CARTCORACT CTTAGTCCA CTCARCCATC TOTOCOMAIT GAMARAGAM ATTACTACCTTn_39TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCCAATT GAMAAAGAGA ATTACTACCTTn_40TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCCAATT GAMAAAGAGA ATTACTACCTTn_41TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCCAATT GAMAAAGAGA ATTACTACCTTn_42TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAMAAAGAGA ATTACTACCTTn_43TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAMAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAMAAAGAGA ATTACTACCTTn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAMAAAGAGA ATTACTACCTTn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAMAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAAAAAGAAA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TOTOCCAATT GAAAAAGAGA ATTACTACCCT	Tn 38	TAACICGIAC	AACGGATIAG	CANTCCGACG	CITIAGICCA	CICAGCCAIC	TCTCCCAATT	CAAAAAGAGA	ATTACTACCT
Th_57TARCTOSTRO ARCSORTARS CARTCORACS CTTARSTOCA CTORSTORE TOTOCORATT GARARAGAR ATTACTACCTTn_40TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_41TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_42TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_43TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_44TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_45TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_46TAACTOGTAC AACGGATTAG CAATCOGACG CTTAGTCCA CTCAGCCATC TCTCCCAATT GARARAGAGA ATTACTACCTTn_47TAACTOGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GARAAAGAGA ATTACTACCTTn_50TAACTOGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GARAAGAGA ATTACTACCTTn_51TAACTOGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GARAAGAGA ATTACTACCTTn_52TAACTOGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GARAAGAGA ATTACTACCTTn_54TAACTOGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCT	Tn 30	TAACICGIAC	AACGGATTAG	CANTCCGACG	CTITAGICCA	CTCAGCCATC	TCCCCCAATT	CANAAAAGAAA	ATTACTACCT
Th_40TRACTOSTAC ARCOGATTAS CARTOCORCO CITRAGICOL CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_41TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_42TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_43TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_44TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_45TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_46TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_47TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_48TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_50TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGCCCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_52TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_53TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCTTn_55TAACTOGTAC AACGGATTAG CAATCOGACG CITTAGTOCA CICAGOCATC TOTOCOLATT GAAAAAGAGA ATTACTACCT	Tn_40	TAACTCGTAC	AACGGATTAG	CANTCOGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_41Indicidite Arconitation characterized contracterized circadecate foreconant gaaaaagaga attactacetIn_42TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn_43TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTIn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTIn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAGAGA ATTACTACCTIn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn_40	TAACTCGTAC	AACGGATTAG	CANTCCOACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	CANANAGAGA	ATTACTACCT
Tn_43TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAAAAA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 42	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_44TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 43	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_45TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 44	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_46TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAAA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCT	Tn 45	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_47TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAAA ATTACTACCTTn_48TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAAAAA ATTACTACCTTn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 46	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_48TAACTCGTAC AACGGATTAG CAATCCAACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAAAAA ATTACTACCTTn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 47	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAAA	ATTACTACCT
Tn_49TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 48	TAACTCGTAC	AACGGATTAG	CAATCCAACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAAA	ATTACTACCT
Tn_50TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 49	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_51TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGCCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn 50	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_52TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn_51	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_53TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAGA ATTACTACCT	Tn_52	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_54TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCAATT GAAAAAGAGA ATTACTACCTTn_55TAACTCGTAC AACGGATTAG CAATCCGACG CTTTAGTCCA CTCAGCCATC TCTCCCCAATT GAAAAAGAAA ATTACTACCT	Tn_53	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_55 таастостас аассдаттас саатсодаес стттастсса стелессате тетессаатт саалаадала аттастаест	Tn_54	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
	Tn_55	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAAA	ATTACTACCT

Tn_56	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_57	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_58	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_59	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_60	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_61	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAA	ATTACTACCT
Tn_62	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_63	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_64	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_65	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_66	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_67	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_68	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_69	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_70	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_71	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_72	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_73	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_74	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_75	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_76	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_77	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_78	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_79	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_80	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_81	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_82	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_83	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_84	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAAA	ATTACTACCT
Tn_85	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_86	TAACTCGTAC	AACGGATTAG	CAATCCAACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAA	ATTACTACCT
Tn_87	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_88	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACAACCT
Tn_89	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_90	TAACTCGTAC	AACGGATTAC	CAACCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAA	ATTACTACCT
Tn_91	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_92	AAACTCGTAC	AACGGATTAG	CAATCCAACC	CTTTATCCCA	CTCACCCATC	TCTCCCAATT	GAAAAAAAA	ATTACTCCCT
Tn_93	TAACTCGTAC	AACGGATTAG	CAATCCAACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAAA	ATTACTACCT
Tn_94	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_95	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
In_96	AAACTCGTAC	AACGGATTAG	CAACCCAACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAAAAA	ATTACTACCT
Tn_97	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_98	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_99 T- 100	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Carolea	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Domat	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CTTTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Gemik	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
NARC_Leccino	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
The Ash	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGICCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Th Arbosana	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGCCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_Cnetoui	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGTUCA	CTCAGCCATC	TOTOCCAATT	GAAAAAGAGA	ATTACTACCT
Tn_Coratina	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGCCCA	CTCAGCCATC	TOTOCCAATT	GAAAAAGAGA	ATTACTACCT
Th Koroneiki	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGCCCA	CTCAGCCATC	TOTOCCAATT	GAAAAAGAGA	ATTACTACCT
1 n_r rantoio	TAACTCGTAC	AACGGATTAG	CAATCCGACG	CITTAGTCCA	CTCAGCCATC	TCTCCCAATT	GAAAAAGAGA	ATTACTACCT

Tn_l	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_2	тасататаат	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_3	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_4	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_5	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_6	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_ 7	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_8	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_9	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_10	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_11	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_12	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_13	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_14	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_15	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_16	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_17	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_18	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_19	TACATATAAT	GTAAGGGGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	CCTTTTAGAT	TAGATAATTA
Tn_20	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_21	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_22	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_23	TACATATAAT	GTAAGGAGTC	TTTCTTTC-C	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_24	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_25	TACATATAAG	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	ТАААТААТТА
Tn_26	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_27	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_28	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_30	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_31	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_32	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_33	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_34	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_35	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	TAGATAATTA
Tn_36	CCCTTAAAAA	AAAGGGAGGC	CCTCTTTCCT	TCCCCTCTCG	AGAGAGAAAA	ACAGAAAATT	TCTTTCATGT	AGAAATATAT
Tn_37	тасататаат	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_38	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_39	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_40	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_41	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
In_42	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_43	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	TAGATAATTA
In_44	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_45	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
1n_46	TACATATAAT	GTAAGGAGCC	TTTCTTTC-C	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
In_4/	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	TAGATAATTA
In_48	TACATATAAG	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAAAT	TAGA-AATTA
1n_49 T= 50	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
11_50 T_ 51	TACATATAAT	GTAAGGAGTC	TITCITTCIC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
111_51 Tn 52	TACATATAAT	GTAAGGAGCC	TITCITTCIC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
111_52 Tr. 52	TACATATAAT	GTAAGGAGTC	TITCITTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
11_03 Tn 54	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
111_34 Tn 55	TACATATAAT	GTAAGGAGTC	TITUTTUTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_56	ТАСАТАТААТ	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_58	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	TAGATAATTA
Tn_59	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_60	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_61	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	TAGATAATTA
Tn_62	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_63	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_64	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_66	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_67	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_70	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_76	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_77	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_79	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_80	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_82	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_83	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_84	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_85	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_86	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_87	TACATATAAG	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
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Tn_89	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_90	TACATATAAG	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGA-ATACAA	ATCAGGAATT	TCTTTTAAAT	AAGATAATTA
Tn_91	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_92	TCCATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAA	AGATATCCAA	ATCAGGAATT	TCTTTTAAAT	ΤΑΑΑΤΑΑΤΤΑ
Tn_93	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_94	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_95	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_96	TACATATAAG	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAAAT	ТАААТААТТА
Tn_97	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_98	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_99	ТАСАТАТААТ	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_100	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC_Carolea	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC_Domat	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC_Gemlik	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGAT-TACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC_Leccino	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
NARC_Moraiolo	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn Arbosana	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_Chetoui	ТАСАТАТААТ	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_Coratina	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn Koroneiki	TACATATAAT	GTAAGGAGCC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA
Tn_Frantoio	TACATATAAT	GTAAGGAGTC	TTTCTTTCTC	TATTCTATAG	AGATATACAA	ATCAGGAATT	TCTTTTAGAT	TAGATAATTA

Tn_1	GATAAAGGAA GGGCTCGAAC GAGCCTATAA ATAAATAAAG AAAAAAAAA AAGAAAACTT CTTTGGGTTG
Tn 2	GATAAAGGAA GGGCTCGAAC GAGCCTATAA ATAAATAAAG AAAAAAAAA AAGAAAACTT CTTTGGGTTG
Tn 3	GATAAAGGAA GGGCTCGAAC GAGCCTATAA ATAAATAAAG AAAAAAAAA AAGAAGACTT CTTT
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Tn 5	GATAAAGGAA GGGCTCGAAC GAGCCTATAA ATAAATAAAG AAAAAAAAA AAGAAGAT-T CTTTG
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Tn 48	GATAAAGGAA GGGCTCGAAC GAGCCTATAA ATAA-TAAAG AAAAAAAAAA AAAAAAAACTT TTTTGGGTA-
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_ 	

m = = <						_	
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Tn_67	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_68	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	ААААААТ-Т	CTTTGTGTGG
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Tn_81	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	АААААААСТТ	CTTTGGGTTG
Tn_82	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_83	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_84	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	атааатааад	ААААААААА	AAGAAAACAT	CTTTGTGTTG
Tn_85	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_86	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	ААААААСАТ	CTTTGTGTTG
Tn_87	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	ААААААСТТ	CTTTGGGTTG
Tn_88	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAAAAGACAT	CTTTGTG
Tn_89	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAGG	ААААААААА	AGGAAGACTT	TTT
Tn_90	GATAAGGGAG	GGGCTCCAAC	GAGCCTATAA	АТАААТАААА	ААААААААА	ATAAAAATCC	TT
Tn_91	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_92	AATAAAGGAA	GGGCTCAAAC	GACCCTATAA	АТАААТАААА	ААААААААА	АААААААСТТ	TTTTGGGTT-
Tn_93	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	АААААААСАТ	CTTTGGGTG-
Tn_94	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAAAAGATAT	CTTTGTG
Tn_95	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAATTAAGG	ААААААААА	AGGA-GACTT	CTTT
Tn_96	AATAAAGGAA	GGGCTCAAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAAAAACTT	CTTTGGGTG-
Tn_97	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AGGAAGACTT	CTT
Tn_98	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	АААААААТ	CTTTGTGTG-
Tn_99	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_100	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACTT	CTTT
NARC_Carolea	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAAACTT	CTTG
NARC_Domat	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	АААААААСТТ	CTTTGTGTT-
NARC_Gemlik	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAA-TAAAG	ААААААААА	AAAAAAACTT	CTTTGGGTA-
NARC_Leccino	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	ААААААСАТ	CTTTGTGTT-
NARC_Moraiolo	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	АААААААААА	AAAAAAACTT	CTTTGGGTT-
Tn Arbosana	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACAT	CTTT
Tn_Chetoui	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AGGAAGACTT	CTT
Tn_Coratina	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	АААААААААА	AAGAAGACTT	CTTT
Tn Koroneiki	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAGG	ААААААААА	AGGAAGACTT	CTT
Tn_Frantoio	GATAAAGGAA	GGGCTCGAAC	GAGCCTATAA	ATAAATAAAG	ААААААААА	AAGAAGACTT	CTTT

(n)

Figure S2. Alignment of 10 reference and 100 unknown plants marker region sequences.