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THE STATUS OF *LEPTODACTYLUS VALIDUS* AS A SINGLE TAXON AND ITS RELATIONSHIP TO *LETPTODACTYLUS PALLIDIROSTRIS*

Kenneth Christopher Yanek

Master of Science in Biology

University of Richmond, 2004

Thesis Director: Dr. Rafael O. de Sá

Abstract. *Leptodactylus validus* exhibits an unusual distribution inhabiting Trinidad, Tobago, and the Lesser Antilles, but not the mainland of South America. This distribution is inconsistent with other distribution patterns observed for these islands. Although slight variation in adult morphology has been observed among the island populations, call data suggest the presence of a single species. Calls of *Leptodactylus pallidirostris* from Venezuela suggested that this taxon might be conspecific with *L. validus*. Herein sequence data from the 12S and 16S mt rRNA genes were collected and analyzed in order to address: 1.) whether more than one species is represented within *L. validus*, and 2.) to determine if *L. pallidirostris* is conspecific with *L. validus*. Independent and combined phylogenetic analyses were conducted using maximum parsimony, maximum likelihood, and Bayesian analysis. Results obtained indicate that *L. validus* represents a single species throughout its distribution and is conspecific with *L. pallidirostris.*

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By

Kenneth Christopher Yanek

B. S., Adelphi University, 2001

I certify that I have read this thesis and find that, in scope and quality, it satisfies the requirements for the degree of Master of Science.

Dr. Rafael O. de Sá, Thesis Advisor

W. Ronald Heyer

Dr. W. Ronald Heyer

W John Hayden

Dr. W. John Hayden

Dr. Gary Radice

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By

KENNETH CHRISTOPHER YANEK

B. S., Adelphi University, 2001

A Thesis

Submitted to the Graduate Faculty

Of the University of Richmond

In Candidacy

for the degree of

MASTER OF SCIENCE

In

Biology

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To my parents Kathy and Kenneth T. Yanek

Introduction

The frog genus *Leptodactylus* (Anura: Leptodactylidae: Leptodactylinae) consists of approximately 70 species distributed throughout Latin America including portions of the West Indies extending through the lowlands of Mexico and southern Texas (Heyer, 1969a; Frost, 2002). Four species groups are currently recognized within this genus: '*fuscus*', '*melanonotus*', '*ocellatus*', and '*pentadactylus*' (Heyer, 1969b, 1974; Maxon and Heyer, 1988; Frost, 2002). Heyer (1969b) originally described the evolutionary relationships among members of the four species groups as representing a transition from aquatic to terrestrial modes of life. This is exemplified by the adaptive morphology, behavior, and the modes of reproduction employed by members within the different groups.

Leptodactylus validus is a cryptically colored frog belonging to the *melanonotus* species group. Members of this group possess extensive toe fringes as adults and dorsolateral folds, if present, are weakly defined with a warty texture (Heyer, 1970). Males possess cornified thumb spines that are used primarily in combat for defending territories (Shine, 1979) but do not have chest spines (Heyer, 1969; 1970). Species in the *melanonotus* group construct foam nests that are placed on the surface of water. In a review of the relationships of the *melanonotus* species group, Heyer (1970) used a set of 34 morphological characters to attempt to explain their interspecific relationships and distribution patterns. That analysis resulted in the placement of *Leptodactylus validus* in the synonymy of *L. wagneri.* Subsequently, specimens from additional localities became available and *L. validus* was again recognized as a valid taxon, and included in the *podicipinus-wagneri* complex (Heyer, 1994). This complex currently consists of 13 species whose interspecific relationships are not well understood.

Leptodactylus validus was first described by Garman (1887) from Kingston, St. Vincent based on a series of specimens with no designation of a single specimen as the holotype. Subsequently, Heyer (1970) designated MCZ 2185 from Kingston St. Vincent as the lectotype of *Leptodactylus validus* Garman. The distribution of *L. validus* includes Trinidad, Tobago, and the Lesser Antillean islands of Bequia, Grenada, and St. Vincent. Males range in size between

30-45 mm SVL while females range between 38-56 mm (Heyer, 1994; Murphy, 1997). *Leptodactylus validus* is distinguished from other sympatric members of the genus by its lack of long dorsolateral folds and, in some cases, the presence of a discernable lip stripe extending posteriorly from the eye to the angle of the mouth (Heyer, 1994). A terrestrial species, *L. validus* is often found among leaf litter or debris in or near forests, along heavily shaded streams and gullies, within caves, or roadside ditches where adequate cover is available (Johnson, 1946; Kenny, 1969; Downie, 1996; Murphy, 1997). Breeding occurs during the heavy summer rains and mating takes place in ponds, drainage ditches, or temporary flooded forest areas (Kenny, 1969; Downie, 1996; Murphy, 1997; Germano et al., 2003). Eggs are deposited in foam nests produced from oviduct secretions by the female. Foam nests are constructed along the edges of pools but also may be free floating and subsequently covered by dead vegetation such as leaves or sticks (Kenny, 1969; Downie, 1996). Within 2.5-5 days, the larvae hatch and remain in contact with the mucus at the base of the nest (Kenny, 1969; Downie, 1996). Soon after, the tadpoles form tight shoals and spend much of their time near the surface (Downie, 1996). Parental care in *L. validus* has been observed with females remaining with the nests and shoals of tadpoles for some time after hatching (Downie, 1996). Metamorphosis usually occurs within 8 weeks (Kenny, 1969). The advertisement call of *L. validus* has a broadcast frequency range of 1300-3500 Hz with maximum energy between 2300-3500 Hz. It usually consists of two notes lasting 0.03-0.06 seconds in duration at a rate of 1.1-1.9 calls per second (Heyer, 1994).

Slight morphological variation exists between adult populations from the Lesser Antilles and those from Trinidad and Tobago. Additionally, the descriptions of *L. validus* tadpoles from Trinidad, Tobago, and St. Vincent differ drastically (Heyer, 1994), however the number of larvae in collections is limited. Heyer (1994) suggested that the tadpole from Trinidad described by Kenny (1969), may have been misidentified, and might belong to a genus other than *Leptodactylus.* Furthermore, the identification of larval specimens from St. Vincent and Tobago were based upon known adult occurrences in the areas where they were collected, not on positive identification of an adult female associated with them, or from a developmental series. Therefore, the validity of these descriptions is also questionable (Heyer, 1994). If the larval specimens from the three islands indeed correspond to *L. validus*, enough variation exists to suggest that *L. validus* may represent more than one taxon, with *L. validus* occurring on the Lesser Antilles and a second, distinct, and closely related species endemic to Trinidad and Tobago (Heyer, 1994).

Available call data for *L. validus* from Trinidad and Tobago is similar to calls analyzed from Venezuelan populations of *L. pallidirostris*, another species within the *L. podicipinus-wagneri* complex. This suggests that at least some populations of *L. pallidirostris* may be conspecific with *L. validus*, extending the distribution of *Leptodactylus validus* to include the mainland of South America. *Leptodactylus pallidirostris* is distributed throughout Venezuela, Guyana, Suriname, French Guiana, and northern Brazil, however the only available call data comes from Brazil and Venezuela (Heyer, 1994).

Heyer (1994) found extensive interspecific and intraspecific morphological variation within the *Leptodactylus podicipinus-wagneri* complex; this variation limits the use of morphology to decipher relationships. The analysis of mitochondrial DNA (mtDNA) sequence data has become a powerful tool frequently implemented to depict evolutionary relationships in systematics. MtDNA is useful because it is maternally inherited, has a relatively rapid rate of evolution, and its genes are relatively easy to amplify and sequence (Avise, 1986, 1994, 2000; Wilson et al., 1985; Moritz et al., 1987). Additionally, differing natural selection pressures on a population's external phenotype may have a significant impact on a phylogeny obtained using morphological characters, while this is less likely to occur using mtDNA sequence data (Wüster et al., 2002). The mitochondrial ribosomal RNA (mt rRNA) genes are particularly useful in addressing divergences that have occurred within the past 100 million years among closely related taxa.

Herein sequence data from the small (12S) and large (16S) subunit mt rRNA genes were collected and analyzed in order to address: 1.) whether more than one species is represented within *L.*

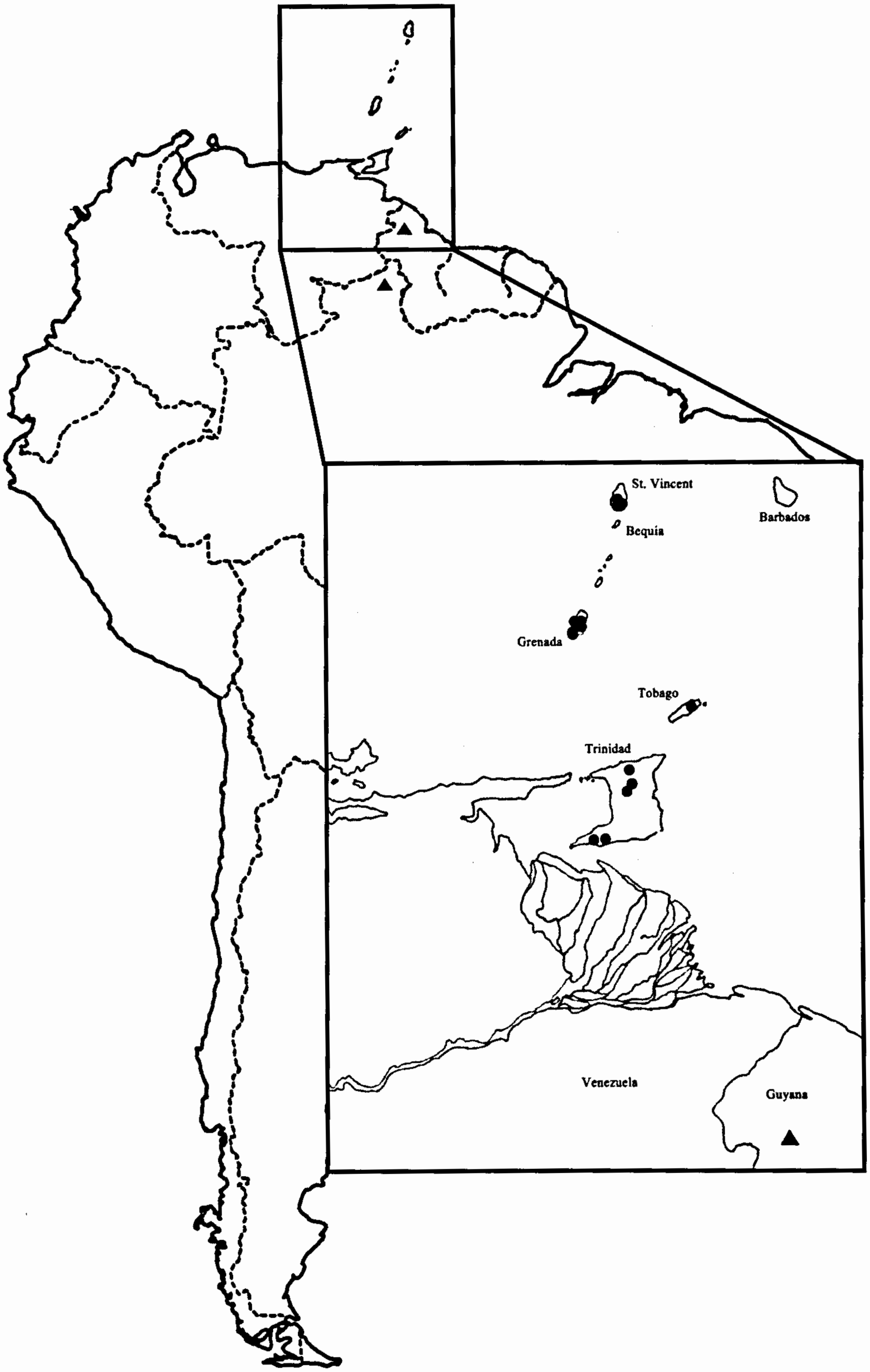
validus, and 2.) to determine if at least some populations currently recognized as *L. pallidirostris* are conspecific with *L. validus*.

Materials & Methods

Frozen tissue samples (liver and muscle) of *Leptodactylus validus* from Trinidad (n=15), Tobago (n=2), and the Lesser Antillean Islands of St. Vincent (n=13), and Grenada (n=20) in addition to *L. pallidirostris* samples (from Brazil n=1 and Guyana n=1) were included in this study (Fig. 1). Samples from two additional taxa belonging to the *L. podicipinus-wagneri* complex were also included as ingroup samples: *L. podicipinus* (from Brazil n=4) and *L. wagneri* (from Brazil n=1 and from Ecuador n=2). *Leptodactylus chaquensis* (n=1) (*L. ocellatus* species group) and *L. knudseni* (n=1) (*L. pentadactylus* species group) were used as outgroups. Locality data for the samples examined are provided in Appendix I.

DNA isolation, amplification, and purification. — DNA was isolated following protocols of Hillis et al. (1996). Tissues were mechanically broken down and incubated at 55°C with proteinase K (10mg/ml), 10% SDS, and STE. Following incubation, DNA was extracted twice with Phenol: Chloroform: Isoamyl alcohol (25:24:1) and two subsequent extractions were performed with chloroform.

Figure 1. Map of localities where samples of *L. pallidirostris* (triangles) and *L. validus* (circles) used in this study were collected.


St. Vincent
Barbados
Bequia
Grenada
Tobago
Trinidad
Venezuela
Guyana

DNA was precipitated with cold absolute ethanol and 2M NaCl. The supernatant was discarded and the pellet resuspended in 1X TE buffer (pH 7.5). Isolated DNA samples (5μm) were run in 0.8% agarose gels, at 50v, followed by staining with ethidium bromide, and illumination under UV light to assess DNA quality. Fragments of mitochondrial DNA (mtDNA) from the 12S and 16S mt rRNA genes were amplified using polymerase chain reaction (PCR; Palumbi, 1996) in an MJ Research PTC-200 thermocycler and a Stratagene SCS-2 temperature cycler. Double stranded amplifications of nearly the complete 12S (~880 base pairs) and 16S (~1,500 bp) rRNA genes were amplified using four sets of primers (Goebel et al., 1999). Primer sequences are presented in Table I. PCR reactions for the first ~570 bp of the 12S gene were performed using the primers 12S tphef and 12S Rds1 with JumpStart Taq DNA Polymerase (Sigma). PCR reactions consisted of a 2.5-min denaturation at 94°C, 1-minute of annealing at 55°C, and a 2-min extension at 72°C, followed by 30 cycles of a 1-min denaturation at 94°C, 1 minute of annealing at 55°C, and an extension period of 1.5-min at 72°C. A second set of primers (12SA-L and 12SB-H), were used in conjunction with PCR Master Mix (Promega) to amplify a 12S gene fragment of ~390 bp in length, beginning approximately 80 bp prior to the end of the region amplified by the 12S tphef/Rds1 primers. The conditions under which PCR reactions were conducted differed from those described above only by a lower annealing temperature (53°C).

The primer 12L13 (Feller and Hedges, 1998), which attaches to a region near the end of the 12S rRNA gene, and Hedges 16H10 (Hedges, 1994) were used to amplify a segment of the 16S rRNA gene approximately 1,030 bp in length using Master Mix (Promega). PCR conditions consisted of a 2-minute denaturation at 94°C, a 1-min annealing period at 50°C and a 72°C extension for 1.5-min, followed by 34 cycles of a 1-min denaturation at 94°C, 1-min of annealing at 50°C, and a 1.5-min extension at 72°C. An additional 550 bp of the 16S gene were amplified in both directions using the primers 16SaR-L and 16Sd with Master Mix (Promega), which overlapped the end of the L13/H10 fragment by approximately 70 bp. Reaction conditions were identical to those implemented for 12L13/Hedges 16H10. Amplified products were purified using the

Wizard Plus Miniprep DNA Purification System (Promega) and suspended in 1X TE buffer.

Sequencing. — Purified templates were sequenced using SequiTherm Excel II DNA sequencing kits (Epicentre) in an MJ Research PTC-200 thermocycler. Single-stranded sequencing reactions were performed using primers labeled with an infrared fluorescent dye (5' IRD800; Li-Cor). The primers used for sequencing reactions were identical in sequence to those used for amplification except 16Sd, which was replaced by the primer 16SbR-H (Palumbi et al., 1991, Table I). Sequencing reactions consisted of a 2.5-min denaturation at 95°C, followed by 30 cycles of a 30 second denaturation at 95°C, 30 seconds of annealing at 58°C, and 30 seconds of extension at 70°C. Reaction products for gene fragments < 650 bp in length were run on 44 cm long 6% acrylamide gels, whereas those exceeding 650 bp were run on 66 cm long 4% acrylamide gels. Gels were .25 mm in thickness and sequences were collected using a Li-Cor 4000L automated DNA sequencer.

Sequence Alignment. — Image data from each single strand sequence along with the chromatographs constructed by the

BaseImagIR Ver.4.2 software (Li-Cor Biotechnology Division) were imported into the software program AlignIR (Li-Cor Biotechnology Division) and aligned with their complimentary sequence. For each strand, bands from the aligned image files and their corresponding chromatographs were visually inspected for mismatches and corrected. Amended sequences from all samples were compiled into a data matrix and aligned with ClustalX (Thompson et al., 1997) using the multiple alignment option. Alignment ambiguities were improved manually considering the criterion of parsimony when possible and through inference of secondary structure (Kjer, 1995; Hickson et al., 1996).

Phylogenetic analyses. — Phylogenetic analyses were inferred for both the independent as well as the combined data sets using PAUP* 4.0b10 (Swofford, 2002). In order to reduce computation time, groups of samples sharing identical sequences were represented by a single sample. Pair-wise genetic distances were calculated under the general time reversible model with gamma distributed rate variation. Saturation of nucleotide substitutions among samples in an alignment can affect the estimation of evolutionary distances and potentially result in misleading tree topologies (Swofford et al., 1996; Page and Holmes, 1998; Nei and Kumar, 2000; de Peer et al., 2002). To investigate levels of substitutional saturation, pair-wise uncorrected p-distances were plotted against corrected pair-wise genetic distances using general time reversible distances with and without gamma correction for variable sites, (see below) and examined for departure from a linear relationship. Additionally, the high rate of transitional mutations relative to transversions that occur in mitochondrial genes can result in saturation of transitional sites (Brown et al., 1982; Moriyama and Powell, 1997; Wakely, 1996; de Peer et al., 2002). To assess levels of saturation for transitional substitutions, pair-wise uncorrected *p*-distances were plotted against Kimura 2-paramerer (K2p) distances. The extent to which scatter plots deviate from the x=y line indicates the relative degree of saturation.

Maximum parsimony (MP) analyses were performed under heuristic algorithms with accelerated character transformation optimization (ACCTRAN) and delayed character transformation optimization (DELTRAN) using the tree-bisection reconnection (TBR) branch swapping option. Bases were treated as unordered character states; gaps were treated alternatively as missing data or as a fifth character state, considering that insertions or deletions (indels) also represent informative evolutionary changes (Simmons and Ochoterena, 2000; Simmons et al., 2001). Weighted analyses were performed in which transversional (tv) changes were assigned weights twice that of transitions (ti). Using the 12S and 16S rRNA secondary structure models for *Xenopus laevis* (Cannone et al., 2002), stem and loop positions were defined and additional MP and maximum likelihood (ML) analyses were performed on all three datasets assigning loop positions twice the weight as stem positions. In instances where more than one most parsimonious tree was obtained, strict and 50% majority rule (50% MR) consensus trees were constructed. Statistical stability of internal branches was assessed via nonparametric bootstrapping (Felsenstein, 1985) based on 1000 pseudoreplicates (50% MR, heuristic search).

The program Modeltest (Ver. 3.06) (Posada and Crandall, 1998) was used to select the best-fitted model of sequence evolution for each dataset, as well as likelihood parameter settings to be implemented in ML (Fisher, 1922; Felsenstein, 1981) analyses using PAUP*. Hierarchical Likelihood Ratio Tests (hLRTs) resulted in the selection the Tamura-Nei model (1993) with among-site rate heterogeneity (TrN+G) for all datasets. Using Akaike Information Criterion (AIC) (Bozdogan, 1987), Modeltest selected the General Time Reversible Model (Rodriguez et al. 1990) with invariant sites and gamma-distributed rate heterogeneity (GTR+I+Γ) for the 12S and combined datasets, while the General Time Reversible Model with gamma-distributed rate variation across sites (GTR+Γ) was selected for the 16S dataset. For ML analyses heuristic searches were conducted using TBR branch swapping and nonparametric bootstrapping (100 pseudoreplicates, 50% majority rule). Bootstrap values 75% and greater were considered strongly supported, between 55% and 74% weak support, and values below 55% were considered low or poorly supported.

Additional likelihood analyses were performed based on Bayesian inference using MrBayes (Ver. 3.0b4) (Huelsenbeck and Ronquist. 2001). Bayesian inference uses Markov Chain Monte Carlo (MCMC) algorithms to estimate the posterior probabilities of the best set of trees based on the evolutionary model specified. The model of sequence evolution employed for each dataset was selected using Modeltest under AIC. The number of substitution types was set to 6, enabling the rates to vary, thus being subject to the constraint of time-reversibility (Tavare, 1986). Seven simultaneous MCMC chains were run in order to determine the number of samples to discard based on convergence of log-likelihood values. Analyses were initiated using randomly selected starting trees, and topologies were sampled every 10 generations for 2.0×10^6 generations. The resulting 50% majority-rule consensus tree was rooted using the outgroup taxa in PAUP*. For the Bayesian analyses, credibility values for a clade were considered statistically significant when posterior support values were ≥ 99%.

Results

In all analyses using the 12S, 16S, as well as the combined datasets, *Leptodactylus validus* and *L. pallidirostris* formed a monophyletic group. *Leptodactylus wagneri* samples formed a separate clade, as did the *L. podicipinus* samples. Additionally, pair-wise genetic distances were < 1% among the *L. validus* and *L. pallidirostris* samples in all datasets. In instances where separate analyses yielded identical tree topologies for a specified dataset, bootstrap support values for the depicted clades were within 11% of those indicated in the figures.

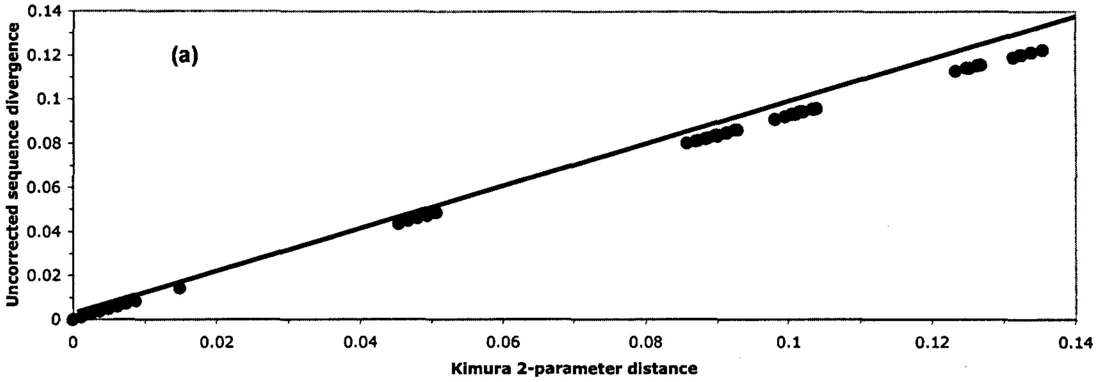
12S rRNA gene

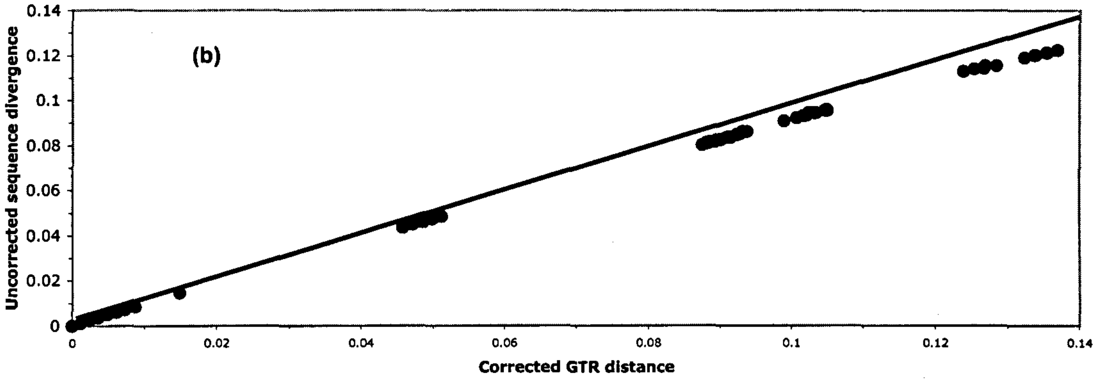
Sequence divergence.— Analysis of the *Leptodactylus validus* sequences grouped the 50 individuals into five separate haplotypes (Table II). Among the haplotypes scored, five (0.6%) sites were variable within *L. validus.* Haplotype A includes samples from Grenada (n=9), St. Vincent (n= 8), Trinidad (n=1), as well as the Tobago samples (n=2). Haplotype B includes samples from Grenada (n=11), St. Vincent (n=5), and Trinidad (n=11). Haplotypes C, D, and E each consist of a single sample from Trinidad. The aligned 828 bp fragment of the 12S rRNA gene (Appendix II) correspond to the homologous region between positions 2205–2904 of the *Xenopus laevis* mitochondrial genome (Roe et al., 1985; Gen-Bank no.: M10217), however, adjustments in the numbering scheme were made to incorporate the more accurate model as described by (Dunon-Bluteau and Brun, 1986). Base frequencies for the ingroup and outgroup taxa are presented in Table III. Corrected pair-wise genetic distances among *L. validus* samples were between 0–0.49%. The two *L. pallidirostris* samples differed by 0.25%. Genetic distances between the *L. pallidirostris* and *L. validus* samples ranged from 0.12–0.62%. Genetic distances among samples of *L. podicipinus* were between 0.12–0.88% and ranged between 10.51–11.15% when compared with *L. validus/pallidirostris.* Distances among samples of *L. wagneri* were 0.24–1.52% and 5.04–5.72% between *L. validus/pallidirostris.* Distances between *L. validus/pallidirostris* and the outgroups ranged between 12.19–12.81% compared with *L. chaquensis* and 16.93–17.5% with *L. knudseni.* Corrected pair-wise genetic distances are presented in

Table IV and absolute base differences among samples are provided in Table V. Plots of pair-wise uncorrected p-distances versus K2p distances were nearly linear, indicating a low degree of transitional saturation (Fig. 2a). Similarly, the comparison of uncorrected p-distances with corrected GTR divergences did not reveal saturation of base substitutions (Fig. 2b). However, in the comparison of uncorrected p-distances with corrected GTR+Γ distances, the scatter plot points began to depart from the diagonal at higher levels of sequence divergence (Fig. 2c).

Maximum parsimony analyses. — Maximum parsimony analysis of the 12S data considering gaps as missing data resulted in thirty equally parsimonious trees 220 steps long (L =220) with consistency indices of 0.854 (CI=0.854). Of the 828 aligned bp sequenced, 159 (19.2%) characters were variable and 102 (12.3%) were parsimony-informative. In all trees, *L. pallidirostris* and *L. validus* formed a monophyletic group with 100% support in the strict consensus tree (Fig. 3). Within this clade, a subclade consisting of haplotypes B and D was recovered with poor support. Relationships among the other samples were unresolved. An

Figure 2. Plots depicting relative rates of (a) transitional saturation and (b) substitutional saturation using pair-wise genetic distances corrected under the GTR and (c) GTR+Γ evolutionary models among 12S gene sequences.


(a)
Uncorrected sequence divergence
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
Kimura 2-parameter distance


(b)
Uncorrected sequence divergence
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
Corrected GTR distance

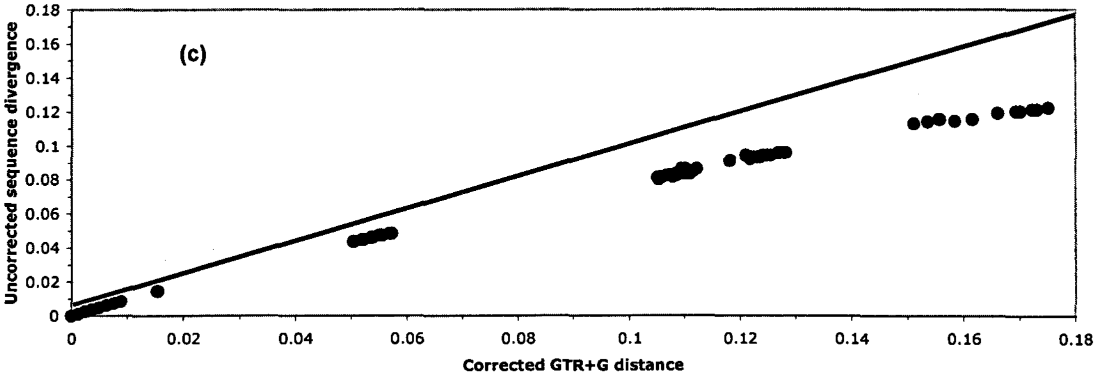
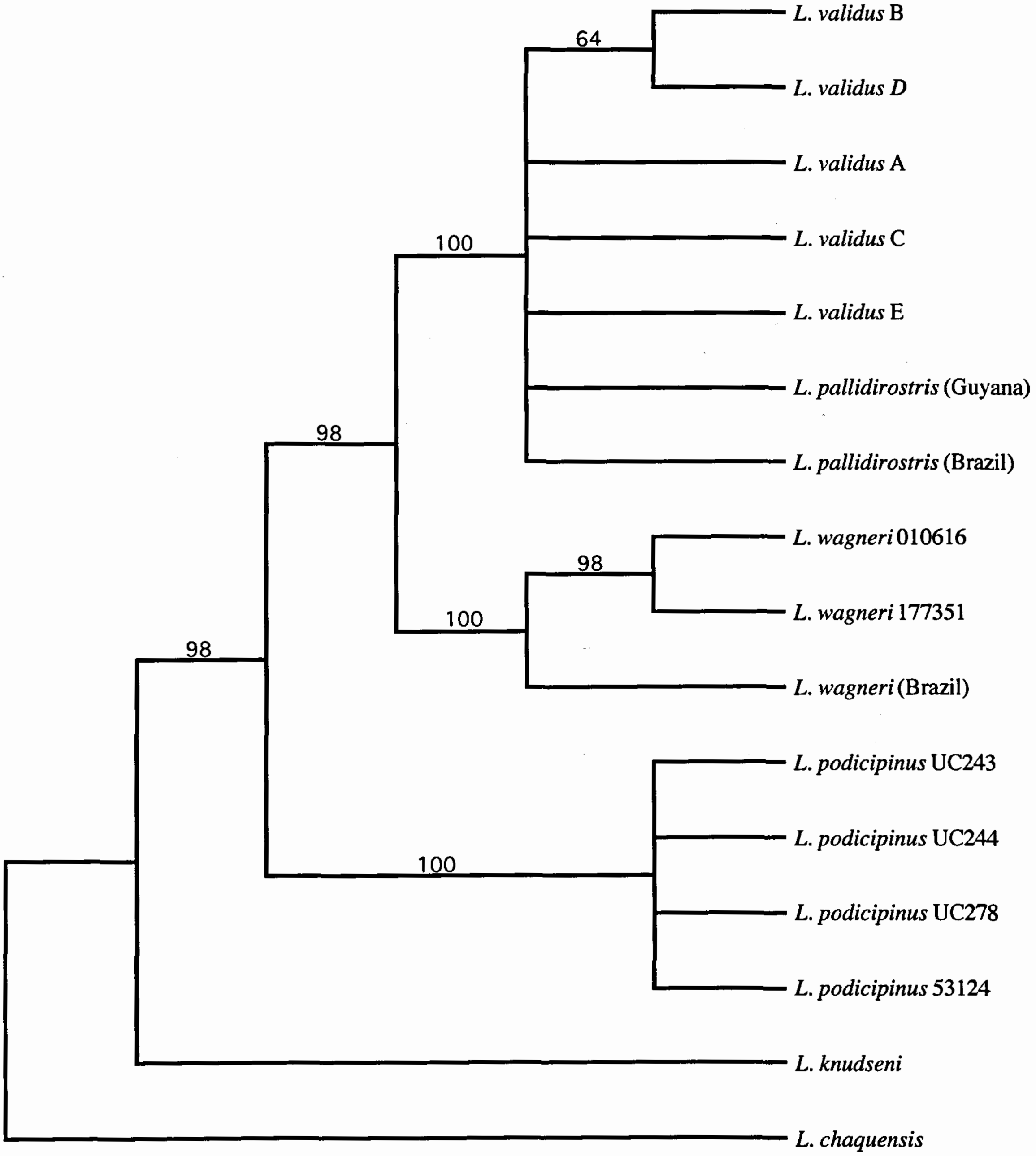

(c)
Uncorrected sequence divergence
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
Corrected GTR+G distance

Figure 3. Consensus tree (50% MR) topology obtained in all MP analyses, unweighted ML analysis under the TrN+Γ evolutionary model, and both weighted ML analyses for the 12S gene. Bootstrap values shown above branches correspond to those observed in the MP analysis considering gaps as missing data. See text for clade descriptions.


L. validus B
L. validus D
L. validus A
L. validus C
L. validus E
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
64
100
98
98
100
98
100

analysis considering gaps as a fifth character state recovered thirty minimum-length trees (L =226; CI=0.858; 162 [19.6%] variable characters and 107 [12.9%] parsimony-informative). The strict consensus tree was identical to the tree presented in Fig. 3.

Weighted maximum parsimony analyses. — An analysis weighting transversions to transitions (tv:ti, 2:1), recovered thirty equally parsimonious trees (L=288; CI=0.854; 159 [19.2%] variable characters and 103 [12.4%] parsimony-informative). Weighting loop positions (n=380, weight=2) to stem positions (n=448, weight=1) and considering gaps as missing data, resulted in thirty minimum-length-trees (L=350; CI=0.843; 159 [19.2%] variable characters and 102 [12.3%] parsimony-informative). Using gaps as a fifth character state under the same weighting scheme, thirty equally parsimonious trees were obtained (L=362; CI=0.848; 162 [19.6%] variable characters and 107 [12.92] parsimony-informative). The strict consensus trees obtained in all weighed analyses shared topologies identical to that of the unweighted tree (Fig. 3).

Maximum likelihood analyses. — Maximum likelihood analysis of the 12S dataset implemented under the TrN+G model parameters resulted in a bootstrap 50% Majority Rule (MR) consensus tree with a topology identical to those obtained in the MP analyses (Fig. 3). The 50% MR consensus tree obtained using the GTR+I+Γ model parameters resulted in a similar tree, in which a second subclade consisting of the *L. pallidirostris* specimens was present with low support (Fig. 4). ML analyses considering secondary structure and weighting loop:stem positions (2:1), using both evolutionary models resulted in bootstrap 50% MR consensus trees identical to the tree presented in Fig. 3.

Bayesian analysis. — A Bayesian analysis was performed using the GTR+I+Γ model of sequence evolution. Convergence of the Log likelihood values among the seven MCMC chains occurred within 15,000 generations of sampling, consequently the burn-in value was set to discard the first 1,500 trees sampled. The consensus tree obtained by MrBayes (Fig. 5) was similar, but slightly better resolved than those obtained in the MP and ML analyses. *Leptodactylus validus* and *L. pallidirostris* formed a monophyletic group with 100% support. Furthermore, *L. pallidirostris* and *L. validus* samples formed exclusive monophyletic groups, however these clades had

Figure 4. Unweighted 12S ML tree obtained using the GTR+I+Γ evolutionary model. Bootstrap values are shown above branches. See text for clade descriptions

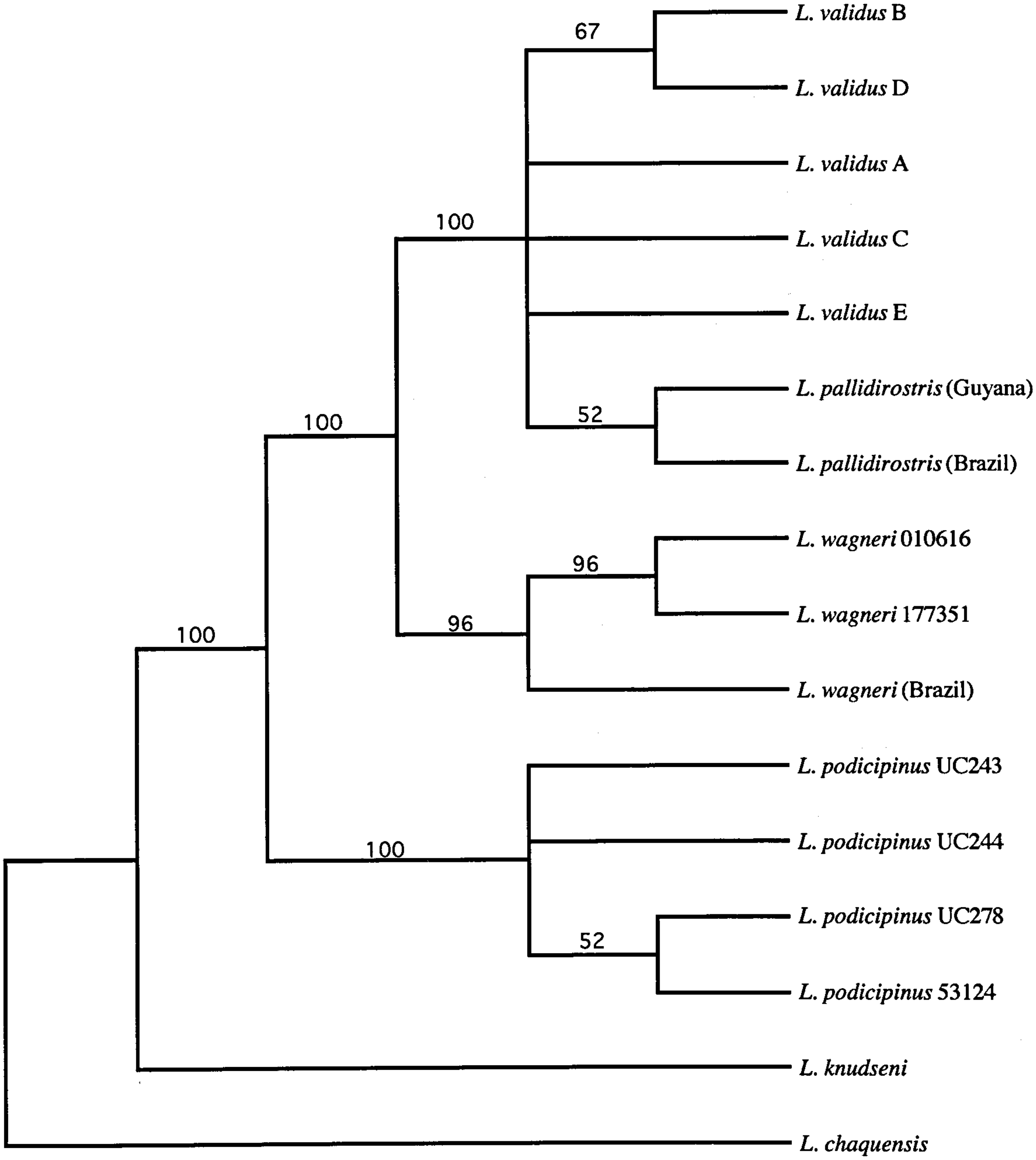
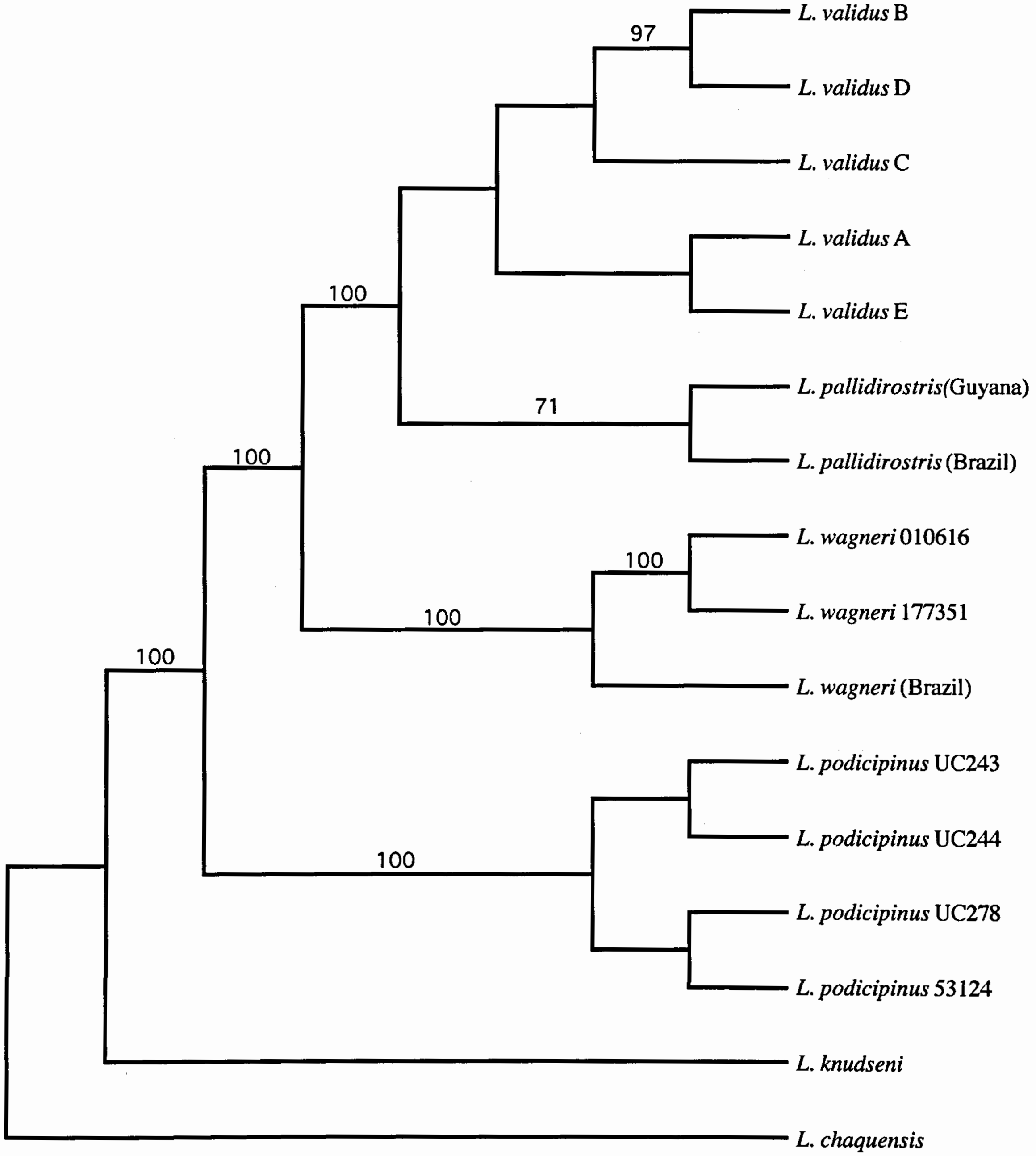

67
100
100
100
52
96
96
100
52
L. validus B
L. validus D
L. validus A
L. validus C
L. validus E
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

Figure 5. Bayesian consensus tree of 12S gene. Posterior probability values >50% are shown above branches. See text for clade descriptions.

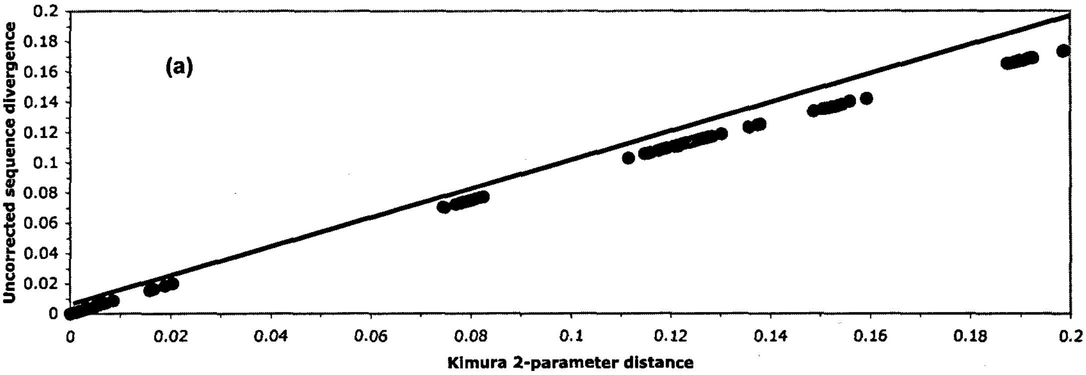

97
100
71
100
100
100
100
100
L. validus B
L. validus D
L. validus C
L. validus A
L. validus E
L. pallidirostris(Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

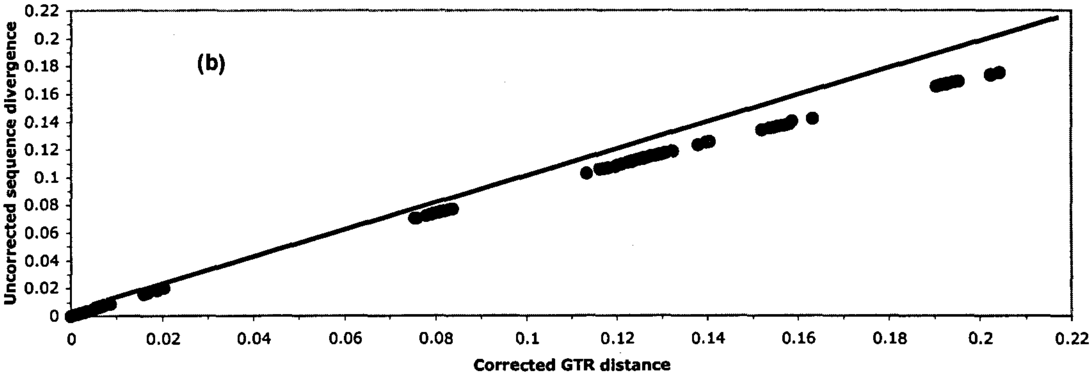
low posterior support.

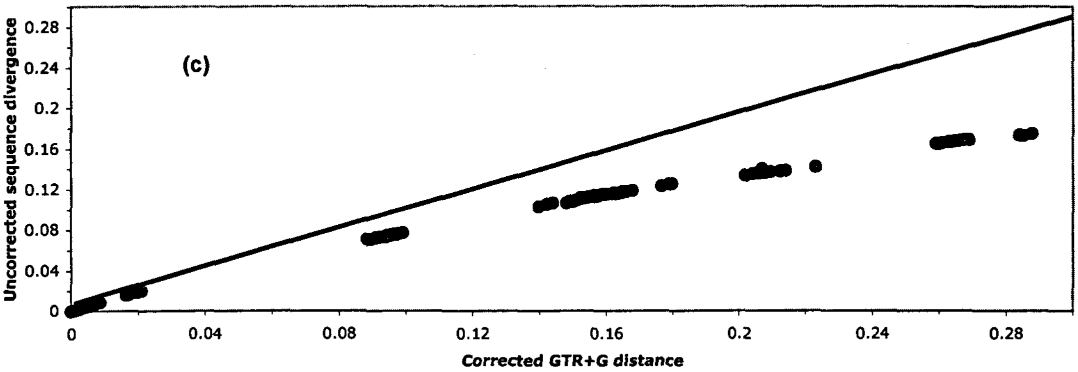
16S rRNA gene

Sequence divergence.— Analysis of the 16S sequences grouped the 50 *Leptodactylus validus* samples into seven haplotypes (Table VI). The haplotypes scored showed eleven (0.78%) variable sites among the *L. validus* samples. Haplotype A includes all of the samples from Grenada (n=20) and St. Vincent (n=13). Haplotype B consists of samples from Trinidad (n=11), and haplotype C contains the samples from Tobago (n=2). Haplotypes D–G each consist of a single sample from Trinidad. The aligned 1419 bp fragment of the 16S rRNA gene correspond to positions 3093–4548 in the *Xenopus laevis* genome (Roe et al., 1985; Gen-Bank no.: M10217). A portion of the 16S gene containing multiple indels could not be unambiguously aligned. Subsequently, the 28 bp region was excluded from the analyses (Appendix II). Base frequencies for the ingroup and outgroup taxa are presented in Table VII. Corrected pair-wise genetic distances among *L. validus* samples ranged from 0–0.36%. The two *L. pallidirostris* samples differed by 0.51%. Genetic distances between the *L. pallidirostris* and *L. validus* samples ranged from 0.14–0.73%. Genetic distances among samples of *L. podicipinus* were between 0–2.1% and ranged between 15.22–16.79% when compared with *L. validus/pallidirostris*. Distances among samples of *L. wagneri* were 0.22–1.73% and 8.84–9.92% when compared with *L. validus/pallidirostris*. Distances between *L. validus/pallidirostris* and the outgroups ranged between 20.2–20.96% when compared with *L. chaquensis* and 25.93–26.75% with *L. knudseni*. Corrected pair-wise genetic distances are presented in Table VIII and absolute base differences among samples are provided in Table IX. Plots of pair-wise uncorrected p-distances versus K2p distances were nearly linear, indicating a low degree of transitional saturation (Fig. 6a). Similarly, the comparison of uncorrected p-distances with corrected GTR divergences did not reveal saturation of base substitutions (Fig. 6b). However, in the comparison of uncorrected p-distances with corrected GTR+Γ distances, the scatter plot points began to depart from the diagonal at higher levels of sequence divergence (Fig. 6c).

Figure 6. Plots depicting relative rates of (a) transitional saturation and (b) substitutional saturation using pair-wise genetic distances corrected under the GTR and (c) GTR+Γ evolutionary models among 16S gene sequences.


(a)
Uncorrected sequence divergence
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Kimura 2-parameter distance
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2


(b)
Uncorrected sequence divergence
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.22
Corrected GTR distance
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.22


(c)
Uncorrected sequence divergence
0
0.04
0.08
0.12
0.16
0.2
0.24
0.28
Corrected GTR+G distance
0
0.04
0.08
0.12
0.16
0.2
0.24
0.28

Maximum parsimony analyses.— Maximum parsimony analysis of the 16S data considering gaps as missing data resulted in a single tree (L=544, CI=0.849) (Fig. 7). Of the 1419 unambiguously aligned bp sequenced, 368 (25.9%) characters were variable and 244 (17.2%) were parsimony-informative. *Leptodactylus validus* and *L. pallidirostris* formed a monophyletic group with 100% bootstrap support. Within this clade, the *L. pallidirostris* sample from Brazil appeared basal to a strongly supported clade that united the *L. pallidirostris* sample from Guyana with a weakly supported *L. validus* subclade. An analysis considering gaps as a fifth character state recovered four minimum-length trees (L=588; CI=0.842; 387 [27.3%] variable characters and 261 [15.2%] parsimony-informative). Topology of the strict consensus tree (Fig. 8) was similar to that of the previous analysis however, the *L. pallidirostris* from Guyana forms an unresolved polytomy with the *L. validus* samples.

Weighted maximum parsimony analyses.— An analysis applying a 2:1 (tv:ti) weighting scheme recovered a single tree (L=751; CI=0.856; 368 [25.9%] variable characters and 249 [17.6%]

Figure 7. Consensus tree (50% MR) topology obtained for the 16S data in both unweighted MP analyses, weighted tv:ti and stem-loop MP analyses using gaps as missing data, and weighted ML analysis using the GTR+Γ evolutionary model. Bootstrap values shown above branches correspond to those observed in the unweighted MP analysis considering gaps as missing data. See text for clade descriptions.

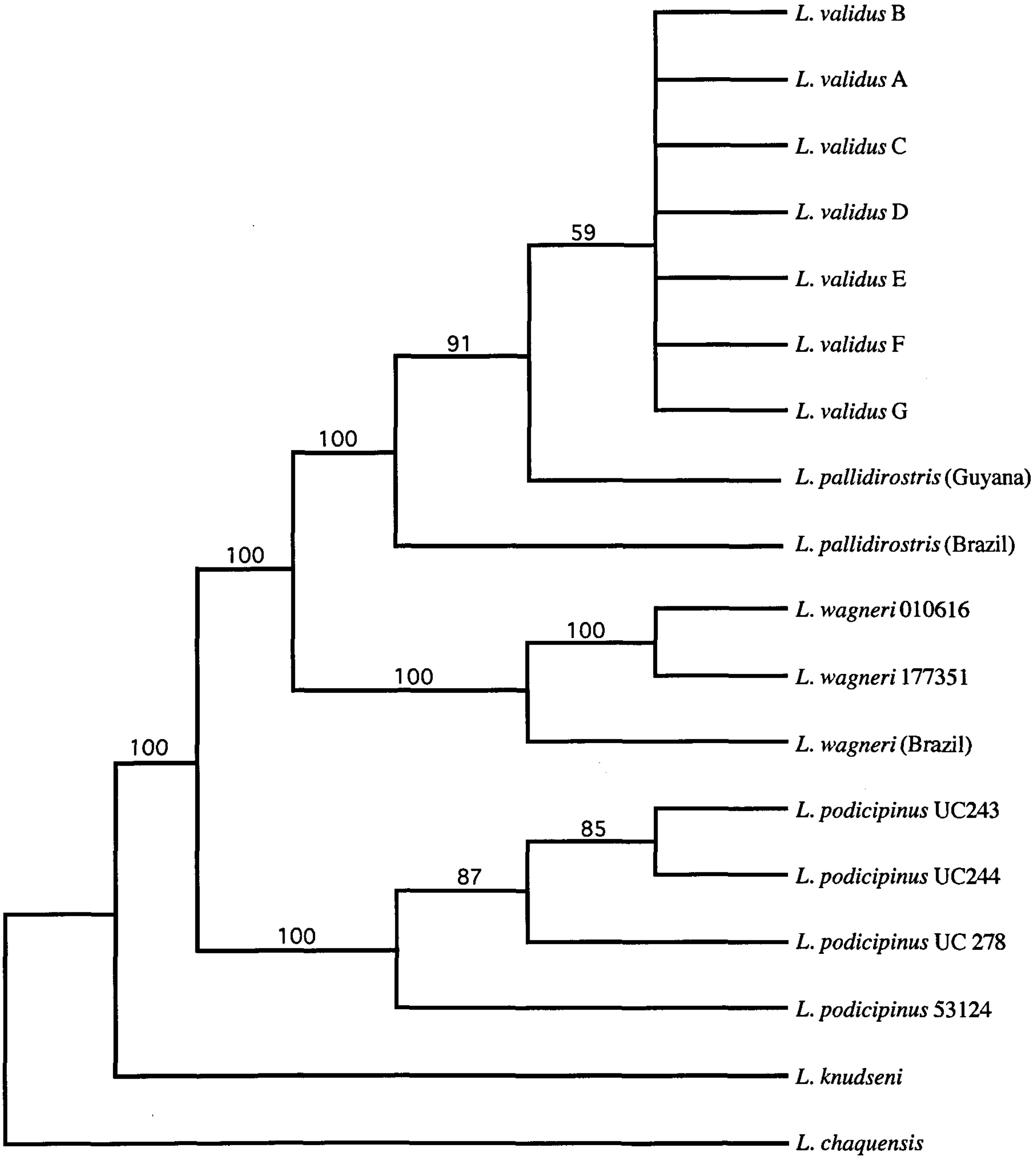
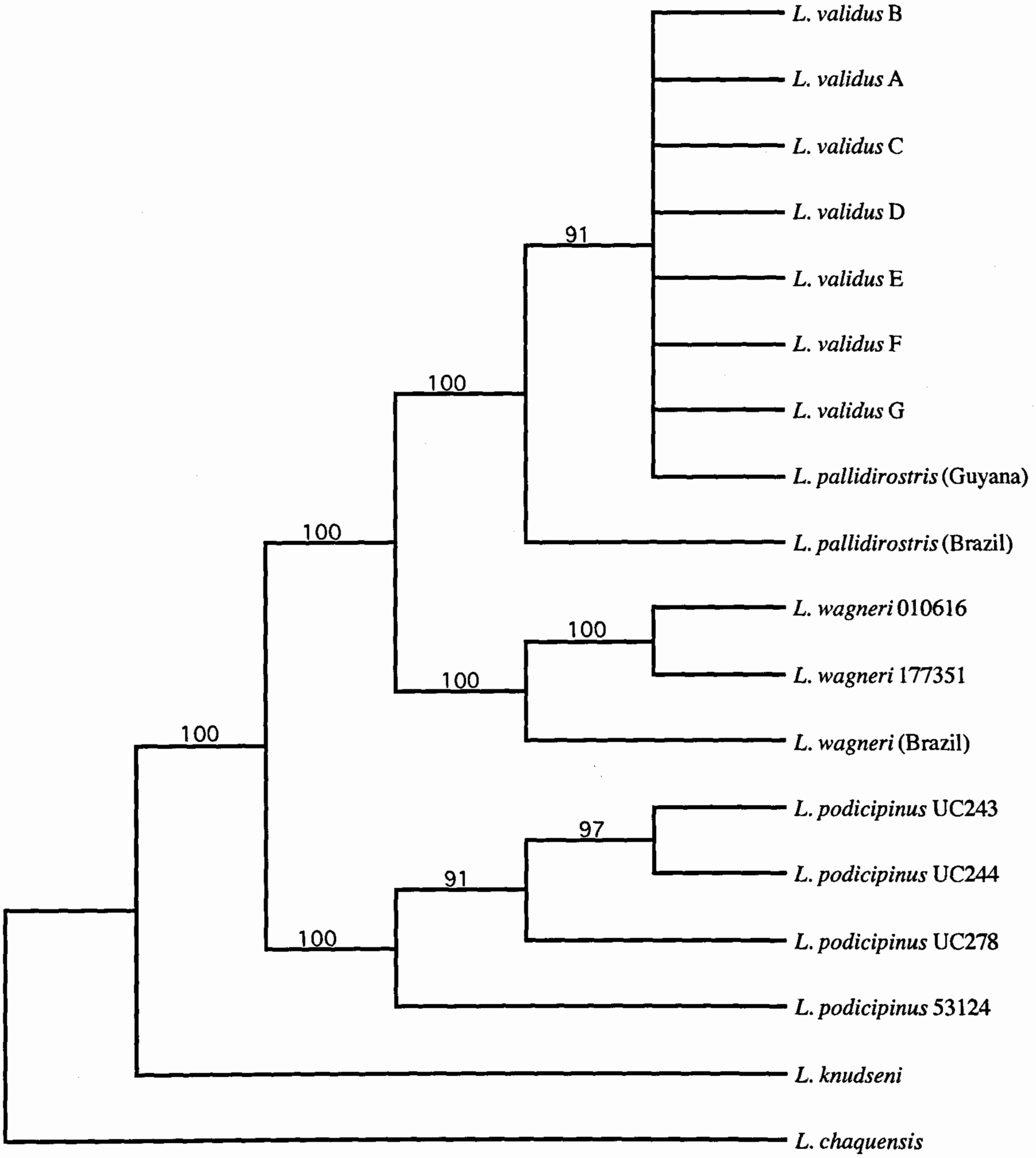

L. validus B
L. validus A
L. validus C
L. validus D
L. validus E
L. validus F
L. validus G
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC 278
L. podicipinus 53124
L. knudseni
L. chaquensis
59
91
100
100
100
100
100
100
85
87
100

Figure 8. Consensus tree (50% MR) topology obtained for the 16S data in unweighted MP analysis considering gaps as a fifth character state and the weighted ML analysis performed under the TrN+Γ evolutionary model. Bootstrap values shown above branches correspond to those observed in the unweighted MP analysis considering gaps as a fifth character state. See text for clade descriptions.


L. validus B
L. validus A
L. validus C
L. validus D
L. validus E
L. validus F
L. validus G
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
91
100
100
100
100
100
97
91
100
100

parsimony-informative). Weighting loop positions (n=755) to stem positions (n=664) and considering gaps as missing data also resulted in a single tree (L=917; CI=0.855; 368 [25.9%] variable characters and 244 [17.2%] parsimony-informative). Topologies of the trees from these analyses were identical to the one presented in Fig. 7. Using gaps as a fifth character state under the same weighting scheme, a single tree was obtained (L=1004; CI=0.847; 387 [27.3%] variable characters and 261 [18.4%] parsimony-informative). The strict consensus tree was similar to the one depicted in Fig. 8 with the addition of a subclade formed by the *L. pallidirostris* sample from Guyana and two *L. validus* samples from Trinidad (Fig. 9).

Maximum likelihood analyses.— Maximum likelihood analysis under the TrN+G model parameters resulted in a bootstrap 50% MR consensus tree topology similar to the one depicted in Fig. 7, with less resolution within the *L. podicipinus* clade (Fig. 10). A similar tree was obtained under the GTR+Γ model parameters, with relationships among samples within the *L. podicipinus* clade differing slightly (Fig. 11). ML analysis considering secondary

Figure 9. Weighted MP tree obtained for the 16S data using gaps as a fifth character state. Bootstrap values are shown above branches. See text for clade descriptions.

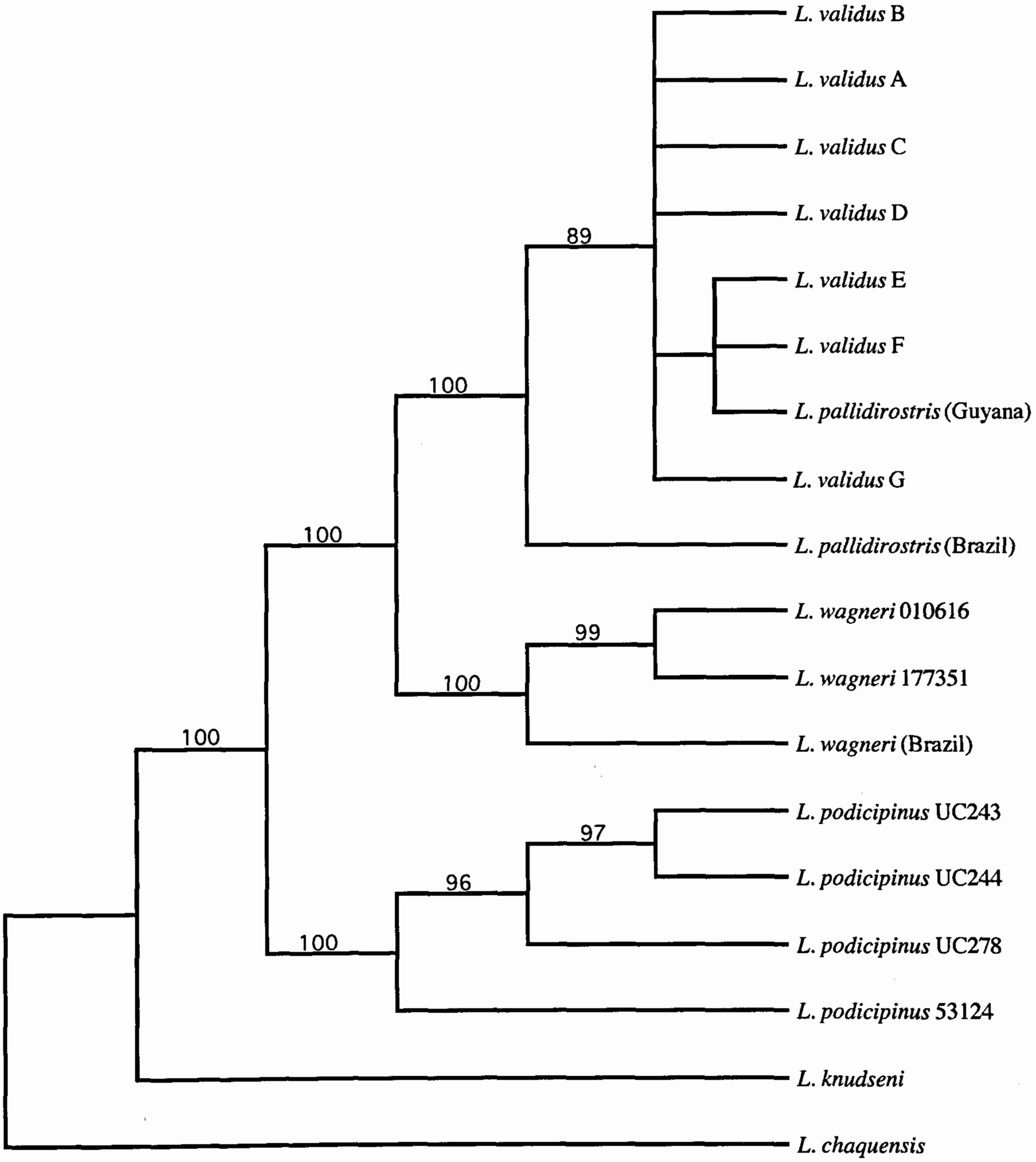

L. validus B
L. validus A
L. validus C
L. validus D
L. validus E
L. validus F
L. pallidirostris (Guyana)
L. validus G
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
89
100
100
100
99
100
97
96
100

Figure 10. Unweighted ML tree obtained for the 16S data using the TrN+Γ evolutionary model. Bootstrap values are shown above branches. See text for clade descriptions.

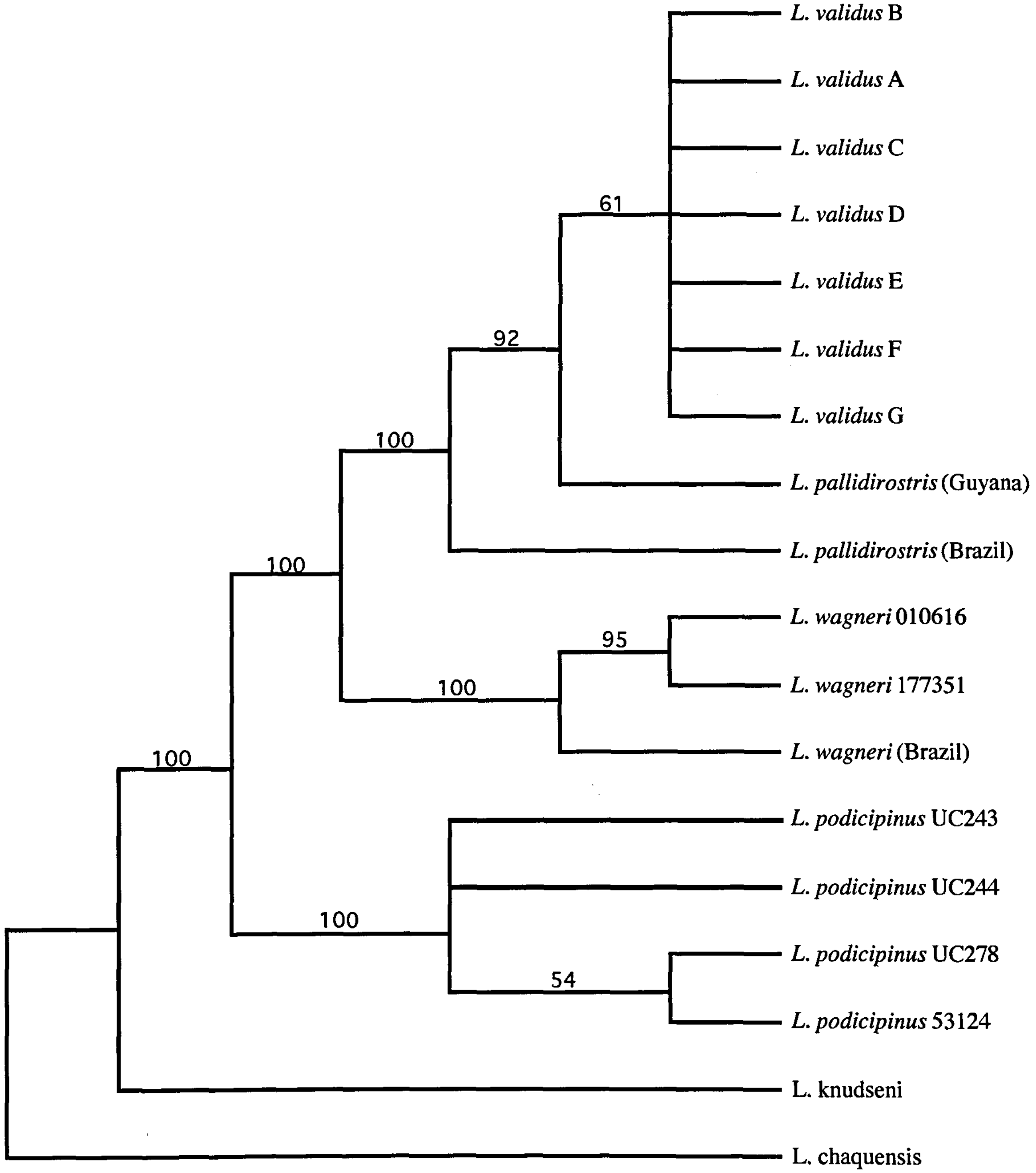
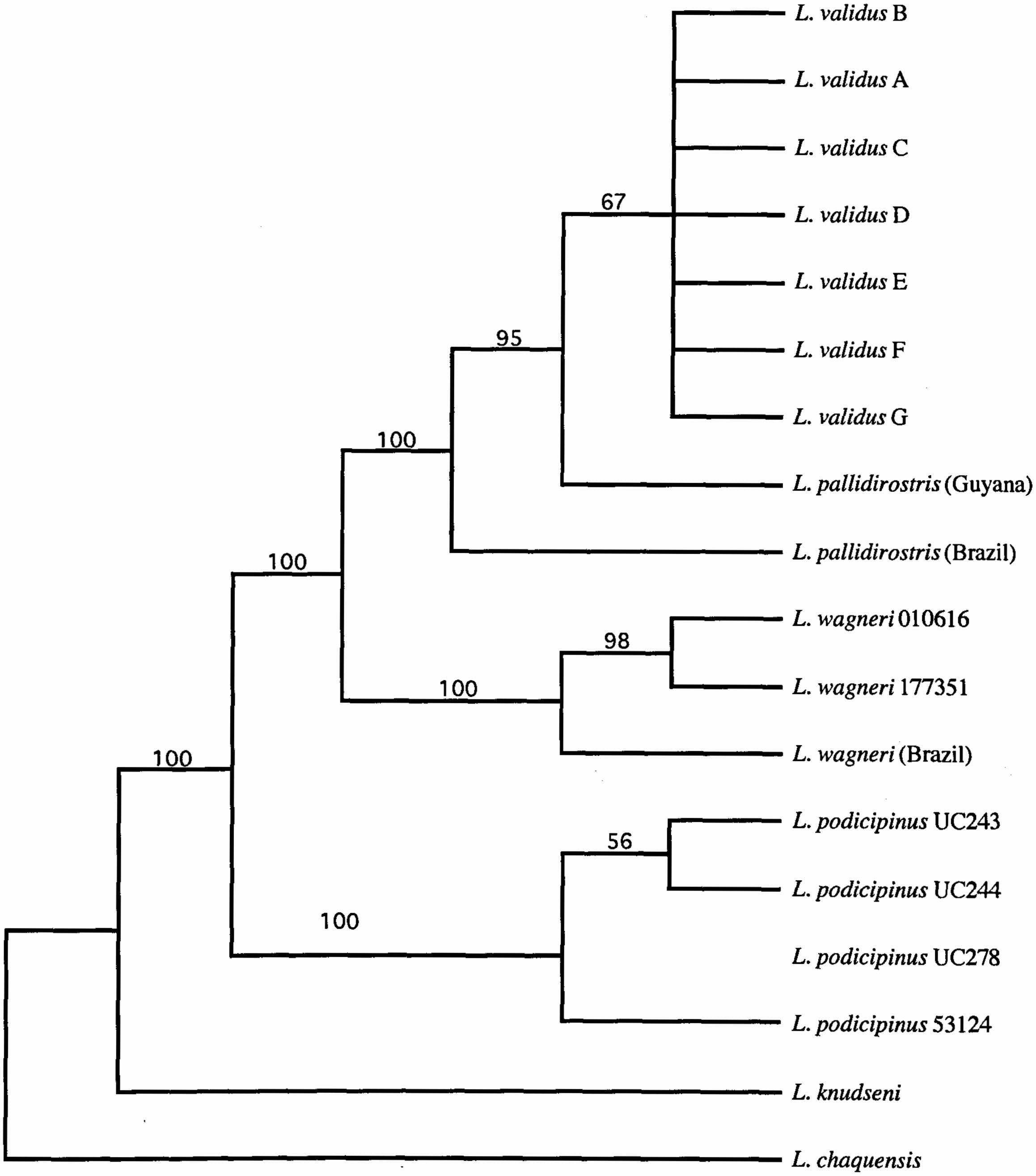

L. validus B
L. validus A
L. validus C
L. validus D
L. validus E
L. validus F
L. validus G
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
61
92
100
100
100
95
100
100
54

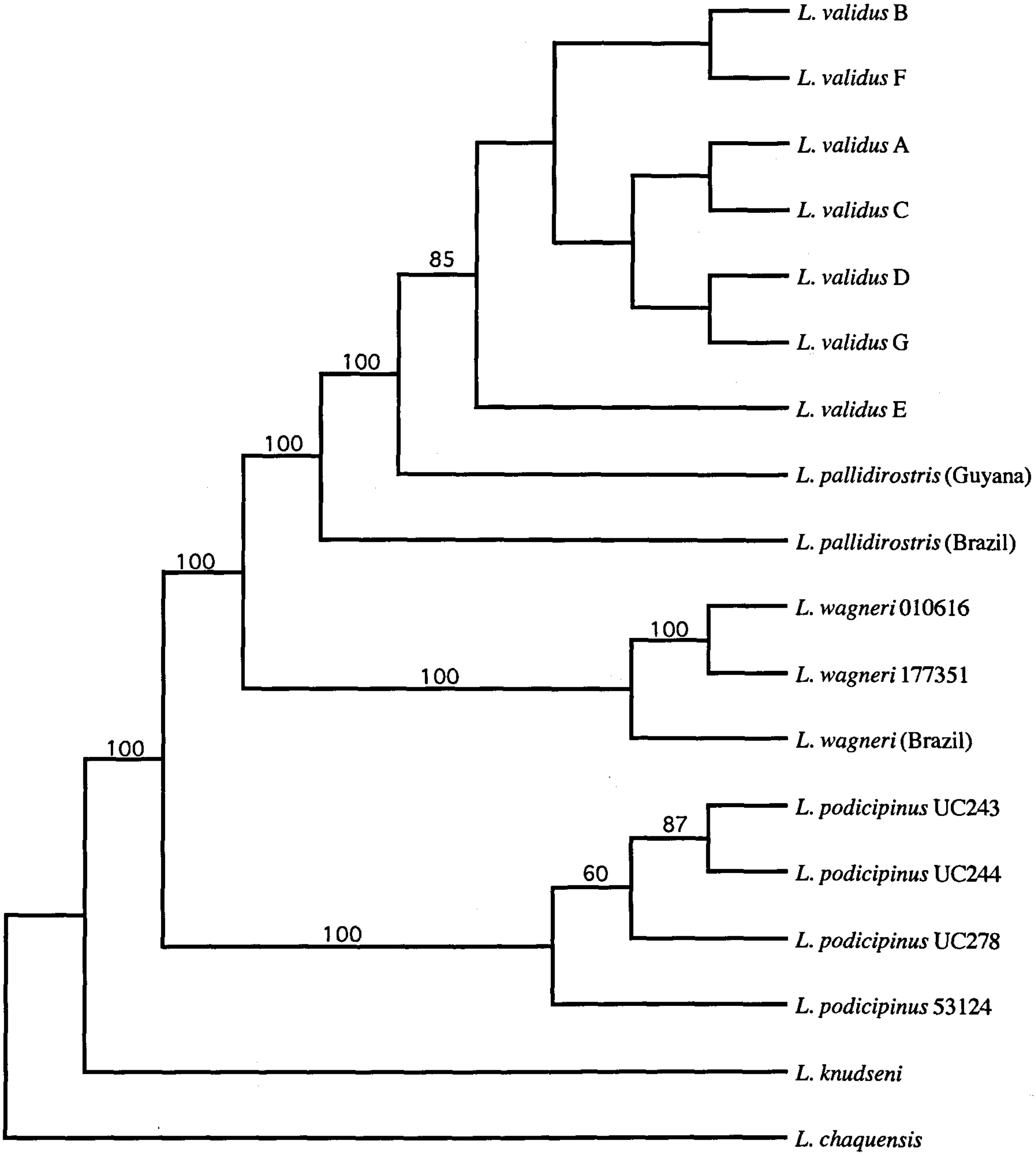
Figure 11. Unweighted ML tree obtained for the 16S data using the GTR+Γ evolutionary model. Bootstrap values are shown above branches. See text for clade descriptions.


L. validus B
L. validus A
L. validus C
L. validus D
L. validus E
L. validus F
L. validus G
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
67
95
100
100
98
100
100
56
100

structure and weighting loop:stem positions (2:1) under the TrN+G model parameters, resulted in a bootstrap 50% MR consensus tree with topology identical to the tree observed in Fig. 8, with less support for the relationships depicted among the *L. podicipinus* samples. The topology of the bootstrap 50% MR consensus tree obtained in the weighted ML analysis under the GTR+Γ model parameters was identical to the one presented in Fig. 7.

Bayesian analysis.— A Bayesian analysis of the 16S dataset was performed using the GTR+Γ model setting. Convergence of the Log likelihood values among the seven MCMC chains occurred within 16,000 generations of sampling, consequently the burn-in value was set to discard the first 1,600 trees sampled. The consensus tree obtained by MrBayes (Fig. 12) was similar to the bootstrap strict consensus trees described in the MP analyses when gaps were considered as missing data. There was 100% posterior support for a monophyletic *L. pallidirostris/L. validus* clade. The *L. pallidirostris* sample from Brazil appeared basal to a subclade in which a dichotomy was formed between the *L. pallidirostris* sample from Guyana and *L. validus*. There was 100% posterior support for this

Figure 12. Bayesian consensus tree of 16S gene. Posterior probability values >50% are shown above branches. See text for clade descriptions.


L. validus B
L. validus F
L. validus A
L. validus C
L. validus D
L. validus G
L. validus E
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis
85
100
100
100
100
100
100
87
60
100
100

subclade, however support for the relationships among the *L. validus* samples was extremely low.

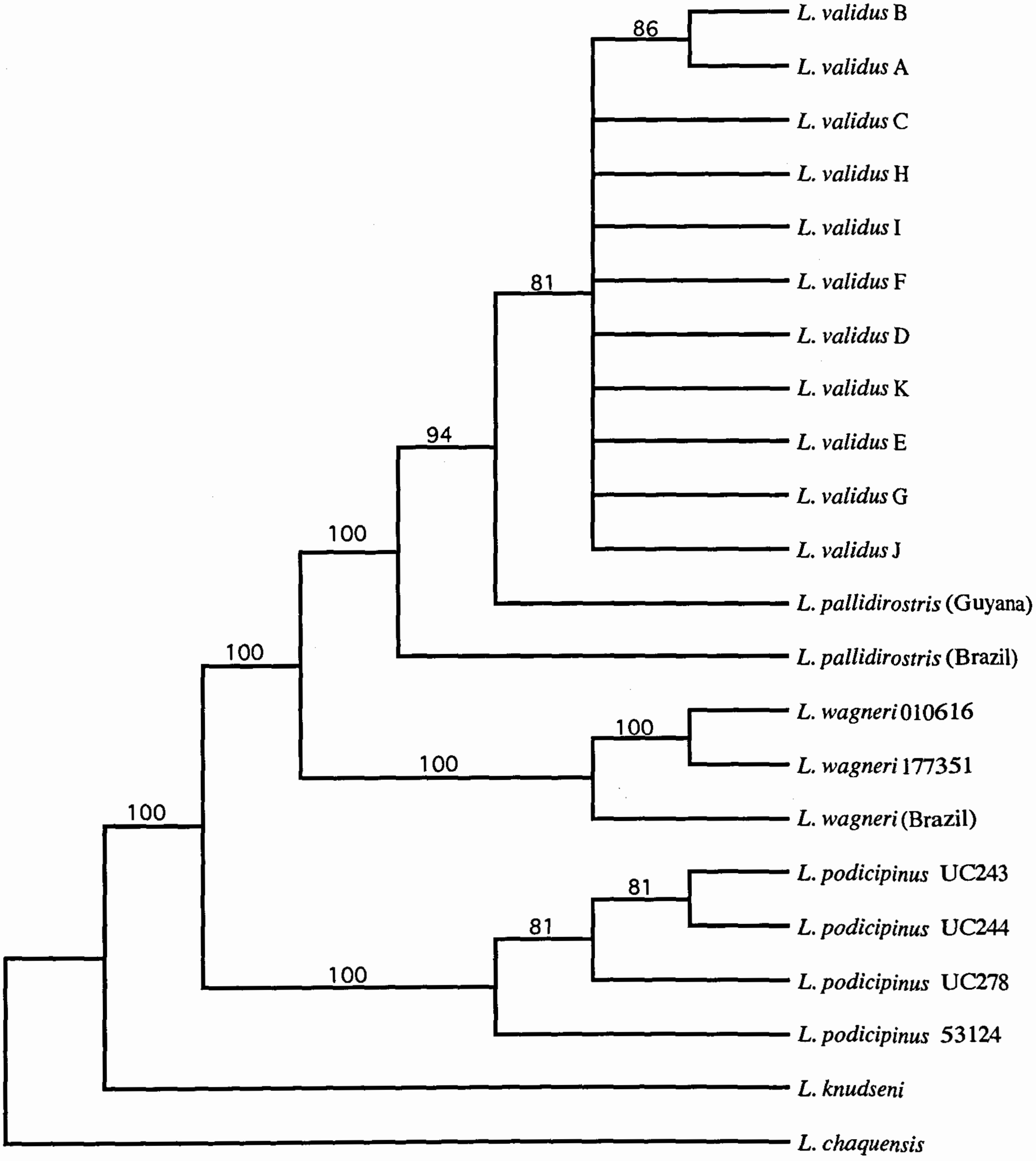
Combined data

Sequence divergence.— Analysis of the combined sequence data grouped the 50 *Leptodactylus validus* samples into eleven haplotypes (Table X). The haplotypes scored showed sixteen (0.71%) variable sites among the *L. validus* samples. Haplotype A includes samples from Grenada (n=9) and St. Vincent (n=8). Haplotype B consists of samples from Grenada (n=11) and St. Vincent (n=5). Haplotype C includes samples from Trinidad (n=8), and haplotype D contains the samples from Tobago (n=2). Haplotypes E–K each consist of a single sample from Trinidad. Corrected pair-wise genetic distances among *L. validus* samples ranged from 0–0.32%. The two *L. pallidirostris* samples differed by 0.41%. Genetic distances between the *L. pallidirostris* and *L. validus* samples ranged from 0.14–0.64%. Genetic distances among samples of *L. podicipinus* were between 0.05–1.64% and ranged between 13.45–14.54% when compared with *L. validus/pallidirostris.*

Distances among samples of *L. wagneri* were 0.23–1.65% and 7.41–8.04% between *L. validus/pallidirostris.* Distances between *L. validus/pallidirostris* and the outgroups ranged between 16.93–17.55% compared with *L. chaquensis* and 22.27–22.83% with *L. knudseni.* Corrected pair-wise genetic distances are presented in Table XI and absolute base differences among samples are provided in Table XII.

Maximum parsimony analyses.— Maximum parsimony analysis of the Combined data considering gaps as missing data resulted in three equally parsimonious trees, (L=765; CI=0.85). Of the 2247 aligned characters sequenced, 527 (23.5%) characters were variable, and 349 (15.5%) were parsimony-informative. The strict consensus tree (Fig. 13) depicts the *L. pallidirostris* and *L. validus* samples as a monophyletic group with 100% support. Within this clade, the *L. pallidirostris* sample from Brazil appeared basal to a strongly supported clade that united the *L. pallidirostris* sample from Guyana with a strongly supported *L. validus* subclade. There is strong support for a subclade formed by the two Grenada/St. Vincent haplotypes within the *L. validus* clade.

Figure 13. Consensus tree (50% MR) topology obtained in all MP analyses of the combined dataset. Bootstrap values shown above branches correspond to those observed in the MP analysis considering gaps as missing data. See text for clade descriptions.


86
81
94
100
100
100
100
100
100
81
81
L. validus B
L. validus A
L. validus C
L. validus H
L. validus I
L. validus F
L. validus D
L. validus K
L. validus E
L. validus G
L. validus J
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

Relationships among the other *L. validus* samples are unresolved. An analysis considering gaps as a fifth character state recovered three minimum-length trees (L=815; CI=0.84; 549 [24.4%] variable characters and 370 [16.5%] parsimony-informative). Topology of the strict consensus tree was identical to the one presented in Fig. 13.

Weighted maximum parsimony analyses.— An analysis applying a 2:1 (tv:ti) weighting scheme recovered three minimum-length trees (L=1041; CI=0.856; 527 [23.5%] variable characters and 355 [15.8%] parsimony-informative). Weighting loop positions (n=1135) to stem positions (n=1112), and considering gaps as missing data, resulted in three minimum-length trees (L=1269; CI=0.850; 527 [23.5%] variable characters and 349 [15.5%] parsimony-informative). Topologies of the strict consensus trees obtained in these analyses were identical to the one presented in Fig. 13. Using gaps as a fifth character state under the same weighting scheme, a single tree was obtained (L=1379; CI=0.839; 549 [24.4%] variable characters and 370 [16.5%] parsimony-informative. Topology of this tree, as well as the two weighted strict consensus trees were identical to those obtained in the unweighted analyses Fig. 13.

Maximum likelihood analyses. — Maximum likelihood analysis of the combined data implemented under the TrN+G model parameters resulted in a bootstrap 50% MR consensus tree topology similar to the one obtained in the MP analyses, with relationships among samples within the *L. podicipinus* clade differing slightly (Fig. 14). A similar tree was obtained using the GTR+I+Γ model parameters, with better resolution demonstrated among samples within the *L. podicipinus* clade (Fig. 15). ML analyses considering secondary structure and weighting loop:stem positions (2:1), using both evolutionary models resulted in bootstrap 50% MR consensus trees identical to the tree presented in Fig. 14.

Bayesian analysis.— A Bayesian analysis was conducted under the GTR+I+Γ model setting. Convergence of the Log likelihood values among the seven MCMC chains occurred within 40,000 generations of sampling, consequently the burn-in value was set to discard the first 4,000 trees sampled. The consensus tree obtained

Figure 14. ML Tree topology obtained for the combined dataset from unweighted analysis using the TrN+Γ evolutionary model and weighted analyses using both models. Bootstrap values shown above branches correspond to those observed in the unweighted analysis using the TrN+Γ model. See text for clade descriptions.

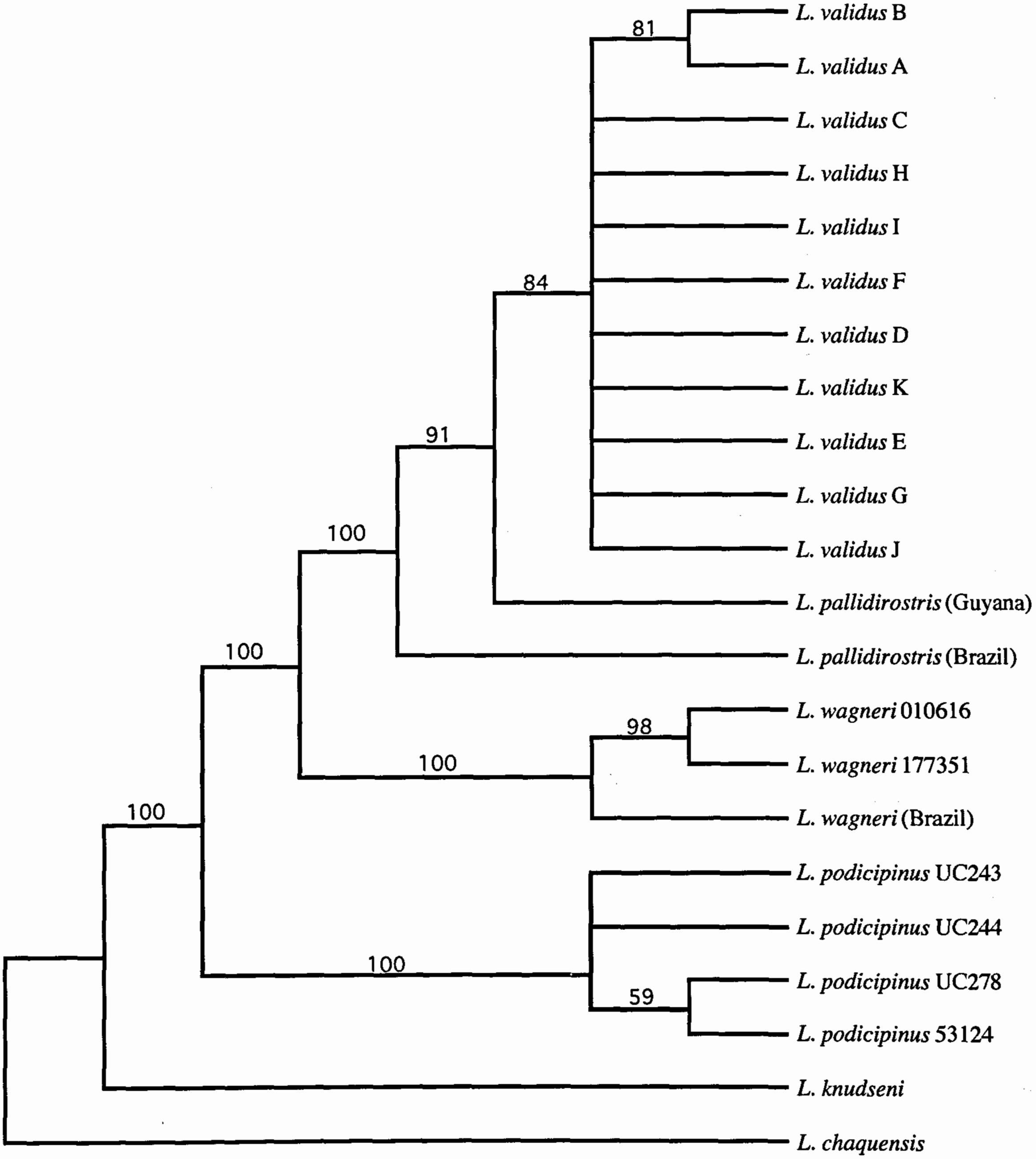
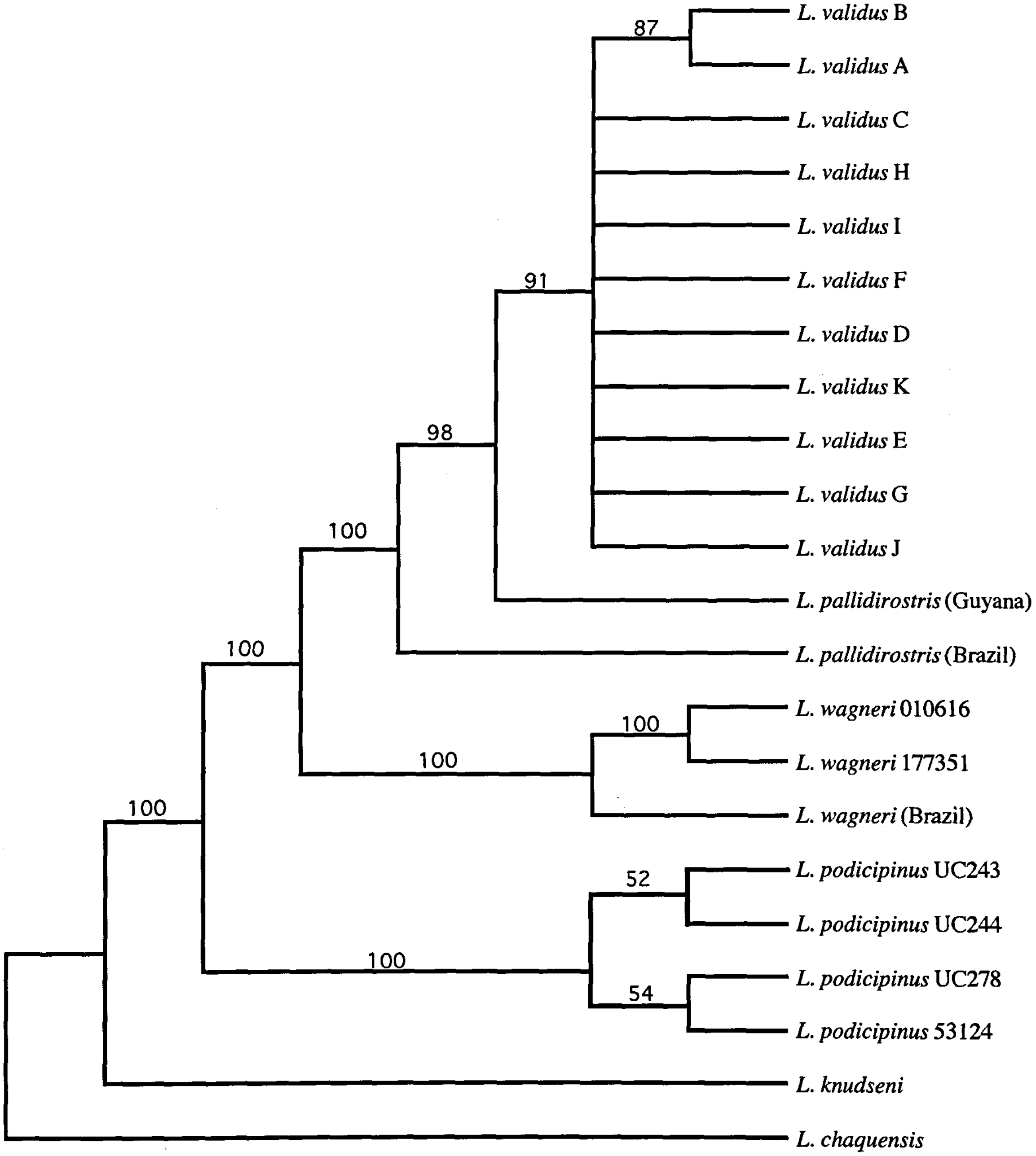
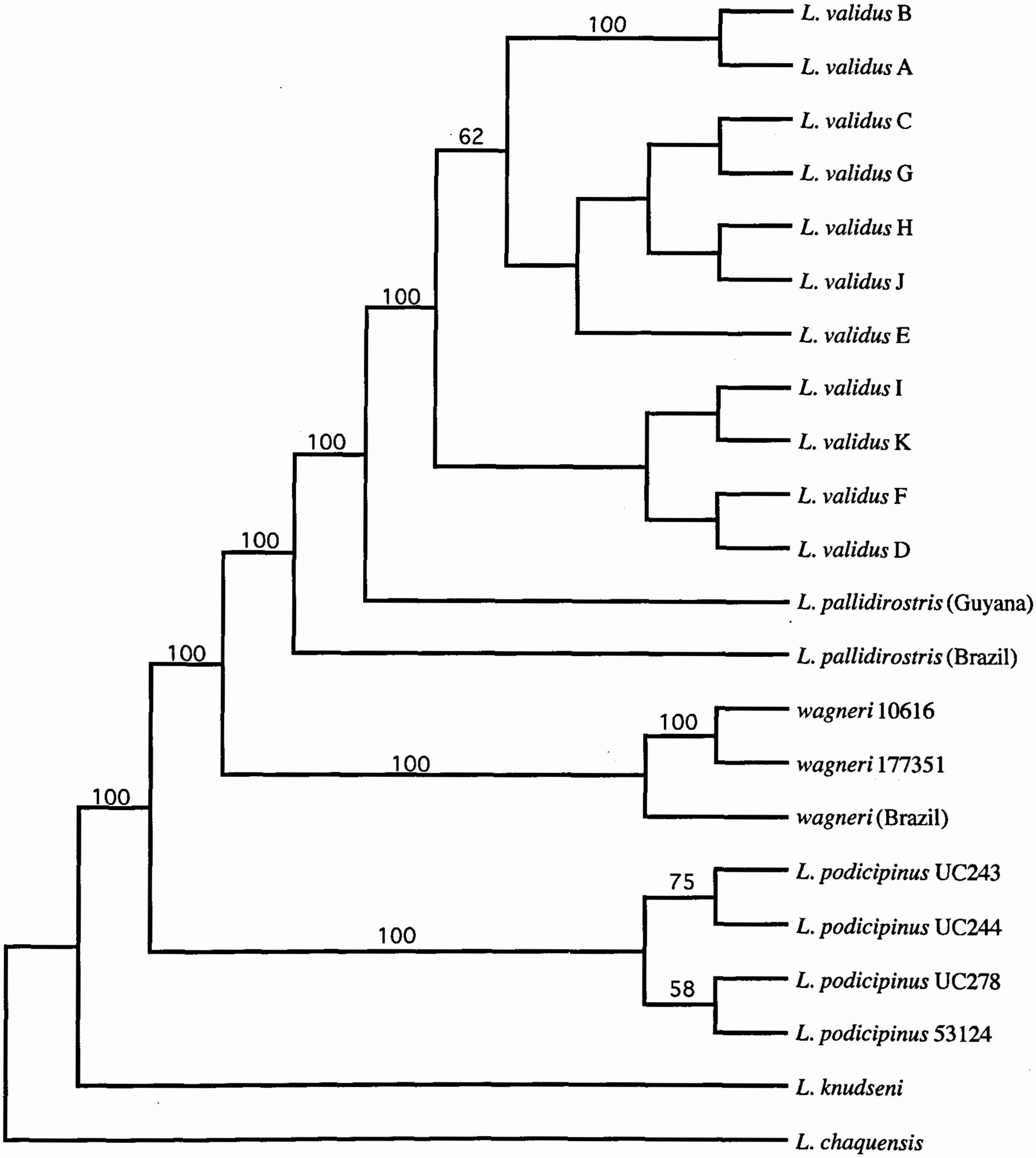

81
84
91
100
100
100
100
98
100
59
L. validus B
L. validus A
L. validus C
L. validus H
L. validus I
L. validus F
L. validus D
L. validus K
L. validus E
L. validus G
L. validus J
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

Figure 15. Unweighted ML tree obtained for the combined dataset using the GTR+I+Γ evolutionary model. Bootstrap values are shown above branches. See text for clade descriptions.


87
91
98
100
100
100
100
100
52
100
54
L. validus B
L. validus A
L. validus C
L. validus H
L. validus I
L. validus F
L. validus D
L. validus K
L. validus E
L. validus G
L. validus J
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
L. wagneri 010616
L. wagneri 177351
L. wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

by MrBayes (Fig. 16) was similar to the unweighted ML tree obtained using the GTR+I+Γ model parameters, with better resolution among the *L. validus* samples. With the exception of the subclade consisting of the Grenada/St. Vincent haplotypes however, there was little posterior support for any of the relationships depicted among the samples within the *L. validus* subclade.

Figure 16. Bayesian consensus tree of combined dataset. Posterior probability values >50% are shown above branches. See text for clade descriptions.


100
62
100
100
100
100
100
100
100
100
75
58
L. validus B
L. validus A
L. validus C
L. validus G
L. validus H
L. validus J
L. validus E
L. validus I
L. validus K
L. validus F
L. validus D
L. pallidirostris (Guyana)
L. pallidirostris (Brazil)
wagneri 10616
wagneri 177351
wagneri (Brazil)
L. podicipinus UC243
L. podicipinus UC244
L. podicipinus UC278
L. podicipinus 53124
L. knudseni
L. chaquensis

Discussion

Using morphological characters and call data, Heyer (1994) assessed variation among species within the *Leptodactylus podicipinus-wagneri* complex. However, morphological data were insufficient to resolve some questions involving the species boundaries in this complex. Consequently, the status of *L. pallidirostris* and *L. validus* within this complex remained a major unresolved problem (Heyer, 1994). Furthermore, the presence of *Leptodactylus validus* on the continental islands of Trinidad and Tobago and the oceanic islands of the Lesser Antilles, along with its absence from the mainland of South America, is inconsistent with the distribution patterns normally observed for other fauna of this region. Heyer (1994) described four possible distribution patterns expected for a species in this region: 1) occurring on the mainland of South America, Trinidad, Tobago, and the Lesser Antilles, 2) present in mainland South America, Trinidad, and Tobago but not on the Lesser Antilles, 3) found only in Trinidad and Tobago, or 4) found only in the Lesser Antilles. He suggested that either *L. validus* was present on the South American mainland or alternatively, that

L. validus might represent two or more closely related, morphologically similar species throughout its distribution.

Molecular techniques involving slowly evolving mitochondrial rRNA genes (12S and 16S), have frequently been employed in investigations of the phylogenetic relationships and biogeography among closely related taxa (Hass et al., 1993; Pramuk et al., 2001; Fritsch, 2003; Hower and Hedges, 2003). The use of these genes has also proven useful in revealing the presence sibling species among morphologically indistinguishable species (Richards et al., 2000; Glaw and Vences 2002).

All analyses performed in this study strongly supported a monophyletic group consisting of the *L. pallidirostris* and *L. validus* samples. The combined analyses revealed some genetic structuring among populations within this clade, i.e., genetically distant samples were also geographically distant. For example, a close relationship was demonstrated among samples of *L. validus* from the Lesser Antilles. Likewise, the *L. pallidirostris* sample from Guyana appeared more closely related to the *L. validus* samples than the *L. pallidirostris* sample from Brazil. Comparing corrected pair-wise genetic distances between the *L. validus* samples and the *L. pallidirostris* samples from each dataset resulted in the following genetic distances: <0.37% different for the *L. pallidirostris* sample from Guyana and <0.73% different for the *L. pallidirostris* sample from Brazil. Less than 0.5% sequence divergence was observed among the *L. validus* samples. These low levels of sequence divergence suggest *L. pallidirostris* and *L. validus* to be conspecific, supporting the hypothesis describing *L. validus* as a single species, distributed throughout the Lesser Antilles, Trinidad, Tobago, and mainland South America.

Advertisement call is another characteristic commonly analyzed in anuran systematic studies. These calls possess features that are species-specific in *Leptodactylus*, and in anurans in general, and are often a reliable indicator of species boundaries in frogs (Heyer and Straughan, 1976; Heyer, 1978, 1979, 1994; Heyer et al., 1996; Wieczorek and Channing, 1997; Hertwig et al., 2004; Camargo et al., submitted; de Sá et al., submitted, Heyer et al., submitted). The call data analyzed from Venezuelan populations of *L. pallidirostris* were similar to the advertisement call of *L. validus*

(Heyer, 1994), providing additional support for the conspecific status of the two species. Heyer indicated that a conservative approach was taken with regard to *L. pallidirostris,* and there was enough morphological variation present to suggest that more than one species may be present among the samples he examined. Additionally, Heyer (1994) explained that some of the Venezuelan samples he examined and assigned to *L. pallidirostris* closely resembled Trinidad and Tobago samples that he designated as *L. validus,* suggesting that the two populations may be conspecific.

Leptodactylus pallidirostris was first described from Katarbo, Guyana, by Lutz in 1930, based on coloration and pattern, however Lutz repeatedly referred to the species' resemblance to *L. validus.* This is in agreement with the present study in which *L. pallidirostris* and *L. validus* appears to be a single taxon. *Leptodactylus validus* was described by Garman in 1877, therefore this name has scientific priority over *L. pallidirostris.* Consequently, *L. pallidirostris* is placed in the synonymy of *L. validus.*

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Table I. Primers used for amplification (1) and sequencing (2) of 12S and 16S rDNA fragments.

Name	Sequence (5'-3')	
12SA-L[1,2]	AAACTGGGATTAGATACCCCACTAT	(Palumbi et al., 1991)
12SB-H[1,2]	GAGGGTGACGGGCGGTGTGT	(Palumbi et al., 1991)
12Stphef [1,2]	ATAGC(A/G)CTGAA(A/G)A(C/T)GCT(A/G)AGATG	
12SRdS1[1,2]	GGTACCGTCAAGTCCTTTGGGTT	
12L13[1,2]	TTAGAAGAGGCAAGTCGTAACATGGTA	(Feller & Hedges 1998)
Hedges16H10[1,2]	TGATTACGCTACCTTTGCACGGT	(Hedges 1994)
16Sar-L[1,2]	CGCCTGTTTACCAAAAACAT	(Palumbi et al., 1991; Graybeal 1997)
16Sbr-H[2]	CCGGTCTGAACTCAGATCACGT	(Palumbi et al., 1991)
16Sd[1] (Hedges16H1)	CTCCGGTCTGAACTCAGATCACGTAG	(Hedges, 1994)

Table II. 12S rDNA sequence haplotypes for *L. validus* samples from: Grenada (Gren), St. Vincent (StVn), Tobago (Tobo), and Trinidad (Trin). Haplotypes A and B represent multiple samples. Asterisks indicate samples used to represent a haplotype. Haplotypes C—E each consist of a single sample: (C) Trin175424, (D) Trin196728, and (E) Trin196886.

A	B
Gren006881	Gren196977
Gren006882	Gren196979
Gren006883	Gren196980
Gren006939	Gren197000
Gren196978	Gren197001
Gren196999	Gren197002
Gren197005	Gren197003
Gren197006	Gren197004
Gren197017	Gren197007
StVn056421	Gren197008
StVn056490	Gren197044
StVn056561	StVn196894
StVn056562	StVn196896
StVn056612	StVn196897
*StVn056613	StVn196899
StVn196895	StVn196900
StVn196898	Trin175410
Tobo186596	Trin175620
Tobo186597	*Trin196726
Trin196729	Trin196727
	Trin196730
	Trin196731
	Trin196732
	Trin196733
	Trin196734
	Trin196735
	Trin196888

Table III. Base composition percentages of 12S mtDNA gene sequences (averages among samples from each taxa).

	validus	*pallidirostris*	podicipinus	*wagneri*	*chaquensis*	*knudseni*	All taxa
A	0.31089	0.31280	0.22970	0.31316	0.31356	0.32121	0.31094
T	0.23857	0.23551	0.16515	0.22720	0.23123	0.21818	0.23625
G	0.20413	0.20411	0.15909	0.20581	0.20339	0.20242	0.20473
C	0.24640	0.24759	0.19606	0.25384	0.25182	0.25818	0.24807

Table IV. Pair-wise genetic distances for the 12S dataset. Distances corrected using the general time-reversible model with gamma distributed rates for variable sites.

		1	2	3	4	5	6	7	8
1	Gren006881	-							
2	Gren006882	0.00000	-						
3	Gren006883	0.00000	0.00000	-					
4	Gren006939	0.00000	0.00000	0.00000	-				
5	Gren196977	0.00122	0.00122	0.00122	0.00122	-			
6	Gren196978	0.00000	0.00000	0.00000	0.00000	0.00122	-		
7	Gren196979	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	-	
8	Gren196980	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	-
9	Gren196999	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
10	Gren197000	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
11	Gren197001	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
12	Gren197002	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
13	Gren197003	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
14	Gren197004	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
15	Gren197005	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
16	Gren197006	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
17	Gren197007	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
18	Gren197008	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
19	Gren197017	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
20	Gren197044	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
21	StVn056421	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
22	StVn056490	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
23	StVn056561	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
24	StVn056562	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
25	StVn056612	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
26	StVn196895	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
27	StVn196896	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
28	StVn196897	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
29	StVn196898	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
30	StVn196899	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
31	StVn196900	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
32	Tobo186597	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
33	Trin196726	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
34	Trin196727	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
35	Trin196728	0.00244	0.00244	0.00244	0.00244	0.00122	0.00244	0.00122	0.00122
36	Trin196729	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
37	Trin196730	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
38	Trin196731	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
39	Trin196732	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
40	Trin196733	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
41	Trin196734	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
42	Trin196888	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
43	StVn056613	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
44	StVn196894	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
45	Trin175424	0.00243	0.00243	0.00243	0.00243	0.00366	0.00243	0.00366	0.00366
46	Tobo186596	0.00000	0.00000	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122
47	Trin196886	0.00122	0.00122	0.00122	0.00122	0.00244	0.00122	0.00244	0.00244
48	Trin175410	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
49	Trin175620	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
50	Trin196735	0.00122	0.00122	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000
51	pall207682	0.00122	0.00122	0.00122	0.00122	0.00245	0.00122	0.00245	0.00245
52	pallWR8626	0.00368	0.00368	0.00368	0.00368	0.00492	0.00368	0.00492	0.00492
53	wagn010616	0.05218	0.05218	0.05218	0.05218	0.05366	0.05218	0.05366	0.05366
54	wagn012969	0.05361	0.05361	0.05361	0.05361	0.05509	0.05361	0.05509	0.05509
55	wagn177351	0.05042	0.05042	0.05042	0.05042	0.05189	0.05042	0.05189	0.05189
56	podicUC243	0.10749	0.10749	0.10749	0.10749	0.10930	0.10749	0.10930	0.10930
57	podicUC244	0.10586	0.10586	0.10586	0.10586	0.10767	0.10586	0.10767	0.10767
58	podicUC278	0.10913	0.10913	0.10913	0.10913	0.11095	0.10913	0.11095	0.11095
59	podic53124	0.10849	0.10849	0.10849	0.10849	0.11032	0.10849	0.11032	0.11032
60	chaq186524	0.12481	0.12481	0.12481	0.12481	0.12550	0.12481	0.12550	0.12550
61	knuds13244	0.17003	0.17003	0.17003	0.17003	0.17219	0.17003	0.17219	0.17219

		9	10	11	12	13	14	15	16
9	Gren196999	-							
10	Gren197000	0.00122	-						
11	Gren197001	0.00122	0.00000	-					
12	Gren197002	0.00122	0.00000	0.00000	-				
13	Gren197003	0.00122	0.00000	0.00000	0.00000	-			
14	Gren197004	0.00122	0.00000	0.00000	0.00000	0.00000	-		
15	Gren197005	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	-	
16	Gren197006	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	-
17	Gren197007	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
18	Gren197008	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
19	Gren197017	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
20	Gren197044	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
21	StVn056421	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
22	StVn056490	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
23	StVn056561	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
24	StVn056562	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
25	StVn056612	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
26	StVn196895	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
27	StVn196896	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
28	StVn196897	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
29	StVn196898	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
30	StVn196899	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
31	StVn196900	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
32	Tobo186597	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
33	Trin196726	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
34	Trin196727	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
35	Trin196728	0.00244	0.00122	0.00122	0.00122	0.00122	0.00122	0.00244	0.00244
36	Trin196729	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
37	Trin196730	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
38	Trin196731	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
39	Trin196732	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
40	Trin196733	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
41	Trin196734	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
42	Trin196888	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
43	StVn056613	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
44	StVn196894	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
45	Trin175424	0.00243	0.00366	0.00366	0.00366	0.00366	0.00366	0.00243	0.00243
46	Tobo186596	0.00000	0.00122	0.00122	0.00122	0.00122	0.00122	0.00000	0.00000
47	Trin196886	0.00122	0.00244	0.00244	0.00244	0.00244	0.00244	0.00122	0.00122
48	Trin175410	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
49	Trin175620	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
50	Trin196735	0.00122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00122	0.00122
51	pall207682	0.00122	0.00245	0.00245	0.00245	0.00245	0.00245	0.00122	0.00122
52	pallWR8626	0.00368	0.00492	0.00492	0.00492	0.00492	0.00492	0.00368	0.00368
53	wagn010616	0.05218	0.05366	0.05366	0.05366	0.05366	0.05366	0.05218	0.05218
54	wagn012969	0.05361	0.05509	0.05509	0.05509	0.05509	0.05509	0.05361	0.05361
55	wagn177351	0.05042	0.05189	0.05189	0.05189	0.05189	0.05189	0.05042	0.05042
56	podicUC243	0.10749	0.10930	0.10930	0.10930	0.10930	0.10930	0.10749	0.10749
57	podicUC244	0.10586	0.10767	0.10767	0.10767	0.10767	0.10767	0.10586	0.10586
58	podicUC278	0.10913	0.11095	0.11095	0.11095	0.11095	0.11095	0.10913	0.10913
59	podic53124	0.10849	0.11032	0.11032	0.11032	0.11032	0.11032	0.10849	0.10849
60	chaq186524	0.12481	0.12550	0.12550	0.12550	0.12550	0.12550	0.12481	0.12481
61	knuds13244	0.17003	0.17219	0.17219	0.17219	0.17219	0.17219	0.17003	0.17003

	17	18	19	20	21	22	23	24
17 Gren197007	-							
18 Gren197008	0.00000	-						
19 Gren197017	0.00122	0.00122	-					
20 Gren197044	0.00000	0.00000	0.00122	-				
21 StVn056421	0.00122	0.00122	0.00000	0.00122	-			
22 StVn056490	0.00122	0.00122	0.00000	0.00122	0.00000	-		
23 StVn056561	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	-	
24 StVn056562	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	-
25 StVn056612	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
26 StVn196895	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
27 StVn196896	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
28 StVn196897	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
29 StVn196898	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
30 StVn196899	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
31 StVn196900	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
32 Tobo186597	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
33 Trin196726	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
34 Trin196727	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
35 Trin196728	0.00122	0.00122	0.00244	0.00122	0.00244	0.00244	0.00244	0.00244
36 Trin196729	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
37 Trin196730	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
38 Trin196731	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
39 Trin196732	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
40 Trin196733	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
41 Trin196734	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
42 Trin196888	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
43 StVn056613	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
44 StVn196894	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
45 Trin175424	0.00366	0.00366	0.00243	0.00366	0.00243	0.00243	0.00243	0.00243
46 Tobo186596	0.00122	0.00122	0.00000	0.00122	0.00000	0.00000	0.00000	0.00000
47 Trin196886	0.00244	0.00244	0.00122	0.00244	0.00122	0.00122	0.00122	0.00122
48 Trin175410	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
49 Trin175620	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
50 Trin196735	0.00000	0.00000	0.00122	0.00000	0.00122	0.00122	0.00122	0.00122
51 pall207682	0.00245	0.00245	0.00122	0.00245	0.00122	0.00122	0.00122	0.00122
52 pallWR8626	0.00492	0.00492	0.00368	0.00492	0.00368	0.00368	0.00368	0.00368
53 wagn010616	0.05366	0.05366	0.05218	0.05366	0.05218	0.05218	0.05218	0.05218
54 wagn012969	0.05509	0.05509	0.05361	0.05509	0.05361	0.05361	0.05361	0.05361
55 wagn177351	0.05189	0.05189	0.05042	0.05189	0.05042	0.05042	0.05042	0.05042
56 podicUC243	0.10930	0.10930	0.10749	0.10930	0.10749	0.10749	0.10749	0.10749
57 podicUC244	0.10767	0.10767	0.10586	0.10767	0.10586	0.10586	0.10586	0.10586
58 podicUC278	0.11095	0.11095	0.10913	0.11095	0.10913	0.10913	0.10913	0.10913
59 podic53124	0.11032	0.11032	0.10849	0.11032	0.10849	0.10849	0.10849	0.10849
60 chaq186524	0.12550	0.12550	0.12481	0.12550	0.12481	0.12481	0.12481	0.12481
61 knuds13244	0.17219	0.17219	0.17003	0.17219	0.17003	0.17003	0.17003	0.17003

		25	26	27	28	29	30	31	32
25	StVn056612	-							
26	StVn196895	0.00000	-						
27	StVn196896	0.00122	0.00122	-					
28	StVn196897	0.00122	0.00122	0.00000	-				
29	StVn196898	0.00000	0.00000	0.00122	0.00122	-			
30	StVn196899	0.00122	0.00122	0.00000	0.00000	0.00122	-		
31	StVn196900	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	-	
32	Tobo186597	0.00000	0.00000	0.00122	0.00122	0.00000	0.00122	0.00122	-
33	Trin196726	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
34	Trin196727	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
35	Trin196728	0.00244	0.00244	0.00122	0.00122	0.00244	0.00122	0.00122	0.00244
36	Trin196729	0.00000	0.00000	0.00122	0.00122	0.00000	0.00122	0.00122	0.00000
37	Trin196730	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
38	Trin196731	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
39	Trin196732	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
40	Trin196733	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
41	Trin196734	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
42	Trin196888	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
43	StVn056613	0.00000	0.00000	0.00122	0.00122	0.00000	0.00122	0.00122	0.00000
44	StVn196894	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
45	Trin175424	0.00243	0.00243	0.00366	0.00366	0.00243	0.00366	0.00366	0.00243
46	Tobo186596	0.00000	0.00000	0.00122	0.00122	0.00000	0.00122	0.00122	0.00000
47	Trin196886	0.00122	0.00122	0.00244	0.00244	0.00122	0.00244	0.00244	0.00122
48	Trin175410	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
49	Trin175620	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
50	Trin196735	0.00122	0.00122	0.00000	0.00000	0.00122	0.00000	0.00000	0.00122
51	pall207682	0.00122	0.00122	0.00245	0.00245	0.00122	0.00245	0.00245	0.00122
52	pallWR8626	0.00368	0.00368	0.00492	0.00492	0.00368	0.00492	0.00492	0.00368
53	wagn010616	0.05218	0.05218	0.05366	0.05366	0.05218	0.05366	0.05366	0.05218
54	wagn012969	0.05361	0.05361	0.05509	0.05509	0.05361	0.05509	0.05509	0.05361
55	wagn177351	0.05042	0.05042	0.05189	0.05189	0.05042	0.05189	0.05189	0.05042
56	podicUC243	0.10749	0.10749	0.10930	0.10930	0.10749	0.10930	0.10930	0.10749
57	podicUC244	0.10586	0.10586	0.10767	0.10767	0.10586	0.10767	0.10767	0.10586
58	podicUC278	0.10913	0.10913	0.11095	0.11095	0.10913	0.11095	0.11095	0.10913
59	podic53124	0.10849	0.10849	0.11032	0.11032	0.10849	0.11032	0.11032	0.10849
60	chaq186524	0.12481	0.12481	0.12550	0.12550	0.12481	0.12550	0.12550	0.12481
61	knuds13244	0.17003	0.17003	0.17219	0.17219	0.17003	0.17219	0.17219	0.17003

		33	34	35	36	37	38	39	40
33	Trin196726	-							
34	Trin196727	0.00000	-						
35	Trin196728	0.00122	0.00122	-					
36	Trin196729	0.00122	0.00122	0.00244	-				
37	Trin196730	0.00000	0.00000	0.00122	0.00122	-			
38	Trin196731	0.00000	0.00000	0.00122	0.00122	0.00000	-		
39	Trin196732	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	-	
40	Trin196733	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	-
41	Trin196734	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
42	Trin196888	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
43	StVn056613	0.00122	0.00122	0.00244	0.00000	0.00122	0.00122	0.00122	0.00122
44	StVn196894	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
45	Trin175424	0.00366	0.00366	0.00490	0.00243	0.00366	0.00366	0.00366	0.00366
46	Tobo186596	0.00122	0.00122	0.00244	0.00000	0.00122	0.00122	0.00122	0.00122
47	Trin196886	0.00244	0.00244	0.00368	0.00122	0.00244	0.00244	0.00244	0.00244
48	Trin175410	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
49	Trin175620	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
50	Trin196735	0.00000	0.00000	0.00122	0.00122	0.00000	0.00000	0.00000	0.00000
51	pall207682	0.00245	0.00245	0.00367	0.00122	0.00245	0.00245	0.00245	0.00245
52	pallWR8626	0.00492	0.00492	0.00618	0.00368	0.00492	0.00492	0.00492	0.00492
53	wagn010616	0.05366	0.05366	0.05546	0.05218	0.05366	0.05366	0.05366	0.05366
54	wagn012969	0.05509	0.05509	0.05691	0.05361	0.05509	0.05509	0.05509	0.05509
55	wagn177351	0.05189	0.05189	0.05367	0.05042	0.05189	0.05189	0.05189	0.05189
56	podicUC243	0.10930	0.10930	0.10910	0.10749	0.10930	0.10930	0.10930	0.10930
57	podicUC244	0.10767	0.10767	0.10747	0.10586	0.10767	0.10767	0.10767	0.10767
58	podicUC278	0.11095	0.11095	0.11075	0.10913	0.11095	0.11095	0.11095	0.11095
59	podic53124	0.11032	0.11032	0.11010	0.10849	0.11032	0.11032	0.11032	0.11032
60	chaq186524	0.12550	0.12550	0.12809	0.12481	0.12550	0.12550	0.12550	0.12550
61	knuds13244	0.17219	0.17219	0.16926	0.17003	0.17219	0.17219	0.17219	0.17219

	41	42	43	44	45	46	47	48
41 Trin196734	-							
42 Trin196888	0.00000	-						
43 StVn056613	0.00122	0.00122	-					
44 StVn196894	0.00000	0.00000	0.00122	-				
45 Trin175424	0.00366	0.00366	0.00243	0.00366	-			
46 Tobo186596	0.00122	0.00122	0.00000	0.00122	0.00243	-		
47 Trin196886	0.00244	0.00244	0.00122	0.00244	0.00367	0.00122	-	
48 Trin175410	0.00000	0.00000	0.00122	0.00000	0.00366	0.00122	0.00244	-
49 Trin175620	0.00000	0.00000	0.00122	0.00000	0.00366	0.00122	0.00244	0.00000
50 Trin196735	0.00000	0.00000	0.00122	0.00000	0.00366	0.00122	0.00244	0.00000
51 pall207682	0.00245	0.00245	0.00122	0.00245	0.00366	0.00122	0.00244	0.00245
52 pallWR8626	0.00492	0.00492	0.00368	0.00492	0.00616	0.00368	0.00494	0.00492
53 wagn010616	0.05366	0.05366	0.05218	0.05366	0.05537	0.05218	0.05399	0.05366
54 wagn012969	0.05509	0.05509	0.05361	0.05509	0.05681	0.05361	0.05542	0.05509
55 wagn177351	0.05189	0.05189	0.05042	0.05189	0.05358	0.05042	0.05220	0.05189
56 podicUC243	0.10930	0.10930	0.10749	0.10930	0.10679	0.10749	0.10987	0.10930
57 podicUC244	0.10767	0.10767	0.10586	0.10767	0.10514	0.10586	0.10825	0.10767
58 podicUC278	0.11095	0.11095	0.10913	0.11095	0.10845	0.10913	0.11152	0.11095
59 podic53124	0.11032	0.11032	0.10849	0.11032	0.10769	0.10849	0.11093	0.11032
60 chaq186524	0.12550	0.12550	0.12481	0.12550	0.12406	0.12481	0.12231	0.12550
61 knuds13244	0.17219	0.17219	0.17003	0.17219	0.17504	0.17003	0.17300	0.17219

	49	50	51	52	53	54	55	56
49 Trin175620	-							
50 Trin196735	0.00000	-						
51 pall207682	0.00245	0.00245	-					
52 pallWR8626	0.00492	0.00492	0.00245	-				
53 wagn010616	0.05366	0.05366	0.05211	0.05210	-			
54 wagn012969	0.05509	0.05509	0.05353	0.05716	0.01520	-		
55 wagn177351	0.05189	0.05189	0.05036	0.05035	0.00244	0.01512	-	
56 podicUC243	0.10930	0.10930	0.10678	0.10683	0.10738	0.11043	0.10985	-
57 podicUC244	0.10767	0.10767	0.10515	0.10520	0.10577	0.10879	0.10824	0.00122
58 podicUC278	0.11095	0.11095	0.10843	0.10848	0.10577	0.11210	0.10824	0.00629
59 podic53124	0.11032	0.11032	0.10773	0.10778	0.10532	0.11143	0.10787	0.00746
60 chaq186524	0.12550	0.12550	0.12680	0.12192	0.10948	0.11809	0.11008	0.12356
61 knuds13244	0.17219	0.17219	0.16998	0.17006	0.15841	0.16599	0.16154	0.15559

	57	58	59	60	61
57 podicUC244	-				
58 podicUC278	0.00499	-			
59 podic53124	0.00618	0.00875	-		
60 chaq186524	0.12184	0.12715	0.12299	-	
61 knuds13244	0.15354	0.15570	0.15109	0.12095	-

Table V. Absolute base differences among samples for the 12S dataset.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Gren006881	-														
2 Gren006882	0	-													
3 Gren006883	0	0	-												
4 Gren006939	0	0	0	-											
5 Gren196977	1	1	1	1	-										
6 Gren196978	0	0	0	0	1	-									
7 Gren196979	1	1	1	1	0	1	-								
8 Gren196980	1	1	1	1	0	1	0	-							
9 Gren196999	0	0	0	0	1	0	1	1	-						
10 Gren197000	1	1	1	1	0	1	0	0	1	-					
11 Gren197001	1	1	1	1	0	1	0	0	1	0	-				
12 Gren197002	1	1	1	1	0	1	0	0	1	0	0	-			
13 Gren197003	1	1	1	1	0	1	0	0	1	0	0	0	-		
14 Gren197004	1	1	1	1	0	1	0	0	1	0	0	0	0	-	
15 Gren197005	0	0	0	0	1	0	1	1	0	1	1	1	1	1	-
16 Gren197006	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
17 Gren197007	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
18 Gren197008	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
19 Gren197017	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
20 Gren197044	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
21 StVn056421	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
22 StVn056490	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
23 StVn056561	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
24 StVn056562	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
25 StVn056612	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
26 StVn196895	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
27 StVn196896	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
28 StVn196897	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
29 StVn196898	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
30 StVn196899	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
31 StVn196900	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
32 Tobo186597	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
33 Trin196726	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
34 Trin196727	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
35 Trin196728	2	2	2	2	1	2	1	1	2	1	1	1	1	1	2
36 Trin196729	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
37 Trin196730	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
38 Trin196731	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
39 Trin196732	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
40 Trin196733	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
41 Trin196734	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
42 Trin196888	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
43 StVn056613	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
44 StVn196894	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
45 Trin175424	2	2	2	2	3	2	3	3	2	3	3	3	3	3	2
46 Tobo186596	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
47 Trin196886	1	1	1	1	2	1	2	2	1	2	2	2	2	2	1
48 Trin175410	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
49 Trin175620	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
50 Trin196735	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
51 pall207682	1	1	1	1	2	1	2	2	1	2	2	2	2	2	1
52 pallWR8626	3	3	3	3	4	3	4	4	3	4	4	4	4	4	3
53 wagn010616	37	37	37	37	38	37	38	38	37	38	38	38	38	38	37
54 wagn012969	38	38	38	38	39	38	39	39	38	39	39	39	39	39	38
55 wagn177351	36	36	36	36	37	36	37	37	36	37	37	37	37	37	36
56 podicUC243	68	68	68	68	69	68	69	69	68	69	69	69	69	69	68
57 podicUC244	67	67	67	67	68	67	68	68	67	68	68	68	68	68	67
58 podicUC278	69	69	69	69	70	69	70	70	69	70	70	70	70	70	69
59 podic53124	68	68	68	68	69	68	69	69	68	69	69	69	69	69	68
60 chaq186524	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
61 knuds13244	99	99	99	99	100	99	100	100	99	100	100	100	100	100	99

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
16 Gren197006	-														
17 Gren197007	1	-													
18 Gren197008	1	0	-												
19 Gren197017	0	1	1	-											
20 Gren197044	1	0	0	1	-										
21 StVn056421	0	1	1	0	1	-									
22 StVn056490	0	1	1	0	1	0	-								
23 StVn056561	0	1	1	0	1	0	0	-							
24 StVn056562	0	1	1	0	1	0	0	0	-						
25 StVn056612	0	1	1	0	1	0	0	0	0	-					
26 StVn196895	0	1	1	0	1	0	0	0	0	0	-				
27 StVn196896	1	0	0	1	0	1	1	1	1	1	1	-			
28 StVn196897	1	0	0	1	0	1	1	1	1	1	1	0	-		
29 StVn196898	0	1	1	0	1	0	0	0	0	0	0	1	1	-	
30 StVn196899	1	0	0	1	0	1	1	1	1	1	1	0	0	1	-
31 StVn196900	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
32 Tobo186597	0	1	1	0	1	0	0	0	0	0	0	1	1	0	1
33 Trin196726	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
34 Trin196727	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
35 Trin196728	2	1	1	2	1	2	2	2	2	2	2	1	1	2	1
36 Trin196729	0	1	1	0	1	0	0	0	0	0	0	1	1	0	1
37 Trin196730	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
38 Trin196731	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
39 Trin196732	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
40 Trin196733	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
41 Trin196734	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
42 Trin196888	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
43 StVn056613	0	1	1	0	1	0	0	0	0	0	0	1	1	0	1
44 StVn196894	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
45 Trin175424	2	3	3	2	3	2	2	2	2	2	2	3	3	2	3
46 Tobo186596	0	1	1	0	1	0	0	0	0	0	0	1	1	0	1
47 Trin196886	1	2	2	1	2	1	1	1	1	1	1	2	2	1	2
48 Trin175410	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
49 Trin175620	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
50 Trin196735	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
51 pall207682	1	2	2	1	2	1	1	1	1	1	1	2	2	1	2
52 pallWR8626	3	4	4	3	4	3	3	3	3	3	3	4	4	3	4
53 wagn010616	37	38	38	37	38	37	37	37	37	37	37	38	38	37	38
54 wagn012969	38	39	39	38	39	38	38	38	38	38	38	39	39	38	39
55 wagn177351	36	37	37	36	37	36	36	36	36	36	36	37	37	36	37
56 podicUC243	68	69	69	68	69	68	68	68	68	68	68	69	69	68	69
57 podicUC244	67	68	68	67	68	67	67	67	67	67	67	68	68	67	68
58 podicUC278	69	70	70	69	70	69	69	69	69	69	69	70	70	69	70
59 podic53124	68	69	69	68	69	68	68	68	68	68	68	69	69	68	69
60 chaq186524	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
61 knuds13244	99	100	100	99	100	99	99	99	99	99	99	100	100	99	100

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
31 StVn196900	-														
32 Tobo186597	1	-													
33 Trin196726	0	1	-												
34 Trin196727	0	1	0	-											
35 Trin196728	1	2	1	1	-										
36 Trin196729	1	0	1	1	2	-									
37 Trin196730	0	1	0	0	1	1	-								
38 Trin196731	0	1	0	0	1	1	0	-							
39 Trin196732	0	1	0	0	1	1	0	0	-						
40 Trin196733	0	1	0	0	1	1	0	0	0	-					
41 Trin196734	0	1	0	0	1	1	0	0	0	0	-				
42 Trin196888	0	1	0	0	1	1	0	0	0	0	0	-			
43 StVn056613	1	0	1	1	2	0	1	1	1	1	1	1	-		
44 StVn196894	0	1	0	0	1	1	0	0	0	0	0	0	1	-	
45 Trin175424	3	2	3	3	4	2	3	3	3	3	3	3	2	3	-
46 Tobo186596	1	0	1	1	2	0	1	1	1	1	1	1	0	1	2
47 Trin196886	2	1	2	2	3	1	2	2	2	2	2	2	1	2	3
48 Trin175410	0	1	0	0	1	1	0	0	0	0	0	0	1	0	3
49 Trin175620	0	1	0	0	1	1	0	0	0	0	0	0	1	0	3
50 Trin196735	0	1	0	0	1	1	0	0	0	0	0	0	1	0	3
51 pall207682	2	1	2	2	3	1	2	2	2	2	2	2	1	2	3
52 pallWR8626	4	3	4	4	5	3	4	4	4	4	4	4	3	4	5
53 wagn010616	38	37	38	38	39	37	38	38	38	38	38	38	37	38	39
54 wagn012969	39	38	39	39	40	38	39	39	39	39	39	39	38	39	40
55 wagn177351	37	36	37	37	38	36	37	37	37	37	37	37	36	37	38
56 podicUC243	69	68	69	69	69	68	69	69	69	69	69	69	68	69	68
57 podicUC244	68	67	68	68	68	67	68	68	68	68	68	68	67	68	67
58 podicUC278	70	69	70	70	70	69	70	70	70	70	70	70	69	70	69
59 podic53124	69	68	69	69	69	68	69	69	69	69	69	69	68	69	68
60 chaq186524	78	78	78	78	79	78	78	78	78	78	78	78	78	78	78
61 knuds13244	100	99	100	100	99	99	100	100	100	100	100	100	99	100	101

	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
46 Tobo186596	-														
47 Trin196886	1	-													
48 Trin175410	1	2	-												
49 Trin175620	1	2	0	-											
50 Trin196735	1	2	0	0	-										
51 pall207682	1	2	2	2	2	-									
52 pallWR8626	3	4	4	4	4	2	-								
53 wagn010616	37	38	38	38	38	37	37	-							
54 wagn012969	38	39	39	39	39	38	40	12	-						
55 wagn177351	36	37	37	37	37	36	36	2	12	-					
56 podicUC243	68	69	69	69	69	68	68	68	70	69	-				
57 podicUC244	67	68	68	68	68	67	67	67	69	68	1	-			
58 podicUC278	69	70	70	70	70	69	69	67	71	68	5	4	-		
59 podic53124	68	69	69	69	69	68	68	66	70	67	6	5	7	-	
60 chaq186524	78	77	78	78	78	79	77	71	75	71	77	76	79	77	-
61 knuds13244	99	100	100	100	100	99	99	94	98	95	95	94	95	93	78

	61
61 knuds13244	-

Table VI. 16S rDNA sequence haplotypes for *L. validus* samples from: Grenada (Gren), St. Vincent (StVn), Tobago (Tobo), and Trinidad (Trin). Samples A—C represent multiple samples. Asterisks indicate samples used to represent a haplotype. Haplotypes D—G each consist of a single sample: (D) Trin196886, (E) Trin175410, (F) Trin175620, and (G) Trin196735.

A	B	C
Gren006881	Trin175424	*Tobo186596
Gren006882	*Trin196726	Tobo186597
Gren006883	Trin196727	
Gren006939	Trin196728	
Gren196977	Trin196729	
Gren196978	Trin196730	
Gren196979	Trin196731	
Gren196980	Trin196732	
Gren196999	Trin196733	
Gren197000	Trin196734	
Gren197001	Trin196888	
Gren197002		
Gren197003		
Gren197004		
Gren197005		
Gren197006		
Gren197007		
Gren197008		
Gren197017		
Gren197044		
StVn056421		
StVn056490		
StVn056561		
StVn056562		
StVn056612		
*StVn056613		
StVn196894		
StVn196895		
StVn196896		
StVn196897		
StVn196898		
StVn196899		
StVn196900		

Table VII. Base composition percentages of 16S mtDNA gene sequences (averages among samples from each taxa).

	validus	*pallidirostris*	podicipinus	*wagneri*	*chaquensis*	*knudseni*	All taxa
A	0.34790	0.34899	0.34436	0.35052	0.35491	0.34591	0.34791
T	0.23839	0.23906	0.23703	0.23859	0.25747	0.23772	0.23863
G	0.17936	0.17859	0.17840	0.17752	0.18065	0.17438	0.17913
C	0.23435	0.23337	0.24024	0.23336	0.20697	0.24199	0.23433

Table VIII. Pair-wise genetic distances for the 16S dataset. Distances corrected using the general time-reversible model with gamma distributed rates for variable sites.

		1	2	3	4	5	6	7	8
1	Gren006881	-							
2	Gren006882	0.00000	-						
3	Gren006883	0.00000	0.00000	-					
4	Gren006939	0.00000	0.00000	0.00000	-				
5	Gren196977	0.00000	0.00000	0.00000	0.00000	-			
6	Gren196978	0.00000	0.00000	0.00000	0.00000	0.00000	-		
7	Gren196979	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-	
8	Gren196980	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-
9	Gren196999	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	Gren197000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
11	Gren197001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
12	Gren197002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
13	Gren197003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14	Gren197004	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
15	Gren197005	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
16	Gren197006	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
17	Gren197007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
18	Gren197008	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
19	Gren197017	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	Gren197044	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
21	StVn056421	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
22	StVn056490	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
23	StVn056561	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
24	StVn056562	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
25	StVn056612	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
26	StVn196895	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
27	StVn196896	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
28	StVn196897	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
29	StVn196898	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	StVn196899	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
31	StVn196900	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
32	Tobo186597	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
33	Trin196726	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
34	Trin196727	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
35	Trin196728	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
36	Trin196729	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
37	Trin196730	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
38	Trin196731	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
39	Trin196732	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
40	Trin196733	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
41	Trin196734	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
42	Trin196888	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
43	StVn056613	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
44	StVn196894	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
45	Trin175424	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
46	Tobo186596	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
47	Trin196886	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
48	Trin175410	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
49	Trin175620	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
50	Trin196735	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
51	pall207682	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360
52	pallWR8626	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725
53	wagn010616	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590
54	wagn012969	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723
55	wagn177351	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918
56	podicUC243	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
57	podicUC244	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
58	podicUC278	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794
59	podic53124	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222
60	chaq186524	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742
61	knuds13244	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754

		9	10	11	12	13	14	15	16
9	Gren196999	-							
10	Gren197000	0.00000	-						
11	Gren197001	0.00000	0.00000	-					
12	Gren197002	0.00000	0.00000	0.00000	-				
13	Gren197003	0.00000	0.00000	0.00000	0.00000	-			
14	Gren197004	0.00000	0.00000	0.00000	0.00000	0.00000	-		
15	Gren197005	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-	
16	Gren197006	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-
17	Gren197007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
18	Gren197008	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
19	Gren197017	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	Gren197044	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
21	StVn056421	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
22	StVn056490	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
23	StVn056561	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
24	StVn056562	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
25	StVn056612	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
26	StVn196895	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
27	StVn196896	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
28	StVn196897	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
29	StVn196898	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	StVn196899	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
31	StVn196900	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
32	Tobo186597	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
33	Trin196726	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
34	Trin196727	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
35	Trin196728	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
36	Trin196729	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
37	Trin196730	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
38	Trin196731	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
39	Trin196732	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
40	Trin196733	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
41	Trin196734	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
42	Trin196888	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
43	StVn056613	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
44	StVn196894	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
45	Trin175424	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
46	Tobo186596	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
47	Trin196886	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
48	Trin175410	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
49	Trin175620	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
50	Trin196735	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
51	pall207682	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360
52	pallWR8626	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725
53	wagn010616	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590
54	wagn012969	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723
55	wagn177351	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918
56	podicUC243	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
57	podicUC244	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
58	podicUC278	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794
59	podic53124	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222
60	chaq186524	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742
61	knuds13244	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754

		17	18	19	20	21	22	23	24
17	Gren197007	-							
18	Gren197008	0.00000	-						
19	Gren197017	0.00000	0.00000	-					
20	Gren197044	0.00000	0.00000	0.00000	-				
21	StVn056421	0.00000	0.00000	0.00000	0.00000	-			
22	StVn056490	0.00000	0.00000	0.00000	0.00000	0.00000	-		
23	StVn056561	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-	
24	StVn056562	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-
25	StVn056612	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
26	StVn196895	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
27	StVn196896	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
28	StVn196897	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
29	StVn196898	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	StVn196899	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
31	StVn196900	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
32	Tobo186597	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
33	Trin196726	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
34	Trin196727	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
35	Trin196728	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
36	Trin196729	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
37	Trin196730	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
38	Trin196731	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
39	Trin196732	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
40	Trin196733	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
41	Trin196734	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
42	Trin196888	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
43	StVn056613	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
44	StVn196894	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
45	Trin175424	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
46	Tobo186596	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
47	Trin196886	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359
48	Trin175410	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
49	Trin175620	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
50	Trin196735	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287
51	pall207682	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360
52	pallWR8626	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725
53	wagn010616	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590
54	wagn012969	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723
55	wagn177351	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918
56	podicUC243	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
57	podicUC244	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
58	podicUC278	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794
59	podic53124	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222
60	chaq186524	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742
61	knuds13244	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754

	25	26	27	28	29	30	31	32
25 StVn056612	-							
26 StVn196895	0.00000	-						
27 StVn196896	0.00000	0.00000	-					
28 StVn196897	0.00000	0.00000	0.00000	-				
29 StVn196898	0.00000	0.00000	0.00000	0.00000	-			
30 StVn196899	0.00000	0.00000	0.00000	0.00000	0.00000	-		
31 StVn196900	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-	
32 Tobo186597	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	-
33 Trin196726	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
34 Trin196727	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
35 Trin196728	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
36 Trin196729	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
37 Trin196730	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
38 Trin196731	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
39 Trin196732	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
40 Trin196733	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
41 Trin196734	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
42 Trin196888	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
43 StVn056613	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00359
44 StVn196894	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00359
45 Trin175424	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
46 Tobo186596	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00000
47 Trin196886	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00359	0.00288
48 Trin175410	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00143
49 Trin175620	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00215
50 Trin196735	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00287	0.00215
51 pall207682	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00287
52 pallWR8626	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00725	0.00653
53 wagn010616	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09590	0.09472
54 wagn012969	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09723	0.09603
55 wagn177351	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09918	0.09799
56 podicUC243	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15602
57 podicUC244	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15602
58 podicUC278	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16794	0.16580
59 podic53124	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16222	0.16000
60 chaq186524	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20742	0.20429
61 knuds13244	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26754	0.26373

	33	34	35	36	37	38	39	40
33 Trin196726	-							
34 Trin196727	0.00000	-						
35 Trin196728	0.00000	0.00000	-					
36 Trin196729	0.00000	0.00000	0.00000	-				
37 Trin196730	0.00000	0.00000	0.00000	0.00000	-			
38 Trin196731	0.00000	0.00000	0.00000	0.00000	0.00000	-		
39 Trin196732	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-	
40 Trin196733	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-
41 Trin196734	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
42 Trin196888	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
43 StVn056613	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
44 StVn196894	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215
45 Trin175424	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
46 Tobo186596	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143
47 Trin196886	0.00144	0.00144	0.00144	0.00144	0.00144	0.00144	0.00144	0.00144
48 Trin175410	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
49 Trin175620	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071
50 Trin196735	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071	0.00071
51 pall207682	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143
52 pallWR8626	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506
53 wagn010616	0.09245	0.09245	0.09245	0.09245	0.09245	0.09245	0.09245	0.09245
54 wagn012969	0.09373	0.09373	0.09373	0.09373	0.09373	0.09373	0.09373	0.09373
55 wagn177351	0.09569	0.09569	0.09569	0.09569	0.09569	0.09569	0.09569	0.09569
56 podicUC243	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544
57 podicUC244	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544	0.15544
58 podicUC278	0.16514	0.16514	0.16514	0.16514	0.16514	0.16514	0.16514	0.16514
59 podic53124	0.15941	0.15941	0.15941	0.15941	0.15941	0.15941	0.15941	0.15941
60 chaq186524	0.20757	0.20757	0.20757	0.20757	0.20757	0.20757	0.20757	0.20757
61 knuds13244	0.26297	0.26297	0.26297	0.26297	0.26297	0.26297	0.26297	0.26297

	41	42	43	44	45	46	47	48
41 Trin196734	-							
42 Trin196888	0.00000	-						
43 StVn056613	0.00215	0.00215	-					
44 StVn196894	0.00215	0.00215	0.00000	-				
45 Trin175424	0.00000	0.00000	0.00215	0.00215	-			
46 Tobo186596	0.00143	0.00143	0.00359	0.00359	0.00143	-		
47 Trin196886	0.00144	0.00144	0.00359	0.00359	0.00144	0.00288	-	
48 Trin175410	0.00000	0.00000	0.00215	0.00215	0.00000	0.00143	0.00144	-
49 Trin175620	0.00071	0.00071	0.00287	0.00287	0.00071	0.00215	0.00216	0.00071
50 Trin196735	0.00071	0.00071	0.00287	0.00287	0.00071	0.00215	0.00215	0.00072
51 pall207682	0.00143	0.00143	0.00360	0.00360	0.00143	0.00287	0.00287	0.00143
52 pallWR8626	0.00506	0.00506	0.00725	0.00725	0.00506	0.00653	0.00655	0.00506
53 wagn010616	0.09245	0.09245	0.09590	0.09590	0.09245	0.09472	0.09245	0.09248
54 wagn012969	0.09373	0.09373	0.09723	0.09723	0.09373	0.09603	0.09373	0.09376
55 wagn177351	0.09569	0.09569	0.09918	0.09918	0.09569	0.09799	0.09569	0.09572
56 podicUC243	0.15544	0.15544	0.15815	0.15815	0.15544	0.15602	0.15222	0.15445
57 podicUC244	0.15544	0.15544	0.15815	0.15815	0.15544	0.15602	0.15222	0.15445
58 podicUC278	0.16514	0.16514	0.16794	0.16794	0.16514	0.16580	0.16172	0.16413
59 podic53124	0.15941	0.15941	0.16222	0.16222	0.15941	0.16000	0.15612	0.15842
60 chaq186524	0.20757	0.20757	0.20742	0.20742	0.20757	0.20429	0.20961	0.20771
61 knuds13244	0.26297	0.26297	0.26754	0.26754	0.26297	0.26373	0.26098	0.26319

	49	50	51	52	53	54	55	56
49 Trin175620	-							
50 Trin196735	0.00143	-						
51 pall207682	0.00215	0.00215	-					
52 pallWR8626	0.00580	0.00578	0.00506	-				
53 wagn010616	0.09116	0.09344	0.09252	0.08836	-			
54 wagn012969	0.09513	0.09471	0.09380	0.08959	0.01731	-		
55 wagn177351	0.09438	0.09668	0.09574	0.09153	0.00215	0.01655	-	
56 podicUC243	0.15283	0.15672	0.15462	0.15340	0.14229	0.13983	0.14388	-
57 podicUC244	0.15283	0.15672	0.15462	0.15340	0.14229	0.13983	0.14388	0.00000
58 podicUC278	0.16241	0.16470	0.16430	0.16301	0.14912	0.14805	0.15081	0.00879
59 podic53124	0.15677	0.15897	0.15859	0.15736	0.15219	0.14994	0.15386	0.01954
60 chaq186524	0.20559	0.20620	0.20792	0.20196	0.21247	0.22312	0.21427	0.17661
61 knuds13244	0.26102	0.26460	0.26618	0.25933	0.28386	0.28525	0.28761	0.26021

	57	58	59	60	61
57 podicUC244	-				
58 podicUC278	0.00879	-			
59 podic53124	0.01954	0.02104	-		
60 chaq186524	0.17661	0.17904	0.17989	-	
61 knuds13244	0.26021	0.26906	0.26391	0.20697	-

Table IX. Absolute base differences among samples for the 16S dataset.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Gren006881	-														
2	Gren006882	0	-													
3	Gren006883	0	0	-												
4	Gren006939	0	0	0	-											
5	Gren196977	0	0	0	0	-										
6	Gren196978	0	0	0	0	0	-									
7	Gren196979	0	0	0	0	0	0	-								
8	Gren196980	0	0	0	0	0	0	0	-							
9	Gren196999	0	0	0	0	0	0	0	0	-						
10	Gren197000	0	0	0	0	0	0	0	0	0	-					
11	Gren197001	0	0	0	0	0	0	0	0	0	0	-				
12	Gren197002	0	0	0	0	0	0	0	0	0	0	0	-			
13	Gren197003	0	0	0	0	0	0	0	0	0	0	0	0	-		
14	Gren197004	0	0	0	0	0	0	0	0	0	0	0	0	0	-	
15	Gren197005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
16	Gren197006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Gren197007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Gren197008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Gren197017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Gren197044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	StVn056421	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	StVn056490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	StVn056561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	StVn056562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	StVn056612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	StVn196895	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	StVn196896	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	StVn196897	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	StVn196898	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	StVn196899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	StVn196900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Tobo186597	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
33	Trin196726	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
34	Trin196727	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
35	Trin196728	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
36	Trin196729	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
37	Trin196730	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
38	Trin196731	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
39	Trin196732	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
40	Trin196733	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
41	Trin196734	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
42	Trin196888	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
43	StVn056613	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	StVn196894	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Trin175424	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
46	Tobo186596	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
47	Trin196886	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
48	Trin175410	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
49	Trin175620	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
50	Trin196735	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
51	pall207682	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
52	pallWR8626	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
53	wagn010616	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
54	wagn012969	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
55	wagn177351	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108
56	podicUC243	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
57	podicUC244	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
58	podicUC278	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166
59	podic53124	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163
60	chaq186524	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191
61	knuds13244	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
16 Gren197006	-														
17 Gren197007	0	-													
18 Gren197008	0	0	-												
19 Gren197017	0	0	0	-											
20 Gren197044	0	0	0	0	-										
21 StVn056421	0	0	0	0	0	-									
22 StVn056490	0	0	0	0	0	0	-								
23 StVn056561	0	0	0	0	0	0	0	-							
24 StVn056562	0	0	0	0	0	0	0	0	-						
25 StVn056612	0	0	0	0	0	0	0	0	0	-					
26 StVn196895	0	0	0	0	0	0	0	0	0	0	-				
27 StVn196896	0	0	0	0	0	0	0	0	0	0	0	-			
28 StVn196897	0	0	0	0	0	0	0	0	0	0	0	0	-		
29 StVn196898	0	0	0	0	0	0	0	0	0	0	0	0	0	-	
30 StVn196899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
31 StVn196900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 Tobo186597	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
33 Trin196726	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
34 Trin196727	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
35 Trin196728	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
36 Trin196729	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
37 Trin196730	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
38 Trin196731	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
39 Trin196732	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
40 Trin196733	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
41 Trin196734	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
42 Trin196888	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
43 StVn056613	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44 StVn196894	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 Trin175424	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
46 Tobo186596	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
47 Trin196886	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
48 Trin175410	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
49 Trin175620	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
50 Trin196735	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
51 pall207682	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
52 pallWR8626	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
53 wagn010616	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
54 wagn012969	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
55 wagn177351	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108
56 podicUC243	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
57 podicUC244	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
58 podicUC278	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166
59 podic53124	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163
60 chaq186524	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191
61 knuds13244	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
31 StVn196900	-														
32 Tobo186597	5	-													
33 Trin196726	3	2	-												
34 Trin196727	3	2	0	-											
35 Trin196728	3	2	0	0	-										
36 Trin196729	3	2	0	0	0	-									
37 Trin196730	3	2	0	0	0	0	-								
38 Trin196731	3	2	0	0	0	0	0	-							
39 Trin196732	3	2	0	0	0	0	0	0	-						
40 Trin196733	3	2	0	0	0	0	0	0	0	-					
41 Trin196734	3	2	0	0	0	0	0	0	0	0	-				
42 Trin196888	3	2	0	0	0	0	0	0	0	0	0	-			
43 StVn056613	0	5	3	3	3	3	3	3	3	3	3	3	-		
44 StVn196894	0	5	3	3	3	3	3	3	3	3	3	3	0	-	
45 Trin175424	3	2	0	0	0	0	0	0	0	0	0	0	3	3	-
46 Tobo186596	5	0	2	2	2	2	2	2	2	2	2	2	5	5	2
47 Trin196886	5	4	2	2	2	2	2	2	2	2	2	2	5	5	2
48 Trin175410	3	2	0	0	0	0	0	0	0	0	0	0	3	3	0
49 Trin175620	4	3	1	1	1	1	1	1	1	1	1	1	4	4	1
50 Trin196735	4	3	1	1	1	1	1	1	1	1	1	1	4	4	1
51 pal1207682	5	4	2	2	2	2	2	2	2	2	2	2	5	5	2
52 pallWR8626	10	9	7	7	7	7	7	7	7	7	7	7	10	10	7
53 wagn010616	105	104	102	102	102	102	102	102	102	102	102	102	105	105	102
54 wagn012969	105	104	102	102	102	102	102	102	102	102	102	102	105	105	102
55 wagn177351	*108*	*107*	*105*	*105*	*105*	*105*	*105*	*105*	*105*	*105*	*105*	*105*	*108*	*108*	*105*
56 podicUC243	160	158	158	158	158	158	158	158	158	158	158	158	160	160	158
57 podicUC244	160	158	158	158	158	158	158	158	158	158	158	158	160	160	158
58 podicUC278	166	164	164	164	164	164	164	164	164	164	164	164	166	166	164
59 podic53124	163	161	161	161	161	161	161	161	161	161	161	161	163	163	161
60 chaq186524	191	189	191	191	191	191	191	191	191	191	191	191	191	191	191
61 knuds13244	236	233	233	233	233	233	233	233	233	233	233	233	236	236	233

	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
46 Tobo186596	-														
47 Trin196886	4	-													
48 Trin175410	2	2	-												
49 Trin175620	3	3	1	-											
50 Trin196735	3	3	1	2	-										
51 pal1207682	4	4	2	3	3	-									
52 pallWR8626	9	9	7	8	8	7	-								
53 wagn010616	104	102	102	101	103	102	98	-							
54 wagn012969	104	102	102	103	103	102	98	23	-						
55 wagn177351	107	105	105	104	106	105	101	3	22	-					
56 podicUC243	158	156	157	156	159	157	156	147	143	148	-				
57 podicUC244	158	156	157	156	159	157	156	147	143	148	0	-			
58 podicUC278	164	162	163	162	164	163	162	151	148	152	12	12	-		
59 podic53124	161	159	160	159	161	160	159	154	150	155	26	26	28	-	
60 chaq186524	189	192	191	190	190	191	187	192	198	193	172	172	174	175	-
61 knuds13244	233	232	233	232	234	235	231	242	242	244	230	230	235	233	196

	61
61 knuds13244	-

Table X. Combined sequence haplotypes for *L. validus* samples from: Grenada (Gren), St. Vincent (StVn), Tobago (Tobo), and Trinidad (Trin). Haplotypes A—D represent multiple samples. Samples used to represent each haplotype are indicated by an asterisk. Haplotypes E—K each consist of a single sample: (E) Trin175410, (F) Trin175424, (G) Trin175620, (H) Trin196728, (I) Trin196729, (J) Trin196735, and (K) Trin196886.

A	B	C	D
Gren006881	Gren196977	*Trin196726	*Tobo186596
Gren006882	Gren196979	Trin196727	Tobo186597
Gren006883	Gren196980	Trin196730	
Gren006939	Gren197000	Trin196731	
Gren196978	Gren197001	Trin196732	
Gren196999	Gren197002	Trin196733	
Gren197005	Gren197003	Trin196734	
Gren197006	Gren197004	Trin196888	
Gren197017	Gren197007		
StVn056421	Gren197008		
StVn056490	Gren197044		
StVn056561	StVn196894		
StVn056562	*StVn196896		
StVn056612	StVn196897		
*StVn056613	StVn196899		
StVn196895	StVn196900		
StVn196898			

Table XI. Pair-wise genetic distances for the combined dataset. Distances corrected using the general time-reversible model with gamma distributed rates for variable sites.

		1	2	3	4	5	6	7	8
1	Gren006881	-							
2	Gren006882	0.00000	-						
3	Gren006883	0.00000	0.00000	-					
4	Gren006939	0.00000	0.00000	0.00000	-				
5	Gren196977	0.00045	0.00045	0.00045	0.00045	-			
6	Gren196978	0.00000	0.00000	0.00000	0.00000	0.00045	-		
7	Gren196979	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	-	
8	Gren196980	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	-
9	Gren196999	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
10	Gren197000	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
11	Gren197001	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
12	Gren197002	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
13	Gren197003	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
14	Gren197004	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
15	Gren197005	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
16	Gren197006	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
17	Gren197007	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
18	Gren197008	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
19	Gren197017	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
20	Gren197044	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
21	StVn056421	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
22	StVn056490	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
23	StVn056561	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
24	StVn056562	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
25	StVn056612	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
26	StVn196895	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
27	StVn196896	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
28	StVn196897	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
29	StVn196898	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
30	StVn196899	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
31	StVn196900	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
32	Tobo186597	0.00225	0.00225	0.00225	0.00225	0.00271	0.00225	0.00271	0.00271
33	Trin196726	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
34	Trin196727	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
35	Trin196728	0.00225	0.00225	0.00225	0.00225	0.00180	0.00225	0.00180	0.00180
36	Trin196729	0.00135	0.00135	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180
37	Trin196730	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
38	Trin196731	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
39	Trin196732	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
40	Trin196733	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
41	Trin196734	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
42	Trin196888	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
43	StVn056613	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045
44	StVn196894	0.00045	0.00045	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000
45	Trin175424	0.00225	0.00225	0.00225	0.00225	0.00271	0.00225	0.00271	0.00271
46	Tobo186596	0.00225	0.00225	0.00225	0.00225	0.00271	0.00225	0.00271	0.00271
47	Trin196886	0.00271	0.00271	0.00271	0.00271	0.00316	0.00271	0.00316	0.00316
48	Trin175410	0.00180	0.00180	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135
49	Trin175620	0.00225	0.00225	0.00225	0.00225	0.00180	0.00225	0.00180	0.00180
50	Trin196735	0.00226	0.00226	0.00226	0.00226	0.00180	0.00226	0.00180	0.00180
51	pall207682	0.00271	0.00271	0.00271	0.00271	0.00317	0.00271	0.00317	0.00317
52	pallWR8626	0.00591	0.00591	0.00591	0.00591	0.00637	0.00591	0.00637	0.00637
53	wagn010616	0.07859	0.07859	0.07859	0.07859	0.07917	0.07859	0.07917	0.07917
54	wagn012969	0.07983	0.07983	0.07983	0.07983	0.08041	0.07983	0.08041	0.08041
55	wagn177351	0.07974	0.07974	0.07974	0.07974	0.08032	0.07974	0.08032	0.08032
56	podicUC243	0.13826	0.13826	0.13826	0.13826	0.13899	0.13826	0.13899	0.13899
57	podicUC244	0.13761	0.13761	0.13761	0.13761	0.13834	0.13761	0.13834	0.13834
58	podicUC278	0.14460	0.14460	0.14460	0.14460	0.14535	0.14460	0.14535	0.14535
59	podic53124	0.14119	0.14119	0.14119	0.14119	0.14194	0.14119	0.14194	0.14194
60	chaq186524	0.17386	0.17386	0.17386	0.17386	0.17424	0.17386	0.17424	0.17424
61	knuds13244	0.22738	0.22738	0.22738	0.22738	0.22830	0.22738	0.22830	0.22830

		9	10	11	12	13	14	15	16
9	Gren196999	-							
10	Gren197000	0.00045	-						
11	Gren197001	0.00045	0.00000	-					
12	Gren197002	0.00045	0.00000	0.00000	-				
13	Gren197003	0.00045	0.00000	0.00000	0.00000	-			
14	Gren197004	0.00045	0.00000	0.00000	0.00000	0.00000	-		
15	Gren197005	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	-	
16	Gren197006	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	-
17	Gren197007	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
18	Gren197008	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
19	Gren197017	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
20	Gren197044	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
21	StVn056421	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
22	StVn056490	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
23	StVn056561	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
24	StVn056562	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
25	StVn056612	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
26	StVn196895	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
27	StVn196896	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
28	StVn196897	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
29	StVn196898	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
30	StVn196899	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
31	StVn196900	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
32	Tobo186597	0.00225	0.00271	0.00271	0.00271	0.00271	0.00271	0.00225	0.00225
33	Trin196726	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
34	Trin196727	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
35	Trin196728	0.00225	0.00180	0.00180	0.00180	0.00180	0.00180	0.00225	0.00225
36	Trin196729	0.00135	0.00180	0.00180	0.00180	0.00180	0.00180	0.00135	0.00135
37	Trin196730	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
38	Trin196731	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
39	Trin196732	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
40	Trin196733	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
41	Trin196734	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
42	Trin196888	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
43	StVn056613	0.00000	0.00045	0.00045	0.00045	0.00045	0.00045	0.00000	0.00000
44	StVn196894	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00045
45	Trin175424	0.00225	0.00271	0.00271	0.00271	0.00271	0.00271	0.00225	0.00225
46	Tobo186596	0.00225	0.00271	0.00271	0.00271	0.00271	0.00271	0.00225	0.00225
47	Trin196886	0.00271	0.00316	0.00316	0.00316	0.00316	0.00316	0.00271	0.00271
48	Trin175410	0.00180	0.00135	0.00135	0.00135	0.00135	0.00135	0.00180	0.00180
49	Trin175620	0.00225	0.00180	0.00180	0.00180	0.00180	0.00180	0.00225	0.00225
50	Trin196735	0.00226	0.00180	0.00180	0.00180	0.00180	0.00180	0.00226	0.00226
51	pal1207682	0.00271	0.00317	0.00317	0.00317	0.00317	0.00317	0.00271	0.00271
52	pallWR8626	0.00591	0.00637	0.00637	0.00637	0.00637	0.00637	0.00591	0.00591
53	wagn010616	0.07859	0.07917	0.07917	0.07917	0.07917	0.07917	0.07859	0.07859
54	wagn012969	0.07983	0.08041	0.08041	0.08041	0.08041	0.08041	0.07983	0.07983
55	wagn177351	0.07974	0.08032	0.08032	0.08032	0.08032	0.08032	0.07974	0.07974
56	podicUC243	0.13826	0.13899	0.13899	0.13899	0.13899	0.13899	0.13826	0.13826
57	podicUC244	0.13761	0.13834	0.13834	0.13834	0.13834	0.13834	0.13761	0.13761
58	podicUC278	0.14460	0.14535	0.14535	0.14535	0.14535	0.14535	0.14460	0.14460
59	podic53124	0.14119	0.14194	0.14194	0.14194	0.14194	0.14194	0.14119	0.14119
60	chaq186524	0.17386	0.17424	0.17424	0.17424	0.17424	0.17424	0.17386	0.17386
61	knuds13244	0.22738	0.22830	0.22830	0.22830	0.22830	0.22830	0.22738	0.22738

		17	18	19	20	21	22	23	24
17	Gren197007	-							
18	Gren197008	0.00000	-						
19	Gren197017	0.00045	0.00045	-					
20	Gren197044	0.00000	0.00000	0.00045	-				
21	StVn056421	0.00045	0.00045	0.00000	0.00045	-			
22	StVn056490	0.00045	0.00045	0.00000	0.00045	0.00000	-		
23	StVn056561	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	-	
24	StVn056562	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	0.00000	-
25	StVn056612	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	0.00000	0.00000
26	StVn196895	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	0.00000	0.00000
27	StVn196896	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045	0.00045	0.00045
28	StVn196897	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045	0.00045	0.00045
29	StVn196898	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	0.00000	0.00000
30	StVn196899	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045	0.00045	0.00045
31	StVn196900	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045	0.00045	0.00045
32	Tobo186597	0.00271	0.00271	0.00225	0.00271	0.00225	0.00225	0.00225	0.00225
33	Trin196726	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
34	Trin196727	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
35	Trin196728	0.00180	0.00180	0.00225	0.00180	0.00225	0.00225	0.00225	0.00225
36	Trin196729	0.00180	0.00180	0.00135	0.00180	0.00135	0.00135	0.00135	0.00135
37	Trin196730	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
38	Trin196731	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
39	Trin196732	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
40	Trin196733	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
41	Trin196734	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
42	Trin196888	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
43	StVn056613	0.00045	0.00045	0.00000	0.00045	0.00000	0.00000	0.00000	0.00000
44	StVn196894	0.00000	0.00000	0.00045	0.00000	0.00045	0.00045	0.00045	0.00045
45	Trin175424	0.00271	0.00271	0.00225	0.00271	0.00225	0.00225	0.00225	0.00225
46	Tobo186596	0.00271	0.00271	0.00225	0.00271	0.00225	0.00225	0.00225	0.00225
47	Trin196886	0.00316	0.00316	0.00271	0.00316	0.00271	0.00271	0.00271	0.00271
48	Trin175410	0.00135	0.00135	0.00180	0.00135	0.00180	0.00180	0.00180	0.00180
49	Trin175620	0.00180	0.00180	0.00225	0.00180	0.00225	0.00225	0.00225	0.00225
50	Trin196735	0.00180	0.00180	0.00226	0.00180	0.00226	0.00226	0.00226	0.00226
51	pall207682	0.00317	0.00317	0.00271	0.00317	0.00271	0.00271	0.00271	0.00271
52	pallWR8626	0.00637	0.00637	0.00591	0.00637	0.00591	0.00591	0.00591	0.00591
53	wagn010616	0.07917	0.07917	0.07859	0.07917	0.07859	0.07859	0.07859	0.07859
54	wagn012969	0.08041	0.08041	0.07983	0.08041	0.07983	0.07983	0.07983	0.07983
55	wagn177351	0.08032	0.08032	0.07974	0.08032	0.07974	0.07974	0.07974	0.07974
56	podicUC243	0.13899	0.13899	0.13826	0.13899	0.13826	0.13826	0.13826	0.13826
57	podicUC244	0.13834	0.13834	0.13761	0.13834	0.13761	0.13761	0.13761	0.13761
58	podicUC278	0.14535	0.14535	0.14460	0.14535	0.14460	0.14460	0.14460	0.14460
59	podic53124	0.14194	0.14194	0.14119	0.14194	0.14119	0.14119	0.14119	0.14119
60	chaq186524	0.17424	0.17424	0.17386	0.17424	0.17386	0.17386	0.17386	0.17386
61	knuds13244	0.22830	0.22830	0.22738	0.22830	0.22738	0.22738	0.22738	0.22738

		25	26	27	28	29	30	31	32
25	StVn056612	-							
26	StVn196895	0.00000	-						
27	StVn196896	0.00045	0.00045	-					
28	StVn196897	0.00045	0.00045	0.00000	-				
29	StVn196898	0.00000	0.00000	0.00045	0.00045	-			
30	StVn196899	0.00045	0.00045	0.00000	0.00000	0.00045	-		
31	StVn196900	0.00045	0.00045	0.00000	0.00000	0.00045	0.00000	-	
32	Tobo186597	0.00225	0.00225	0.00271	0.00271	0.00225	0.00271	0.00271	-
33	Trin196726	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
34	Trin196727	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
35	Trin196728	0.00225	0.00225	0.00180	0.00180	0.00225	0.00180	0.00180	0.00180
36	Trin196729	0.00135	0.00135	0.00180	0.00180	0.00135	0.00180	0.00180	0.00090
37	Trin196730	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
38	Trin196731	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
39	Trin196732	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
40	Trin196733	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
41	Trin196734	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
42	Trin196888	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
43	StVn056613	0.00000	0.00000	0.00045	0.00045	0.00000	0.00045	0.00045	0.00225
44	StVn196894	0.00045	0.00045	0.00000	0.00000	0.00045	0.00000	0.00000	0.00271
45	Trin175424	0.00225	0.00225	0.00271	0.00271	0.00225	0.00271	0.00271	0.00180
46	Tobo186596	0.00225	0.00225	0.00271	0.00271	0.00225	0.00271	0.00271	0.00000
47	Trin196886	0.00271	0.00271	0.00316	0.00316	0.00271	0.00316	0.00316	0.00226
48	Trin175410	0.00180	0.00180	0.00135	0.00135	0.00180	0.00135	0.00135	0.00135
49	Trin175620	0.00225	0.00225	0.00180	0.00180	0.00225	0.00180	0.00180	0.00180
50	Trin196735	0.00226	0.00226	0.00180	0.00180	0.00226	0.00180	0.00180	0.00180
51	pall207682	0.00271	0.00271	0.00317	0.00317	0.00271	0.00317	0.00317	0.00225
52	pallWR8626	0.00591	0.00591	0.00637	0.00637	0.00591	0.00637	0.00637	0.00546
53	wagn010616	0.07859	0.07859	0.07917	0.07917	0.07859	0.07917	0.07917	0.07788
54	wagn012969	0.07983	0.07983	0.08041	0.08041	0.07983	0.08041	0.08041	0.07912
55	wagn177351	0.07974	0.07974	0.08032	0.08032	0.07974	0.08032	0.08032	0.07903
56	podicUC243	0.13826	0.13826	0.13899	0.13899	0.13826	0.13899	0.13899	0.13694
57	podicUC244	0.13761	0.13761	0.13834	0.13834	0.13761	0.13834	0.13834	0.13630
58	podicUC278	0.14460	0.14460	0.14535	0.14535	0.14460	0.14535	0.14535	0.14327
59	podic53124	0.14119	0.14119	0.14194	0.14194	0.14119	0.14194	0.14194	0.13986
60	chaq186524	0.17386	0.17386	0.17424	0.17424	0.17386	0.17424	0.17424	0.17211
61	knuds13244	0.22738	0.22738	0.22830	0.22830	0.22738	0.22830	0.22830	0.22517

	33	34	35	36	37	38	39	40
33 Trin196726	-							
34 Trin196727	0.00000	-						
35 Trin196728	0.00045	0.00045	-					
36 Trin196729	0.00045	0.00045	0.00090	-				
37 Trin196730	0.00000	0.00000	0.00045	0.00045	-			
38 Trin196731	0.00000	0.00000	0.00045	0.00045	0.00000	-		
39 Trin196732	0.00000	0.00000	0.00045	0.00045	0.00000	0.00000	-	
40 Trin196733	0.00000	0.00000	0.00045	0.00045	0.00000	0.00000	0.00000	-
41 Trin196734	0.00000	0.00000	0.00045	0.00045	0.00000	0.00000	0.00000	0.00000
42 Trin196888	0.00000	0.00000	0.00045	0.00045	0.00000	0.00000	0.00000	0.00000
43 StVn056613	0.00180	0.00180	0.00225	0.00135	0.00180	0.00180	0.00180	0.00180
44 StVn196894	0.00135	0.00135	0.00180	0.00180	0.00135	0.00135	0.00135	0.00135
45 Trin175424	0.00135	0.00135	0.00180	0.00090	0.00135	0.00135	0.00135	0.00135
46 Tobo186596	0.00135	0.00135	0.00180	0.00090	0.00135	0.00135	0.00135	0.00135
47 Trin196886	0.00180	0.00180	0.00226	0.00135	0.00180	0.00180	0.00180	0.00180
48 Trin175410	0.00000	0.00000	0.00045	0.00045	0.00000	0.00000	0.00000	0.00000
49 Trin175620	0.00045	0.00045	0.00090	0.00090	0.00045	0.00045	0.00045	0.00045
50 Trin196735	0.00045	0.00045	0.00090	0.00090	0.00045	0.00045	0.00045	0.00045
51 pall207682	0.00180	0.00180	0.00225	0.00135	0.00180	0.00180	0.00180	0.00180
52 pallWR8626	0.00500	0.00500	0.00546	0.00454	0.00500	0.00500	0.00500	0.00500
53 wagn010616	0.07714	0.07714	0.07790	0.07656	0.07714	0.07714	0.07714	0.07714
54 wagn012969	0.07836	0.07836	0.07914	0.07778	0.07836	0.07836	0.07836	0.07836
55 wagn177351	0.07828	0.07828	0.07905	0.07770	0.07828	0.07828	0.07828	0.07828
56 podicUC243	0.13735	0.13735	0.13730	0.13662	0.13735	0.13735	0.13735	0.13735
57 podicUC244	0.13670	0.13670	0.13666	0.13597	0.13670	0.13670	0.13670	0.13670
58 podicUC278	0.14366	0.14366	0.14363	0.14292	0.14366	0.14366	0.14366	0.14366
59 podic53124	0.14026	0.14026	0.14019	0.13951	0.14026	0.14026	0.14026	0.14026
60 chaq186524	0.17434	0.17434	0.17551	0.17396	0.17434	0.17434	0.17434	0.17434
61 knuds13244	0.22565	0.22565	0.22440	0.22474	0.22565	0.22565	0.22565	0.22565

	41	42	43	44	45	46	47	48
41 Trin196734	-							
42 Trin196888	0.00000	-						
43 StVn056613	0.00180	0.00180	-					
44 StVn196894	0.00135	0.00135	0.00045	-				
45 Trin175424	0.00135	0.00135	0.00225	0.00271	-			
46 Tobo186596	0.00135	0.00135	0.00225	0.00271	0.00180	-		
47 Trin196886	0.00180	0.00180	0.00271	0.00316	0.00226	0.00226	-	
48 Trin175410	0.00000	0.00000	0.00180	0.00135	0.00135	0.00135	0.00181	-
49 Trin175620	0.00045	0.00045	0.00225	0.00180	0.00180	0.00180	0.00226	0.00045
50 Trin196735	0.00045	0.00045	0.00226	0.00180	0.00180	0.00180	0.00226	0.00045
51 pall207682	0.00180	0.00180	0.00271	0.00317	0.00225	0.00225	0.00271	0.00180
52 pallWR8626	0.00500	0.00500	0.00591	0.00637	0.00546	0.00546	0.00595	0.00500
53 wagn010616	0.07714	0.07714	0.07859	0.07917	0.07788	0.07788	0.07732	0.07715
54 wagn012969	0.07836	0.07836	0.07983	0.08041	0.07911	0.07912	0.07856	0.07838
55 wagn177351	0.07828	0.07828	0.07974	0.08032	0.07903	0.07903	0.07847	0.07830
56 podicUC243	0.13735	0.13735	0.13826	0.13899	0.13630	0.13694	0.13564	0.13675
57 podicUC244	0.13670	0.13670	0.13761	0.13834	0.13566	0.13630	0.13500	0.13611
58 podicUC278	0.14366	0.14366	0.14460	0.14535	0.14259	0.14327	0.14192	0.14305
59 podic53124	0.14026	0.14026	0.14119	0.14194	0.13918	0.13986	0.13852	0.13966
60 chaq186524	0.17434	0.17434	0.17386	0.17424	0.17351	0.17211	0.17389	0.17441
61 knuds13244	0.22565	0.22565	0.22738	0.22830	0.22683	0.22517	0.22475	0.22576

	49	50	51	52	53	54	55	56
49 Trin175620	-							
50 Trin196735	0.00090	-						
51 pall207682	0.00225	0.00226	-					
52 pallWR8626	0.00547	0.00546	0.00409	-				
53 wagn010616	0.07639	0.07773	0.07658	0.07412	-			
54 wagn012969	0.07916	0.07896	0.07780	0.07686	0.01651	-		
55 wagn177351	0.07754	0.07888	0.07773	0.07525	0.00226	0.01600	-	
56 podicUC243	0.13579	0.13811	0.13585	0.13517	0.12881	0.12854	0.13078	-
57 podicUC244	0.13514	0.13747	0.13521	0.13453	0.12816	0.12791	0.13013	0.00045
58 podicUC278	0.14206	0.14339	0.14213	0.14143	0.13226	0.13405	0.13431	0.00781
59 podic53124	0.13868	0.13997	0.13873	0.13803	0.13389	0.13507	0.13594	0.01491
60 chaq186524	0.17326	0.17353	0.17501	0.16933	0.16905	0.17899	0.17048	0.15571
61 knuds13244	0.22452	0.22661	0.22664	0.22271	0.23176	0.23572	0.23535	0.21656

	57	58	59	60	61
57 podicUC244	-				
58 podicUC278	0.00734	-			
59 podic53124	0.01444	0.01636	-		
60 chaq186524	0.15503	0.15858	0.15744	-	
61 knuds13244	0.21573	0.22178	0.21699	0.17204	-

Table XII. Absolute base differences among samples for the combined dataset.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Gren006881	-														
2	Gren006882	0	-													
3	Gren006883	0	0	-												
4	Gren006939	0	0	0	-											
5	Gren196977	1	1	1	1	-										
6	Gren196978	0	0	0	0	1	-									
7	Gren196979	1	1	1	1	0	1	-								
8	Gren196980	1	1	1	1	0	1	0	-							
9	Gren196999	0	0	0	0	1	0	1	1	-						
10	Gren197000	1	1	1	1	0	1	0	0	1	-					
11	Gren197001	1	1	1	1	0	1	0	0	1	0	-				
12	Gren197002	1	1	1	1	0	1	0	0	1	0	0	-			
13	Gren197003	1	1	1	1	0	1	0	0	1	0	0	0	-		
14	Gren197004	1	1	1	1	0	1	0	0	1	0	0	0	0	-	
15	Gren197005	0	0	0	0	1	0	1	1	0	1	1	1	1	1	-
16	Gren197006	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
17	Gren197007	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
18	Gren197008	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
19	Gren197017	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
20	Gren197044	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
21	StVn056421	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
22	StVn056490	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
23	StVn056561	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
24	StVn056562	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
25	StVn056612	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
26	StVn196895	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
27	StVn196896	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
28	StVn196897	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
29	StVn196898	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
30	StVn196899	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
31	StVn196900	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
32	Tobo186597	5	5	5	5	6	5	6	6	5	6	6	6	6	6	5
33	Trin196726	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
34	Trin196727	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
35	Trin196728	5	5	5	5	4	5	4	4	5	4	4	4	4	4	5
36	Trin196729	3	3	3	3	4	3	4	4	3	4	4	4	4	4	3
37	Trin196730	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
38	Trin196731	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
39	Trin196732	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
40	Trin196733	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
41	Trin196734	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
42	Trin196888	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
43	StVn056613	0	0	0	0	1	0	1	1	0	1	1	1	1	1	0
44	StVn196894	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1
45	Trin175424	5	5	5	5	6	5	6	6	5	6	6	6	6	6	5
46	Tobo186596	5	5	5	5	6	5	6	6	5	6	6	6	6	6	5
47	Trin196886	6	6	6	6	7	6	7	7	6	7	7	7	7	7	6
48	Trin175410	4	4	4	4	3	4	3	3	4	3	3	3	3	3	4
49	Trin175620	5	5	5	5	4	5	4	4	5	4	4	4	4	4	5
50	Trin196735	5	5	5	5	4	5	4	4	5	4	4	4	4	4	5
51	pall207682	6	6	6	6	7	6	7	7	6	7	7	7	7	7	6
52	pallWR8626	13	13	13	13	14	13	14	14	13	14	14	14	14	14	13
53	wagn010616	142	142	142	142	143	142	143	143	142	143	143	143	143	143	142
54	wagn012969	143	143	143	143	144	143	144	144	143	144	144	144	144	144	143
55	wagn177351	144	144	144	144	145	144	145	145	144	145	145	145	145	145	144
56	podicUC243	228	228	228	228	229	228	229	229	228	229	229	229	229	229	228
57	podicUC244	227	227	227	227	228	227	228	228	227	228	228	228	228	228	227
58	podicUC278	235	235	235	235	236	235	236	236	235	236	236	236	236	236	235
59	podic53124	231	231	231	231	232	231	232	232	231	232	232	232	232	232	231
60	chaq186524	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269
61	knuds13244	335	335	335	335	336	335	336	336	335	336	336	336	336	336	335

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
16 Grenl97006	-														
17 Grenl97007	1	-													
18 Grenl97008	1	0	-												
19 Grenl97017	0	1	1	-											
20 Grenl97044	1	0	0	1	-										
21 StVn056421	0	1	1	0	1	-									
22 StVn056490	0	1	1	0	1	0	-								
23 StVn056561	0	1	1	0	1	0	0	-							
24 StVn056562	0	1	1	0	1	0	0	0	-						
25 StVn056612	0	1	1	0	1	0	0	0	0	-					
26 StVnl96895	0	1	1	0	1	0	0	0	0	0	-				
27 StVnl96896	1	0	0	1	0	1	1	1	1	1	1	-			
28 StVnl96897	1	0	0	1	0	1	1	1	1	1	1	0	-		
29 StVnl96898	0	1	1	0	1	0	0	0	0	0	0	1	1	-	
30 StVnl96899	1	0	0	1	0	1	1	1	1	1	1	0	0	1	-
31 StVnl96900	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
32 Tobol86597	5	6	6	5	6	5	5	5	5	5	5	6	6	5	6
33 Trinl96726	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
34 Trinl96727	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
35 Trinl96728	5	4	4	5	4	5	5	5	5	5	5	4	4	5	4
36 Trinl96729	3	4	4	3	4	3	3	3	3	3	3	4	4	3	4
37 Trinl96730	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
38 Trinl96731	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
39 Trinl96732	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
40 Trinl96733	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
41 Trinl96734	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
42 Trinl96888	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
43 StVn056613	0	1	1	0	1	0	0	0	0	0	0	1	1	0	1
44 StVnl96894	1	0	0	1	0	1	1	1	1	1	1	0	0	1	0
45 Trinl75424	5	6	6	5	6	5	5	5	5	5	5	6	6	5	6
46 Tobol86596	5	6	6	5	6	5	5	5	5	5	5	6	6	5	6
47 Trinl96886	6	7	7	6	7	6	6	6	6	6	6	7	7	6	7
48 Trinl75410	4	3	3	4	3	4	4	4	4	4	4	3	3	4	3
49 Trinl75620	5	4	4	5	4	5	5	5	5	5	5	4	4	5	4
50 Trinl96735	5	4	4	5	4	5	5	5	5	5	5	4	4	5	4
51 pall207682	6	7	7	6	7	6	6	6	6	6	6	7	7	6	7
52 pallWR8626	13	14	14	13	14	13	13	13	13	13	13	14	14	13	14
53 wagn010616	142	143	143	142	143	142	142	142	142	142	142	143	143	142	143
54 wagn012969	143	144	144	143	144	143	143	143	143	143	143	144	144	143	144
55 wagnl77351	144	145	145	144	145	144	144	144	144	144	144	145	145	144	145
56 podicUC243	228	229	229	228	229	228	228	228	228	228	228	229	229	228	229
57 podicUC244	227	228	228	227	228	227	227	227	227	227	227	228	228	227	228
58 podicUC278	235	236	236	235	236	235	235	235	235	235	235	236	236	235	236
59 podic53124	231	232	232	231	232	231	231	231	231	231	231	232	232	231	232
60 chaql86524	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269
61 knudsl3244	335	336	336	335	336	335	335	335	335	335	335	336	336	335	336

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
31 StVn196900	-														
32 Tobo186597	6	-													
33 Trin196726	3	3	-												
34 Trin196727	3	3	0	-											
35 Trin196728	4	4	1	1	-										
36 Trin196729	4	2	1	1	2	-									
37 Trin196730	3	3	0	0	1	1	-								
38 Trin196731	3	3	0	0	1	1	0	-							
39 Trin196732	3	3	0	0	1	1	0	0	-						
40 Trin196733	3	3	0	0	1	1	0	0	0	-					
41 Trin196734	3	3	0	0	1	1	0	0	0	0	-				
42 Trin196888	3	3	0	0	1	1	0	0	0	0	0	-			
43 StVn056613	1	5	4	4	5	3	4	4	4	4	4	4	-		
44 StVn196894	0	6	3	3	4	4	3	3	3	3	3	3	1	-	
45 Trin175424	6	4	3	3	4	2	3	3	3	3	3	3	5	6	-
46 Tobo186596	6	0	3	3	4	2	3	3	3	3	3	3	5	6	4
47 Trin196886	7	5	4	4	5	3	4	4	4	4	4	4	6	7	5
48 Trin175410	3	3	0	0	1	1	0	0	0	0	0	0	4	3	3
49 Trin175620	4	4	1	1	2	2	1	1	1	1	1	1	5	4	4
50 Trin196735	4	4	1	1	2	2	1	1	1	1	1	1	5	4	4
51 pall207682	7	5	4	4	5	3	4	4	4	4	4	4	6	7	5
52 pallWR8626	14	12	11	11	12	10	11	11	11	11	11	11	13	14	12
53 wagn010616	143	141	140	140	141	139	140	140	140	140	140	140	142	143	141
54 wagn012969	144	142	141	141	142	140	141	141	141	141	141	141	143	144	142
55 wagn177351	145	143	142	142	143	141	142	142	142	142	142	142	144	145	143
56 podicUC243	229	226	227	227	227	226	227	227	227	227	227	227	228	229	226
57 podicUC244	228	225	226	226	226	225	226	226	226	226	226	226	227	228	225
58 podicUC278	236	233	234	234	234	233	234	234	234	234	234	234	235	236	233
59 podic53124	232	229	230	230	230	229	230	230	230	230	230	230	231	232	229
60 chaq186524	269	267	269	269	270	269	269	269	269	269	269	269	269	269	269
61 knuds13244	336	332	333	333	332	332	333	333	333	333	333	333	335	336	334

	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
46 Tobo186596	-														
47 Trin196886	5	-													
48 Trin175410	3	4	-												
49 Trin175620	4	5	1	-											
50 Trin196735	4	5	1	2	-										
51 pall207682	5	6	4	5	5	-									
52 pallWR8626	12	13	11	12	12	9	-								
53 wagn010616	141	140	140	139	141	139	135	-							
54 wagn012969	142	141	141	142	142	140	138	35	-						
55 wagn177351	143	142	142	141	143	141	137	5	34	-					
56 podicUC243	226	225	226	225	228	225	224	215	213	217	-				
57 podicUC244	225	224	225	224	227	224	223	214	212	216	1	-			
58 podicUC278	233	232	233	232	234	232	231	218	219	220	17	16	-		
59 podic53124	229	228	229	228	230	228	227	220	220	222	32	31	35	-	
60 chaq186524	267	269	269	268	268	270	264	263	273	264	249	248	253	252	-
61 knuds13244	332	332	333	332	334	334	330	336	340	339	325	324	330	326	274

	61
61 knuds13244	-

Appendix I

Museum catalogue numbers, field numbers, and locality data for the samples utilized in this study. Museum abbreviations: BWMC = Bobby Witcher Memorial Collection, Avila University, LSUMZ = Louisiana State University, Museum of Natural Science, QCAZ = Quito Catholic Zoology Museum, USNM = United States National Museum (USA).

Species	Museuum Number	Field Number	Locality
L. chaquensis	USNM 319708	USFS 186524	Tucumán; ca. 40 km SE San Miguel de Tucumán, Argentina.
L. knudseni	QCAZ 13244		Provincia de Orellana; Parque Nacional Yasuní, Ecuador.
L. pallidirostris	USNM 535774	USFS 207682	Northwest District; Baramita, Guyana.
L. pallidirostris	USNM 302408	WRH 8626	Roraima; Igarapé Cocal, Brazil.
L. podicipinus		UC 243	Mato Grosso do Sol; Estáncia Mimosa; Mun de Bonito, Brazil.
L. podicipinus		UC 244	Mato Grosso do Sol; Estáncia Mimosa; Mun de Bonito, Brazil.
L. podicipinus		UC 278	São Paulo; Chácara Renascer; Bauru, Brazil.
L. podicipinus	USNM 053124	USFS 303207	São Paulo; Fazenda Jatai, Brazil.
L. validus	BWMC 06881		St. Andrew; Spring Gardens Estate, Grenada.
L. validus	BWMC 06882		St. Andrew; Birch Grove, Grenada.
L. validus	BWMC 06883		St. Andrew; Birch Grove, Grenada.
L. validus	BWMC 06939		St. George; Beausejour, Grenada.
L. validus	USNM 314793	USFS 196977	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314794	USFS 196978	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314795	USFS 196979	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314796	USFS 196980	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314798	USFS 197044	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314813	USFS 196999	St. George; Grand Anse Bay, Grenada.
L. validus	USNM 314814	USFS 197000	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314815	USFS 197001	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314816	USFS 197002	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314817	USFS 197003	St. George; inland from Grand Anse Bay, Grenada.

Species	Museum Number	Field Number	Locality
L. validus	USNM 314818	USFS 197004	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314819	USFS 197005	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314820	USFS 197006	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314821	USFS 197007	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314822	USFS 197008	St. George; inland from Grand Anse Bay, Grenada.
L. validus	USNM 314831	USFS 197017	St. George; inland from Grand Anse Beach, Grenada.
L. validus	USNM 314512	USFS 56421	St. Andrew; near Vermont, St. Vincent.
L. validus	USNM 314513	USFS 56490	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314514	USFS 56612	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314515	USFS 56613	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314718	USFS 196894	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314719	USFS 196895	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314720	USFS 196896	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314721	USFS 196897	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314722	USFS 196898	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314723	USFS 196899	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314714	USFS 196900	St. George; Arnos Vale, St. Vincent.
L. validus	USNM 314516	USFS 56561	St. George; Rose Cottage, St. Vincent.
L. validus	USNM 314517	USFS 56562	St. George; Rose Cottage, St. Vincent.
L. validus	USNM 523940	USFS 186596	St. Paul; Delaford, Louis d'Or River, Tobago.
L. validus	USNM 523941	USFS 186597	St. Paul; Dealford, Louis d'Or River, Tobago.
L. validus	USNM 286948	USFS 175410	St. George; Simla Research Station, Trinidad.
L. validus	USNM 286959	USFS 175424	St. George; north of Simla Research Station, Trinidad.
L. validus	USNM 306105	USFS 175620	St. George; near Brasso Seco Village, Trinidad.
L. validus	USNM 314671	USFS 196886	St. George; west of Carapo, Trinidad.
L. validus	USNM 314672	USFS 196888	St. George; west of Carapo, Trinidad.
L. validus	USNM 314627	USFS 196726	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314628	USFS 196727	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314629	USFS 196728	St. Patrick; near Chatham Beach, Trinidad.

Species	Museum Number	Field Number	Locality
L. validus	USNM 314630	USFS 196729	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314631	USFS 196730	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314632	USFS 196731	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314633	USFS 196732	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314634	USFS 196733	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314635	USFS 196734	St. Patrick; near Chatham Beach, Trinidad.
L. validus	USNM 314636	USFS 196735	St. Patrick; near Chatham Beach, Trinidad.
L. wagneri	LSUMZ H-13653	JPC 12969	Acre; ca. 5km N Porto Walter, inland from the Rio Jurua, Brazil.
L. wagneri	LSUMZ H-12885	JPC 10616	Sucumbios; Estación, Científica near Cuyabeno, Ecuador.
L. wagneri	USNM 320988	USFS 177351	Pastaza; Coca, 1km ENE of Tiguino, Ecuador.

Appendix II

Alignment of 12S sequences. Shaded regions denoting stem positions in the secondary structure model are numbered arbitrarily. Numbering below the alignment begins at the first 12S base position of the *Xenopus laevis* mitochondrial genome. Insertions in the *X. laevis* sequence are represented by diagonal shading, and were excluded from analyses.

		1		2		1'		3		3a	4
Gren006881	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren006882	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren006883	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren006939	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren196977	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren196978	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren196979	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren196980	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren196999	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197000	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197001	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197002	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197003	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197004	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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Gren197007	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
Gren197008	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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Gren197044	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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StVn056490	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
StVn056561	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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StVn056613	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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Tobo186596	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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Trin175410	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAATCAACT	T	TTACTTAA	CTTACACATG
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knuds13244	CAA	AGGTT	TGG	TCC	T	GACCT	T	AAAGTCAATT	G	CTACTTAA	CTTACACATG
Xenopuslav	TAA	AGGTT	TGG	TCC	T	AGCCT	T	ATTATCAACT	T	TTTCTGAA	CTTACACATG
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Tobo186597	C	AA	GT	ATCA	GC	ACCCCT	GTG	AGAAC	GCCCTT	TAA	CTCCT	C	▨	T	AAGGG	G
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Tobo186596	C	AA	GT	ATCA	GC	ACCCCT	GTG	AGAAC	GCCCTT	TAA	CTCCT	C	▨	T	AAGGG	G
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pall207682	C	AA	GT	ATCA	GC	ACCCCT	GTG	AGAAC	GCCCTT	TAA	CTCCT	C	▨	T	AAGGG	G
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knuds13244	C	AA	GT	CTCC	GC	ACCCCT	GTG	AAAAC	ACCCTT	TAA	CCCCT	T	▨	C	AAGGG	G
Xenopuslav	C	AA	GC	ATCC	GC	ACTCCC	GTG	AAAAT	GCCCTT	AAG	CCTCT	T	AAA	C	AGGGG	A
							2275								2300	

		7'		8		8a		8a'		8'		9	
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Trin196729	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196730	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196731	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196732	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196733	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196734	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196888	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
StVn056613	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
StVn196894	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin175424	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Tobo186596	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196886	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin175410	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin175620	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
Trin196735	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
pall207682	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
pallWR8626	T	AAGGAGC	T	GGTATC	A	GGCGCA	CATACCC	CAGCC	CAAGA	CACC	TA	GC	TAT
wagn010616	A	AAGGAGC	T	GGTATC	A	GGCGCA	CACACCT	TAGCC	CAAGA	CACC	TA	GC	TAT
wagn012969	T	AAGGAGC	T	GGTATC	A	GGCGCA	CGCACCT	TAGCC	CAAGA	CACC	TA	GC	TAT
wagn177351	A	AAGGAGC	T	GGTATC	A	GGCGCA	CACACCC	TAGCC	CAAGA	CACC	TA	GC	TAT
podicUC243	T	AAGGAGC	C	GGTATC	A	GGCACA	TTT---T	TAGCC	CAAGA	CACC	TA	GC	TAT
podicUC244	T	AAGGAGC	C	GGTATC	A	GGCACA	TTT---T	TAGCC	CAAGA	CACC	TA	GC	TAT
podicUC278	T	AAGGAGC	C	GGTATC	A	GGCACA	TTT---T	TAGCC	CAAGA	CACC	TA	GC	TAT
podic53124	T	AAGGAGC	C	GGTATC	A	GGCACA	TTT---T	TAGCC	CAAGA	CACC	TA	GC	TAT
chaq186524	C	AAGGAGC	T	GGTATC	A	GGCACA	ACCT--T	TAGCC	CAAGA	CACC	TA	GC	TAC
knuds13244	T	AAGGAGT	T	GGTATC	A	GGCACA	AATA--T	TAGCC	CAAGA	CACC	TA	GC	TAG
Xenopuslav	T	AAGGAGC	C	GGTATC	A	GGCACA	ACTA--A	TAGCC	CATGA	CACC	TT	GC	TCT
						2325							2350

	9'	6'		10		10'		4'		11		11a	
Gren006881	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren006882	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren006883	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren006939	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren196977	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren196978	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren196979	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren196980	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren196999	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren197000	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197001	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197002	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197003	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197004	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197005	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren197006	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren197007	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197008	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Gren197017	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Gren197044	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
StVn056421	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn056490	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn056561	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn056562	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn056612	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn196895	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn196896	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
StVn196897	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
StVn196898	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn196899	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
StVn196900	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Tobo186597	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Trin196726	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196727	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196728	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196729	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Trin196730	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196731	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196732	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196733	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196734	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196888	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
StVn056613	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
StVn196894	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin175424	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Tobo186596	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Trin196886	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
Trin175410	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin175620	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
Trin196735	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GTC
pall207682	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
pallWR8626	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	TA	TAAGC	GAC
wagn010616	GC	CAC	A	CCCA	CAAG	GGAA	CTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
wagn012969	GC	CAC	A	CCTA	CAAG	GGAA	CTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
wagn177351	GC	CAC	A	CCCA	CAAG	GGAA	CTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
podicUC243	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGGT	TAACA	TTAAA	CA	TAAGC	GAC
podicUC244	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
podicUC278	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
podic53124	GC	CAC	A	CCCT	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTAAA	CA	TAAGC	GAC
chaq186524	GC	CAC	A	CCCA	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTGAA	TA	TAAGC	GCC
knuds13244	GC	CAC	A	CCCA	CAAG	GGAA	TTCA	GCAGTGAT	TAACA	TTGAA	TA	TAAGC	GAC
Xenopuslav	GC	CAC	A	CCCA	CAAG	GGAA	TTCA	GCAGTGAT	AAACA	TTGAA	CA	TGAGC	GAC
								2375					2400

			11a'		11'		3a'		12		12a
Gren006881	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren006882	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren006883	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren006939	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren196977	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren196978	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren196979	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren196980	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren196999	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197000	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197001	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197002	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197003	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197004	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197005	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197006	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197007	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197008	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197017	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Gren197044	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056421	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056490	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056561	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056562	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056612	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196895	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196896	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196897	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196898	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196899	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196900	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Tobo186597	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196726	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196727	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196728	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196729	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196730	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196731	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196732	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196733	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196734	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196888	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn056613	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
StVn196894	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin175424	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Tobo186596	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196886	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin175410	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin175620	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Trin196735	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
pall207682	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
pallWR8626	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
wagn010616	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
wagn012969	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAG	AA	GGGCCGGCTAATCTGG	TGCCA	G
wagn177351	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
podicUC243	A	▨	GCTTG	A	TTCA	G	TTAAAGAAAA	GA	GAGCCGGCAAATCTGG	TGCCA	G
podicUC244	A	▨	GCTTG	A	TTCA	G	TTAAAGAAAA	GA	GAGCCGGCAAATCTGG	TGCCA	G
podicUC278	A	▨	GCTTG	A	TTCA	G	TTAAAGAAAA	GA	GAGCCGGCAAATCTGG	TGCCA	G
podic53124	A	▨	GCTTG	A	TTCA	G	TTAAAGAAAA	GA	GAGCCGGCAAATCTGG	TGCCA	G
chaq186524	A	▨	GCTTG	A	TTCA	G	TTAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
knuds13244	A	▨	GCTTG	A	TTCA	G	TCAAAGTAAA	AA	GAGCCGGCTAATCTGG	TGCCA	G
Xenopuslav	A	CAAA	GCTCG	A	TTCA	G	TTACAGTAAA	TA	GAGTTGGTCAATCTCG	TGCCA	G
							2425			2450	

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           12a    12a            12'           3'          13
Gren006881 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren006882 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren006883 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren006939 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren196977 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren196978 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren196979 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren196980 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren196999 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197000 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197001 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197002 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197003 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197004 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197005 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197006 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197007 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197008 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197017 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Gren197044 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056421 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056490 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056561 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056562 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056612 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196895 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196896 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196897 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196898 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196899 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196900 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Tobo186597 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196726 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196727 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196728 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196729 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196730 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196731 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196732 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196733 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196734 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196888 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn056613 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
StVn196894 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin175424 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Tobo186596 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196886 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin175410 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin175620 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
Trin196735 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
pall207682 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ATTC GGC GTAAAGC
pallWR8626 C CGCC GC GGTTACA CCATGTGGCTC A AGTTGATATT ACTC GGC GTAAAGC
wagn010616 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGATTTT ATTC GGC GTAAAGC
wagn012969 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGATTTT ATTC GGC GTAAAGC
wagn177351 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGATTTT ATTC GGC GTAAAGC
podicUC243 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGACCTT GCTC GGC GTAAAGC
podicUC244 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGACCTT GCTC GGC GTAAAGC
podicUC278 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGACCTT GCTC GGC GTAAAGC
podic53124 C CGCC GC GGTTACA CCACGTGGCTC A AGTTGACCTT GCTC GGC GTAAAGC
chaq186524 C CGCC GC GGTTACA CCACGTGGCTC A AATTGATTTT GCTC GGC GTAAAGC
knuds13244 C CGCC GC GGTTACA CCACGTGGCTC A AATTGACCCG ACTC GGC GTAAAGC
Xenopuslav C CGCC GC GGTTATA CGA-GAAACTC A AGTTGATCAT TTTC GGC GTAAAGC
                                      2475                          2500
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	14		14a		15	16		17		17a	
Gren006881	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren006882	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren006883	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren006939	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren196977	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren196978	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren196979	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren196980	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren196999	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197000	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197001	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197002	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197003	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197004	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197005	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197006	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197007	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197008	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197017	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Gren197044	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056421	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056490	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056561	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056562	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056612	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196895	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196896	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196897	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196898	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196899	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196900	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Tobo186597	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196726	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196727	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196728	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196729	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196730	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196731	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196732	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196733	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196734	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196888	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn056613	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
StVn196894	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin175424	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Tobo186596	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196886	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin175410	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin175620	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
Trin196735	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
pall207682	GTGA	TTT	AAG	AGATTTGCCTA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
pallWR8626	GTGA	TTT	AAG	AGATTTGCCCA	TGGTGT	T	AAAAA	TGTAC	TGA	GCT	GTGACA
wagn010616	GTGA	TTT	AAG	AGATCTGCCCA	TGGTGT	T	AAAAA	GGCAC	TAA	GCT	GTGACA
wagn012969	GTGA	TTT	AAG	AGATCTGCCTA	TGGTGT	T	AAAAA	GGCAC	TAA	GCT	GTGACA
wagn177351	GTGA	TTT	AAG	AGATCTGCCCA	TGGTGT	T	AAAAA	GGCAC	TAA	GCT	GTGACA
podicUC243	GTGA	TTT	AAG	AGACCTGCCTA	TGGTGT	C	AAAAA	GGAGT	TAA	GCT	GTGACA
podicUC244	GTGA	TTT	AAG	AGACCTGCCTA	TGGTGT	C	AAAAA	GGAGT	TAA	GCT	GTGACA
podicUC278	GTGA	TTT	AAG	AGACCTGCCTA	TGGTGT	C	AAAAA	GGAGT	TAA	GCT	GTGACA
podic53124	GTGA	TTT	AAG	AGACCTGCTTA	TGGTGT	C	AAAAA	GGAGT	TAA	GCT	GTGACA
chaq186524	GTGA	TTT	AAG	AGACCAATTCA	TGGTGT	C	AAAAA	AGCAC	TAA	GCT	GTGACA
knuds13244	GTGA	TTT	AAG	AAAAC-ATTTT	TGGTGT	C	AAAAA	CATAC	TAA	GCC	GTAACA
Xenopuslav	GTGA	TTA	AAG	TAACCCAAAC-	TAGAGT	C	AAACT	CCAAC	CAA	GCT	GTCGC-
					2525						

	17a'		17'		16'		18		18'	15'	
Gren006881	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren006882	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren006883	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren006939	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren196977	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren196978	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren196979	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren196980	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren196999	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197000	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197001	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197002	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197003	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197004	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197005	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197006	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197007	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197008	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197017	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Gren197044	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056421	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056490	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056561	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056562	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056612	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn196895	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn196896	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn196897	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn196898	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
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StVn196900	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Tobo186597	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196726	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196727	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196728	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196729	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196730	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196731	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196732	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196733	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196734	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196888	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
StVn056613	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
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Trin175424	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Tobo186596	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196886	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin175410	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin175620	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
Trin196735	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
pall207682	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
pallWR8626	CGC	CT▨	GTTCT	TAAGAA	A	CTCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
wagn010616	CGC	TT▨	GTTCC	TAAGAA	G	CCCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
wagn012969	CGC	TT▨	GTTCC	TATGAA	A	CCCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
wagn177351	CGC	TT▨	GTTCC	TAAGAA	G	CCCAA	AAAC	GAAA	GTT	ACACCA	ACCGCACTA
podicUC243	CGC	TT▨	GCCCC	TGAGAA	G	ACCTA	AAAC	GAAA	GTT	ACACCA	ATTGCACTA
podicUC244	CGC	TT▨	GCCCC	TGAGAA	G	ACCTA	AAAC	GAAA	GTT	ACACCA	ATTGCACTA
podicUC278	CGC	TT▨	GCCCC	TAAGAA	G	ACCTA	AGAC	GAAA	GTT	ACACCA	ATTGCACTA
podic53124	CGC	TT▨	GCCCC	TGAGAA	G	ACCTA	AAAC	GAAA	GTT	ACACCA	ATTGCACTA
chaq186524	CGC	TT▨	GTGCC	TCAGAA	G	CCCAG	AAAC	GAAA	GCT	ACACCA	ATATTACCC
knuds13244	CGC	TT▨	GTACC	TCAGAA	G	ACCAA	AATC	GAAA	GCT	ACACCA	ACCTAATCA
Xenopuslav	CGC	TTTC	GTTGG	TTTGAA	G	AACAC	TCAC	GAAA	GTA	ACTCTA	CCCATATTA
	2550						2575				

			14a'		14'		19		19a		19a'	
Gren006881	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren006882	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren006883	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren006939	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren196977	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren196978	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren196979	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren196980	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren196999	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197000	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197001	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197002	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197003	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197004	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197005	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197006	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197007	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197008	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197017	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Gren197044	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056421	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056490	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056561	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056562	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056612	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196895	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196896	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196897	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196898	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196899	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196900	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Tobo186597	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196726	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196727	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196728	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196729	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196730	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196731	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196732	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196733	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196734	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196888	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn056613	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
StVn196894	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin175424	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Tobo186596	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196886	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin175410	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin175620	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Trin196735	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
pall207682	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
pallWR8626	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
wagn010616	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
wagn012969	▨	A	CTT	GAAC	CCAC	GACA	GCTGGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
wagn177351	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
podicUC243	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
podicUC244	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
podicUC278	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
podic53124	▨	A	CTT	GAAC	CCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
chaq186524	▨	A	CTT	GAAC	TCAC	GACA	GCTTGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
knuds13244	▨	A	CTT	GAAC	TCAC	GACA	GCTAGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
Xenopuslav	C	A	CTT	GAAC	TCAC	GACC	GCTAGGAAACA	AAC	TGGG	ATTAGATAC	CCCA	CT
	2600						2625					

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                19'            20                 20'   13'   21
Gren006881  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
Gren006882  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
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Gren196977  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
Gren196978  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
Gren196979  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
Gren196980  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
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StVn056490  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
StVn056561  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
StVn056562  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
StVn056612  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
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Tobo186597  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
Trin196726  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
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Tobo186596  A TGCCTAGC CGTAAAC TTT ▨▨▨TATTTACATCC GAA T C▨G C CTG GGAACT
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chaq186524  A TGCCTAGC CGTAAAC TTT ▨▨▨AATTTACACCT CAA T C▨G C CAG GGAACT
knuds13244  A TGCCTAGC CGTAAAC TTT ▨▨▨AACTTACATAG ATA T C▨G C CAG GGAACT
Xenopuslav  A TGCCTAGC CATAAAC TTT GACTACTTACGCAA AAA T CCG C CAG --AACT
            |                            |
            2650                        2675
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		21a			21a'		21'		2'		22		22a		23
Gren006881	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren006882	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren006883	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren006939	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren196977	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren196978	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren196979	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren196980	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren196999	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197000	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197001	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197002	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197003	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197004	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197005	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197006	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197007	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197008	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197017	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Gren197044	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056421	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056490	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056561	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056562	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056612	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196895	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196896	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196897	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196898	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196899	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196900	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Tobo186597	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196726	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196727	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196728	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196729	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196730	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196731	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196732	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196733	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196734	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196888	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn056613	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
StVn196894	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin175424	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Tobo186596	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196886	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin175410	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin175620	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
Trin196735	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
pal1207682	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
pallWR8626	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
wagn010616	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
wagn012969	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
wagn177351	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A T C C C A	A A T	C C	A C	C
podicUC243	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	A C	C
podicUC244	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	A C	C
podicUC278	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	A C	C
podic53124	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	A C	C
chaq186524	A C	G A G C	▨	A A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	A T	C
knuds13244	A C	G A G C	▨	T A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G A C G G T A C C C C A	A A T	C C	C T	C
Xenopuslav	A C	G A G C	C	T A A	G C T T	A A A A	C C C	A A A	G G A	C T	T G G C G G T G C T C C A	A A C	C C	A C	C
		2700								2725					

	23	24		25		25'		26
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Gren006882	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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Gren196977	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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Gren196999	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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Gren197002	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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Gren197005	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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Gren197007	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Gren197008	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Gren197017	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Gren197044	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056421	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056490	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056561	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056562	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056612	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn196895	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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StVn196899	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn196900	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Tobo186597	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196726	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196727	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196728	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTC
Trin196729	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196730	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196731	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196732	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196733	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196734	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196888	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn056613	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
StVn196894	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin175424	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Tobo186596	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196886	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin175410	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin175620	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
Trin196735	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
pall207682	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
pallWR8626	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
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wagn012969	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
wagn177351	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTT
podicUC243	TAGA	GGAGCCTGTCCT	GTA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTA
podicUC244	TAGA	GGAGCCTGTCCT	GTA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTA
podicUC278	TAGA	GGAGCCTGTCCT	GTA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTA
podic53124	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGCT	TAACCTCA	CCTCTTA
chaq186524	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGTT	TAACCTCA	CCACTTT
knuds13244	TAGA	GGAGCCTGTCCT	ATA	ATCG	ATAACCCC	CGTT	TAACCTCA	CCACTTC
Xenopuslav	TAGA	GGAGCCTGTTCT	GTA	ATCG	ATACCCCT	CGCT	AAACCTCA	CCACTTC
	2750				2775			

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                      |        27        |   |  28  |29 |    |29'|
Gren006881 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren006882 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren006883 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren006939 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren196977 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren196978 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren196979 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren196980 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren196999 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Gren197000 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Gren197005 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Gren197008 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Gren197044 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056421 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056490 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056561 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056562 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056612 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn196895 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn196896 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Trin196727 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Trin196730 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin196731 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin196732 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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Trin196734 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin196888 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn056613 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
StVn196894 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin175424 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Tobo186596 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin196886 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TT
Trin175410 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin175620 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
Trin196735 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|TC
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wagn010616 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GTG|CC
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wagn177351 TTGC▨CTTTCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GTG|CC
podicUC243 TCGT▨CCATCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|CC
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podic53124 TCGT▨CCATCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|CC
chaq186524 TTGC▨CTATCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CAC|GTGA|GCG|CT
knuds13244 TAGC▨AAATCA|GCCTGTATACCTCCGTCG|TCA|GCTTAC|CGC|GTGA|GCG|CC
Xenopuslav TTGCCAAACCC|GCCTATATACCACCGTCG|CCA|GCCCAC|CTC|GTGA|GAG|AT
             |                        |
            2800                     2825
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		28'		30		30'		27'
Gren006881	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren006882	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren006883	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren006939	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren196977	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren196978	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren196979	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren196980	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren196999	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197000	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197001	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197002	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197003	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197004	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
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Gren197006	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197007	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Gren197008	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
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Gren197044	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056421	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056490	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056561	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056562	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056612	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn196895	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
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StVn196900	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Tobo186597	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196726	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196727	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
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Trin196732	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196733	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196734	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196888	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn056613	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
StVn196894	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin175424	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Tobo186596	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin196886	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Trin175410	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
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Trin196735	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
pall207682	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
pallWR8626	GCTGA	GTGAGC	CTAAT	GCC	CAAAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
wagn010616	ACTAA	GTGAGC	CTAAT	GTC	CACAC	GTC	AACA	CGTCAGGTCAAGGTGCAGC
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podicUC278	ACTAA	GTGAGC	CTAAT	GCC	CATAC	GCC	AATA	CGTCAGGTCAAGGTGCAGC
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chaq186524	ATTGA	GTGAGC	TTAAT	GCC	CCTAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
knuds13244	TTTAA	GTGAGC	CTAAT	GCC	AATAC	GCC	AACA	CGTCAGGTCAAGGTGCAGC
Xenopuslav	TCTTA	GTAGGC	TTAAT	GAT	TTTTC	ATC	AACA	CGTCAGGTCAAGGTGTAGC
	2850						2875	

		26'		24'		31				31'		32	
Gren006881	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren006882	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren006883	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren006939	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
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Gren196979	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren196980	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
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Gren197001	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197002	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197003	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197004	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197005	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197006	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197007	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197008	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197017	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Gren197044	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056421	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056490	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056561	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056562	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056612	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196895	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196896	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196897	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196898	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196899	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196900	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Tobo186597	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196726	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196727	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
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Trin196732	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196733	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196734	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196888	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn056613	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
StVn196894	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
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Tobo186596	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196886	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin175410	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin175620	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
Trin196735	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
pall207682	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
pallWR8626	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	T	▨	TT	TAGAA	AAAA	C	A
wagn010616	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	TT	TAGAA	AAAA	C	A
wagn012969	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	TT	TAGAA	AAAA	C	A
wagn177351	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	TT	TAGAA	AAAA	C	A
podicUC243	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	CT	TAGAG	AAAA	C	A
podicUC244	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	CT	TAGAG	AAAA	C	A
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podic53124	TAAT	GAAGAGG	GA	AGAGATGGGCTAC	ACT	CTCTA	C	▨	CT	TAGAG	AATA	C	A
chaq186524	TAAT	GAAGTGG	GA	AGAGATGGGCTAC	ACT	TTCTA	T	▨	TT	TAGAA	GAAA	C	G
knuds13244	TAAT	GAAGTGG	GA	AGAGATCGGCTAC	ACT	CTCTA	C	▨	TT	TAGAA	GAAA	C	G
Xenopuslav	ATAT	GAAGTGG	GA	AGAAATGGGCTAC	ATT	TTCTA	T	AC	CT	TAGAA	TAAA	C	G
	2900				2925								

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Gren197044 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
StVn056421 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
StVn056490 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
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StVn196896 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
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Tobo186597 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin196726 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin196727 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
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Tobo186596 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin196886 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin175410 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin175620 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
Trin196735 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
pall207682 AA|AAACTAT|TTATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGG
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wagn012969 AA|AAACTTC|--ATGAAAT|CTAGTTA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGA
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chaq186524 AA|AGACTAT|ATATGAAAT|CTAGTCA|GAA|G|GAGGA|TTTAG|TAGTA|AAAAGA
knuds13244 AA|AGACCAC|TTATGAAAC|CTGGTCA|GAA|G|GAGGA|TTTAG|CAGTA|AAAAGA
Xenopuslav CA|AGATCTC|-TATGAAAC|CAGATCG|GAA|G|GCGGA|TTTAG|CAGTA|AAGAGA
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            33         33'             22a'   22'                34
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Gren006882 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren006883 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren006939 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren196977 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren196978 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren196979 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren196980 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren196999 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197000 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197001 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197002 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197003 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197004 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197005 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197006 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197007 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197008 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197017 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Gren197044 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056421 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056490 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056561 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056562 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056612 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196895 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196896 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196897 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196898 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196899 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196900 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Tobo186597 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Trin196726 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Trin196727 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
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Trin196734 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Trin196888 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn056613 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
StVn196894 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Trin175424 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
Tobo186596 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
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Trin196735 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
pall207682 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
pallWR8626 |AA|ACAGAGT|GTCCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
wagn010616 |AA|ACAGAGT|GTTCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
wagn012969 |AA|ACAGAGT|GTTCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
wagn177351 |AA|ACAGAGT|GTTCTTTT|TAACCC|GG|CAC|TGGGATGTGTACA|CACC|G|
podicUC243 |AA|ACAGAGT|GTTCTTTT|TAACTC|GG|CAC|TGGGATGTGTACA|CACC|G|
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podic53124 |AA|ACAGAGT|GTTCTTTT|TAACTC|GG|CAC|TGGGATGTGTACA|CACC|G|
chaq186524 |AA|ACAGAGA|GTTCTTTT|TAACCC|GG|CAC|TGGGGTGTGTACA|CACC|G|
knuds13244 |GA|ACATAGT|GCTCTTTT|TAATCC|GG|CAC|TGGGGTGTGTACA|CACC|G|
Xenopuslav |AA|CAAGAGA|GTTCTCTT|TAAAAC|GG|CCC|TGGAGCGCGCACA|CACC|G|
                3025                          3050               3067
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Appendix III

Alignment of 16S sequences. Shaded regions denoting stem positions in the secondary structure model are numbered arbitrarily. Numbers below the alignment correspond to base positions in the *Xenopus laevis* mitochondrial genome. Insertions in the *X. laevis* sequence are represented by diagonal shading, and were not excluded from the analyses

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             1               2          3
Gren006881 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren006882 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren006883 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren006939 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren196977 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren196978 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren196979 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren196980 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren196999 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren197000 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren197001 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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Gren197004 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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Gren197006 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Gren197007 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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Gren197017 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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StVn056561 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
StVn056562 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
StVn056612 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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Tobo186597 |G C|C A A A A A|T C|T A|G C C C A|A A C A T - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Trin196726 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
Trin196727 |G C|C A A A A A|T C|T A|G C C C A|A A C A C - ▨ A A C A A A T G A A C T A C C C C C T T C C T T T T
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chaq186524 |G C|C A A C A A|T C|T A|G C C C A|A C C T T T ▨ A A C C A A T G A T A - A T C C T G T A T C T T T A
knuds13244 |G C|C A A C A G|T C|T A|G C C C A|A T A C C - ▨ A A C C A A T G A C A T A A T C T C - A C C T C A A
Xenopuslav |T C|C A A A A A|C C|T A|G C A T T|C C A A T T A T A A T A A C A A T A - A C C T C A T A - - T T C T
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Xenopuslav CATAAATTTCTAATTAAACCATTCTAAAATTTTAGTATAGGCGATAGAAC
                     |                        |
                    3150                     3175
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              5'                3'                                 6           6'          2'
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Gren006882 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
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Gren197003 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
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Tobo186597 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
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Trin196727 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
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StVn196894 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Trin175424 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Tobo186596 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Trin196886 |T T T|T A T C C|A G G C G C|T A T A C T T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Trin175410 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Trin175620 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Trin196735 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
pall207682 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
pallWR8626 |T T T|T A T C C|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
wagn010616 |T T T|T C T T T|A G G C G C|T A T A C C T T T ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A T A
wagn012969 |T T T|T C T T T|A G G C G C|T A T A C C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A T A
wagn177351 |T T T|T C T T T|A G G C G C|T A T A C C T T T ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A T A
podicUC243 |T T T|T - T T C|A A G A G C|T A T A C T T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
podicUC244 |T T T|T - T T C|A A G A G C|T A T A C T T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
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chaq186524 |A A T|T - T T T|A G G A G C|T A T A A C T T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
knuds13244 |C T T|T A T A -|A G G A G C|T A T A T T C T A ▨ G T A|C C|G C A A|G G|G A A A|G A|T G A A A T A A A
Xenopuslav |A A T|C A T - -|A A T A G C|T A T A G A A A A A G T A|C C|G T A A|G G|- A A A|G A|T G A A A T A G A
                                    |                                                   |
                                  3200                                                3225
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                                               1'                            7                     7'      8
Gren006881 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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StVn056561 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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StVn196897 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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Tobo186597 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin196726 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin196727 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin196728 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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Trin196730 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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Trin196732 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin196733 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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StVn056613 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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Trin175410 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin175620 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
Trin196735 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
pall207682 A A T G A A - - A A C T C A T ▨ A A G C A C A A A A A A - G T A A A G A ▨ C T A A T C C T T G T A C
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wagn010616 A A T G A A A C A A C T C - T ▨ A A G C A T A A A A A A - G T A G A G A ▨ T T A A C C C T T G T A C
wagn012969 A A T G A A A C A A C T C - T ▨ A A G C A T A A A A A A - G T A A A G A ▨ T T A A C C C T T G T A C
wagn177351 A A T G A A A C A A C T C - T ▨ A A G C A T G A A A A A - G T A G A G A ▨ T T A A C C C T T G T A C
podicUC243 A A T G A A A C A C A T C C C ▨ A A G C A C A A A A A A A G T A A A G A ▨ T T A A C C C T T G T A C
podicUC244 A A T G A A A C A C A T C C C ▨ A A G C A C A A A A A A A G T A A A G A ▨ T T A A C C C T T G T A C
podicUC278 A A T G A A A C A C A C C C C ▨ A A G C A C A A A A A A - G T A A A G A ▨ T T A A C C C T T G T A C
podic53124 A A T G A A A C A C C T C C C ▨ A A G C A C A A A A A A - G T A A A G A ▨ T T A A C C C T T G T A C
chaq186524 A A T G A A A A A A A T T G C ▨ A A G C A T A A A A A A - G T A G A G A ▨ T A A A C C C T C G T A C
knuds13244 A A T G A A A C A A A T G T C ▨ A A G C A C A A A A A A - G C A G A G A ▨ C A C G C T C T C G T A C
Xenopuslav A A T G A A A T A A T T A A C T A A G C A A C A A A A A - G C A G A G A A C T T A - C C T C G T A C
                                       |                                                     |
                                     3 2 5 0                                               3 2 7 5
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	8		8'	9				10		10'
Gren006881	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren006882	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren006883	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren006939	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren196977	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren196978	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren196979	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren196980	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren196999	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197000	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197001	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197002	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
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Gren197007	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197008	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197017	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Gren197044	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056421	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056490	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056561	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056562	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056612	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn196895	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn196896	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
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Tobo186597	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCAGAA	AGAC-	TTTAAG
Trin196726	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin196727	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin196728	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin196729	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
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Trin196731	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
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Trin196734	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin196888	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn056613	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
StVn196894	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin175424	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Tobo186596	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCAGAA	AGAC-	TTTAAG
Trin196886	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin175410	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin175620	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
Trin196735	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
pall207682	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
pallWR8626	CT	TTCGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGGAA	AGAC-	TTTAAG
wagn010616	CT	TTCGCATT	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGTAA	AGATT	TTAAAG
wagn012969	CT	TTCGCATT	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGTGA	AGATT	TTAAAG
wagn177351	CT	TTCGCATT	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCGTAA	AGATT	TTAAAG
podicUC243	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCAAAA	AGAC-	TTAAAG
podicUC244	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCAAAA	AGAC-	TTAAAG
podicUC278	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ATCAAGCAAAA	AGAC-	CTAAAG
podic53124	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ACCAAGCAAAA	AGAC-	TTAAAG
chaq186524	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	TA	ATCAAGCAAAA	AGAC-	CTAAAG
knuds13244	CT	TTTGCATC	ATGG	TTTAAC	TAGTC	▨	AC	ATCAAGCAAAA	AGAC-	TTAAAG
Xenopuslav	CT	TTTGCATA	ATGG	TCTAGC	CAGTC	A	TA	ATCAAGCAAAA	CGAA-	TTTCAG
				3300					3325	

	10'		11		11a		12		13				13'	
Gren006881	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren006882	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren006883	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren006939	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren196977	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren196978	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren196979	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren196980	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren196999	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197000	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197001	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197002	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197003	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197004	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197005	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197006	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197007	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197008	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197017	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Gren197044	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056421	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056490	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056561	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056562	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056612	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196895	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196896	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196897	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196898	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196899	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196900	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Tobo186597	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196726	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196727	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196728	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196729	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196730	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196731	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196732	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196733	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196734	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196888	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn056613	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
StVn196894	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin175424	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Tobo186596	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196886	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin175410	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin175620	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
Trin196735	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
pall207682	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
pallWR8626	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCTT	TT	▨	A	GAGC	C
wagn010616	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCCT	TA	▨	A	GAGC	C
wagn012969	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCCT	TA	▨	A	GAGC	C
wagn177351	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTCCAAGGC	A	GCCT	TA	▨	A	GAGC	C
podicUC243	TTTGAC	CC	CCCG	AAA	CTAAGC	GAG	CTACTCCAAGGC	A	GCCT	CA	▨	A	GAGC	C
podicUC244	TTTGAC	CC	CCCG	AAA	CTAAGC	GAG	CTACTCCAAGGC	A	GCCT	CA	▨	A	GAGC	C
podicUC278	TTTGAC	CC	CCCG	AAA	CTAAGC	GAG	CTACTCCAAGGC	A	GCCT	CA	▨	A	GAGC	C
podic53124	TTTGAC	CC	CCCG	AAA	CTTAGC	GAG	CTACTCCAAGGC	A	GCCT	AA	▨	A	GAGC	C
chaq186524	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTTCGAGGC	A	GCTT	TA	▨	T	GAGC	C
knuds13244	TTTGAC	CC	CCCG	AAA	CTAAGT	GAG	CTACTTCAGGGC	A	GCTT	TT	▨	T	GAGC	C
Xenopuslav	TTTGAC	TA	CCCG	AAA	CTAAGC	GAT	CTACTCCGAGAC	A	GCTT	TT	T	A	GAGC	A
					3350					3375				

		14		14'		12'		15			
Gren006881	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren006882	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren006883	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren006939	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren196977	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren196978	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren196979	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren196980	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren196999	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197000	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197001	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197002	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197003	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197004	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197005	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197006	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197007	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197008	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197017	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Gren197044	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056421	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056490	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056561	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056562	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056612	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196895	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196896	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196897	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196898	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196899	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196900	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Tobo186597	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196726	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196727	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196728	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196729	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196730	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196731	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196732	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196733	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196734	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196888	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn056613	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
StVn196894	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin175424	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Tobo186596	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196886	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin175410	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin175620	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
Trin196735	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
pall207682	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
pallWR8626	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
wagn010616	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AT
wagn012969	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AT
wagn177351	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AT
podicUC243	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
podicUC244	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
podicUC278	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
podic53124	AA	CCCGTCTCT	GTAGCAAA	AGAGTGGG	AA	GACCTTCGAGTAG	G	GGT	G	▨	AC
chaq186524	AA	CCCGTCTCT	GTTGCAAA	AGAGTGGG	AA	GACCTTCAAGTAG	G	GGT	G	▨	AC
knuds13244	AA	CCCATCTCT	GTTGCAAA	AGAGTGGG	AT	GACCCCCAAGTAG	C	GGT	G	▨	AC
Xenopuslav	AA	CCCGTCTCT	GTGGCAAA	AGAGTGGG	AA	GATCTCCGAGTAG	G	GGT	G	T	AC
			3400			3425					

		15'		11a'		11'		16		17		17'
Gren006881	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren006882	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren006883	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren006939	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren196977	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren196978	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren196979	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren196980	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren196999	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197000	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197001	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197002	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197003	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197004	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197005	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197006	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197007	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197008	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197017	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Gren197044	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056421	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056490	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056561	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056562	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056612	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196895	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196896	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196897	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196898	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196899	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196900	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Tobo186597	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196726	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196727	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196728	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196729	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196730	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196731	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196732	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196733	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196734	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196888	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn056613	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
StVn196894	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin175424	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Tobo186596	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196886	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin175410	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin175620	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
Trin196735	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
pall207682	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
pallWR8626	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
wagn010616	AG	ACC	TAACGA	ACCTAG	TGATAG	CTGG	TT	GTTTAA	GAA	AAGGAT	TTAA	GT
wagn012969	AG	ACC	TAACGA	ACCTAG	TGATAG	CTGG	TT	GTTTAA	GAA	AAGGAT	TTAA	GT
wagn177351	AG	ACC	TAACGA	ACCTAG	TGATAG	CTGG	TT	GTTTAA	GAA	AAGGAT	TTAA	GT
podicUC243	AG	ACC	TAACGA	GCTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
podicUC244	AG	ACC	TAACGA	GCTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
podicUC278	AG	ACC	TAACGA	GCTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
podic53124	AG	ACC	TAACGA	GCTTAG	TGATAG	CTGG	TT	GTTTGA	GAA	AAGGAT	TTAA	GT
chaq186524	AG	ACC	TAACGA	ACTTAG	TGATAG	CTGG	TT	GCTTGA	GAA	AAGGAT	TTTA	GT
knuds13244	AG	ACC	TACCGA	ACTTAG	TGATAG	CTGG	TT	GCTTGA	GAA	AAGGAT	TTTA	GT
Xenopuslav	AG	ACC	AAACGA	GCCTAG	TGATAG	CTGG	TT	GCTCAG	GAA	ATGAAT	ATAA	GT
				3450						3475		

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           17'          18                            18'
Gren006881 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren006882 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren006883 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren006939 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren196977 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren196978 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren196979 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren196980 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren196999 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197000 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197001 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197002 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197003 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197004 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197005 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197006 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197007 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197008 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197017 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Gren197044 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056421 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056490 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056561 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056562 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056612 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196895 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196896 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196897 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196898 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196899 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196900 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Tobo186597 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196726 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196727 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196728 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196729 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196730 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196731 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196732 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196733 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196734 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196888 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn056613 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
StVn196894 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin175424 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Tobo186596 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196886 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin175410 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin175620 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
Trin196735 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
pall207682 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
pallWR8626 CCA|G|CCTAAAAT-TACTCCAATGCA|----CCTTAA|TGCTTCAACA-ATTT
wagn010616 CCA|A|CCTAAAAT-TACTTCTATAAA|----CTTAAA|TGCCCTAACA-ATTT
wagn012969 CCA|A|CCTAAAAT-TACTTCTATATA|----CTTAAA|TACCCTAACA-ATTT
wagn177351 CCA|A|CCTAAAAT-TACTTCTATAAA|----CTTAAA|TACCCTAACA-ATTT
podicUC243 CCA|G|CCTAAAAT-TATTTCTATATT|----CCTACA|TATACATTCA-ATTT
podicUC244 CCA|G|CCTAAAAT-TATTTCTATATT|----CCTACA|TATACATTCA-ATTT
podicUC278 CCA|G|CCTAAAAT-TATTTCTATATT|----CCTACA|TATACATTCA-ATTT
podic53124 CCA|G|CCTAAAAT-TATTTTTATATT|----TCTATA|TATACATTCA-ATTT
chaq186524 CCA|A|CCTAAAAC-TACTTAAATTTA|----ATAAAA|TATTAATATG-ATTT
knuds13244 CCA|A|CCTAAAAC-TACCTTTATCCC|----CACAGA|TCTCCCGCCTAGTTT
Xenopuslav TCT|A|CCCTAAATATAGA-TTT-TTA|ACAATTAAAG|TAAAAAGTCT-ACTT
                             |                            |
                            3500                         3525
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           18'          19               19'        20         20'
Gren006881 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren006882 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren006883 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren006939 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren196977 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren196978 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren196979 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren196980 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren196999 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197000 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197001 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197002 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197003 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197004 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197005 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197006 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197007 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197008 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197017 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Gren197044 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056421 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056490 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056561 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056562 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056612 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196895 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196896 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196897 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196898 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196899 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196900 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Tobo186597 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196726 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196727 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196728 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196729 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196730 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196731 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196732 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196733 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196734 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196888 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn056613 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
StVn196894 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin175424 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Tobo186596 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196886 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin175410 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin175620 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
Trin196735 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
pall207682 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
pallWR8626 TAGAG|TAA|TTCAAGCAAGG|TACA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
wagn010616 TAGAG|TAA|TTCAAGCAAGG|TGCA|GCCTGCTTGAA|AC|AGG|GTACAA|CCT|AA
wagn012969 TAGAG|TAA|TTCAAGCAAGG|TGCA|GCCTGCTTGAA|AC|AGG|GCACAA|CCT|AA
wagn177351 TAGAG|TAA|TTCAAGCAAGG|TGCA|GCCTGCTTGAA|AC|AGG|GCACAA|CCT|AA
podicUC243 TAGAG|TAA|TTCAAGCAGGG|TACA|GCCCGCTTGAA|AC|AGG|ATACAA|CCT|AA
podicUC244 TAGAG|TAA|TTCAAGCAGGG|TACA|GCCCGCTTGAA|AC|AGG|ATACAA|CCT|AA
podicUC278 TAGAG|TAA|TTCAAGCAGGG|TACA|GCCCGCTTGAA|AC|AGG|ATACAA|CCT|AA
podic53124 TAGAG|TAA|TTCAAGCAGGG|TACA|GCCCGCTTGAA|AC|AGG|ATACAA|CCT|AA
chaq186524 TAGAG|CAA|TTCAAGTAAGG|TACA|GCCTGCTTGAA|AC|AGG|ATACAA|CCT|GG
knuds13244 TAGAG|AAA|TTCAAATAAGG|TACA|GCCTATTTGAA|CC|AGG|ATACAA|CCT|AG
Xenopuslav AGGAT|TTA|TTCAATCAGGG|TACA|GCCTGATTGAA|AC|AGG|ATACAA|CCT|AT
                                |                            |
                                3550                        3575
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                21          22                       23        24
Gren006881 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren006882 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren006883 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren006939 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren196977 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren196978 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren196979 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren196980 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren196999 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197000 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197001 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197002 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197003 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197004 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197005 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197006 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197007 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197008 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197017 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Gren197044 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056421 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056490 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056561 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056562 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056612 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196895 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196896 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196897 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196898 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196899 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196900 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Tobo186597 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196726 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196727 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196728 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196729 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196730 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196731 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196732 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196733 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196734 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196888 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn056613 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
StVn196894 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin175424 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Tobo186596 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196886 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin175410 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin175620 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
Trin196735 A|CCTGAGGG|TAATA|TAC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
pall207682 A|CCTGAGGG|TAATA|TTC|TCCATGC-----------|AGTGAT|T|AAGTAGGC|
pallWR8626 A|CCTGAGGG|TAATA|TTT|TCCATAC-----------|AGTGAT|T|AAGTAGGC|
wagn010616 A|CCTGAGGG|TAACA|TTT|TCCGCAC-----------|AGTGAT|T|AAGTAGGC|
wagn012969 A|CCTGAGGG|TAACA|TTT|TCCACAC-----------|AGTGAT|T|AAGTAGGC|
wagn177351 A|CCTGAGGG|TAACA|TTT|TCCGCAC-----------|AGTGAT|T|AAGTAGGC|
podicUC243 G|CATGAGGG|TAACA|TTT|ATTTT-C-----------|AGTGAT|T|AAGTAGGC|
podicUC244 G|CATGAGGG|TAACA|TTT|ATTTT-C-----------|AGTGAT|T|AAGTAGGC|
podicUC278 G|CATGAGGG|TAACA|TCT|ATTTT-C-----------|AGTGAT|T|AAGTAGGC|
podic53124 G|CATGAGGG|TAATA|TCT|ATTTT-C-----------|AGTGAT|T|AAGTAGGC|
chaq186524 A|TATGAGGG|TAA-A|TAT|TTTTTAC-----------|AGCGAC|A|AAGTAGGC|
knuds13244 A|CCTGAGGG|TAACT|TTA|TCTTTA------------|CCCGAT|T|AAGTTGGC|
Xenopuslav A|ATACTGGG|TAA--|AGA|TTATAATCTTCAAGGAAA|GTTGAG|T|CAGTGGGC|
                                    |                           |
                                   3600                        3625
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                                   24'               25      25a             25a'  25'       23'
Gren006881 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren006882 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren006883 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren006939 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren196977 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren196978 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren196979 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren196980 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren196999 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197000 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197001 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197002 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197003 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197004 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197005 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197006 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197007 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197008 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197017 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Gren197044 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056421 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056490 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056561 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056562 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056612 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196895 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196896 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196897 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196898 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196899 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn196900 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Tobo186597 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196726 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196727 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
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Trin196732 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196733 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196734 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196888 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
StVn056613 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
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Tobo186596 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
Trin196886 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
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Trin175620 C T G A A A G C A G C C A T C T T T T A A A A ▨ A G C G T C A T A G C T T T A C C A C G T A G G A C
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wagn012969 C T A A A A G C A G C C A C C T T T T A A A A ▨ A G C G T C A C A G C T T T A C C A C A C A G G A C
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podicUC278 C T A A A A G C A G C C A C C T T T A A A A A ▨ A G C G T C A T A G C T T T A C C A C A C A A A A A
podic53124 C T A A A A G C A G C C A C C T T T A A A A A ▨ A G C G T C A T A G C T T T A C C A C A C A A A A G
chaq186524 C T A A A A G C A G C C A C C T T T C A A A A ▨ A G C G T C A T A G C T T T A T C G C A C T A T A A
knuds13244 C T A A A A G C A G C C A T C T T T A A A A T ▨ A G C G T C A T A G C T T A G T C G C G C T C T T A
Xenopuslav C T A A A A G C A G C C A C C T G T A A A G A C A G C G T C A A A G C T C A C T C A A T C A T T T A
                                                     |                                                 |
                                                     3 6 5 0                                           3 6 7 5
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                                   22'       21'            16'  26
Gren006881 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren006882 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren006883 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren006939 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
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Gren196978 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren196979 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren196980 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Gren196999 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
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Tobo186597 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Trin196726 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
Trin196727 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
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StVn196894 AT--AATTATT-AACTTAGTTAA GAA --- CCCCACT CCCCTA TCAAAC AA
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podicUC244 AT--GATCCCA-AACACTTCTAT TAA --- CCCCACC CCCGTA TCAAAC AA
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chaq186524 ACT-AATACCA-AACATTTTAAC GAA --- CCCCACC TCCGTA TCAAGC AA
knuds13244 ATTAAATCCCA-AAAACCTCCCC GAA --- CCCCACC ACAGTA CCAAGC AA
Xenopuslav ACCCTTTAATTAGTATAACTAAT TCT AAA CCCCCAA ACAATA CTGAGC TA
                                 |                            |
                                3700                         3725
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	26		26'		9'	
Gren006881	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren006882	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren006883	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren006939	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren196977	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren196978	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren196979	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren196980	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren196999	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197000	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197001	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197002	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197003	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197004	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197005	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197006	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197007	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197008	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197017	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Gren197044	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056421	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056490	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056561	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056562	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056612	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196895	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196896	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196897	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196898	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196899	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196900	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Tobo186597	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196726	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196727	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196728	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196729	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196730	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196731	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196732	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196733	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196734	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196888	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn056613	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
StVn196894	TTCTAT	AACCCCT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin175424	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Tobo186596	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196886	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin175410	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin175620	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
Trin196735	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
pall207682	TTCTAT	AACCC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
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wagn012969	TTCTAT	AAAATTT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
wagn177351	TTCTAT	AAAATTT	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
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podicUC278	TTCTAT	ATAAC-T	ATAGAAGCT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
podic53124	TTCTAT	ATAAC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAATAA
chaq186524	TTCTAT	AATAC-T	ATAGAAACT	TTTAT	GTTAAA	ACTAGTAACAAGAAGAA
knuds13244	TTCTAT	ATATC-T	ATAGAACTC	TTTAT	GTTAAA	ACTAGTAACAAGAAGAT
Xenopuslav	TTCTAT	AAAC--T	ATAGAAGCA	CTTAT	GCTAGA	ACTAGTAATGTGA-TAC

3750 3775

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                 27       28     29   30      30a   30a' 30'
Gren006881  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren006882  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren006883  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren006939  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren196977  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren196978  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
Gren196979  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATTCCACTGATA
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Tobo186597  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATACCACTGATA
Trin196726  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATACCACTGATA
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pall207682  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATACCACTGATA
pallWR8626  A-AAATTCTCTTTAATGCAAATGTAAATCAGACAGGATATACCACTGATA
wagn010616  A-AAATTCTCCTTAATGCAAATGTAAATCAGACAGGATACACCGCTGATA
wagn012969  A-AAATTCTCCTTAATGCAAATGTAAATCAGACAGGATACACCGCTGATA
wagn177351  A-AAATTCTCCTTAATGCAAATGTAAATCAGACAGGATACACCGCTGATA
podicUC243  A--AATTCTCCATAATGCAAGCGTAAATCAGACAGGACCCACCACTGATA
podicUC244  A--AATTCTCCATAATGCAAGCGTAAATCAGACAGGACCCACCACTGATA
podicUC278  A--AATTCTCCATAATGCAAGCGTAAATCAGACAGGACCCACCACTGATA
podic53124  A--AATTCTCCATAATGCAAGCGTAAATCAGACAGGACCCACCACTGATA
chaq186524  GC-ACTTCTCCTAAATGCAAGTGTAAATCAGAAAGGACCCGCCACTGATA
knuds13244  TCAACTTCTCTTTAATGCAAGCATACATCAGACAGGACAAACCGCTGATA
Xenopuslav  ACGA-TTCTCCTAAATGTAAGTGTAAATCAGATCGAATAAATCACTGATA
                                     |
                                     3800
```

		31		32		33		33'		32'
Gren006881	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren006882	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren006883	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren006939	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren196977	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren196978	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren196979	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren196980	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren196999	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197000	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197001	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197002	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197003	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197004	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197005	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197006	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197007	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197008	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197017	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Gren197044	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn056421	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn056490	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn056561	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn056562	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn056612	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196895	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196896	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196897	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196898	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196899	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196900	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Tobo186597	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196726	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196727	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196728	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196729	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196730	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196731	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196732	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196733	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196734	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196888	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
StVn056613	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
StVn196894	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGTAACCCAG	CAAG	AAAAC	CCTCC
Trin175424	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Tobo186596	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196886	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin175410	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin175620	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
Trin196735	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
pall207682	ATTAA	CAC	---	CCATG	ATCCA	AAAG	GAGAAACCCAG	CAAG	AAAAC	CCTCC
pallWR8626	ATTAA	CAC	---	CCATG	ATCCA	AAAG	TAGAAACCCAG	CAAG	AAAAC	CCTCC
wagn010616	ATCAA	CGC	---	CCATG	AGCCA	GTAG	TAGCAACCCAG	CAAG	AAAAC	CCTCC
wagn012969	ATCAA	CGC	---	CCATG	AGCCA	GTAG	TAGCAACCCAG	CAAG	AAAAC	CCTCC
wagn177351	ATCAA	CGC	---	CCATG	AGCCA	GTAG	TAGCAACCCAG	CAAG	AAAAC	CCTCC
podicUC243	ATTAA	CAC	---	CCATG	AGCCT	GCAG	TAGCAACTAAA	CAAG	AAAAC	TCTCC
podicUC244	ATTAA	CAC	---	CCATG	AGCCT	GCAG	TAGCAACTAAA	CAAG	AAAAC	TCTCC
podicUC278	ATTAA	CAC	---	CCATG	AGCCT	GCAG	TAGCAACTAAA	CAAG	AAAAC	TCTCC
podic53124	ATTAA	CAC	---	CCTTG	AGCCT	GCAG	TAGCAACTAAA	CAAG	AAAAC	TCTCC
chaq186524	ATTAA	CAT	---	TTATG	ATCCC	ATAG	TAGTAACTTTA	CAAG	AAAAC	CCTAC
knuds13244	TTTAA	CAT	---	TCATG	ATCTA	ACAG	TAGAAACACCA	CAAG	AAAAC	TCTAC
Xenopuslav	ATTAA	CGT	CCT	CCCTG	AGATC	CTTG	CAATAACAAAA	CAAG	AAAAC	CATGC
	3825						3850			

		31'		29'		34		34'		28'		27'		35		36
Gren006881	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren006882	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren006883	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren006939	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren196977	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren196978	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren196979	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren196980	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren196999	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197000	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197001	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197002	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197003	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197004	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197005	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197006	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197007	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197008	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197017	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Gren197044	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056421	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056490	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056561	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056562	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056612	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196895	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196896	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196897	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196898	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196899	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196900	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Tobo186597	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196726	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196727	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196728	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196729	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196730	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196731	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196732	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196733	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196734	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196888	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn056613	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
StVn196894	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin175424	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Tobo186596	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196886	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin175410	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin175620	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
Trin196735	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
pall207682	T C C C C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
pallWR8626	T C C T C C A G	G C G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T C T A	A G A A	▨	A G A T	T A A A	A G
wagn010616	T T T T C C C A	A C G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T A	A G A A	▨	A G A T	T A A A	A G
wagn012969	T T T T C C C A	A C G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T A	A G A A	▨	A G A T	T A A A	A G
wagn177351	T T T T C C C A	A C G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T A	A G A A	▨	A G A T	T A A A	A G
podicUC243	T C T A T C C A	A T G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T T	T G A A	▨	A G A T	T T A A	A G
podicUC244	T C T A T C C A	A T G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T T	T G A A	▨	A G A T	T T A A	A G
podicUC278	T C T A T C C A	A T G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T T	T G A A	▨	A G A T	T T G A	A G
podic53124	T C T A T A T A	A T G	T T	A A	C	C T	T A C A C A	A G	A	G C A T	T T T T	T G A A	▨	A G A T	T T A A	A G
chaq186524	T T A A T T T T	A T G	T T	A A	C	C T	A A C A C A	A G	A	G C A T	T T C A	G G A A	▨	A G A T	T A A A	A A
knuds13244	T A A A C T T T	A T G	T T	A A	C	C T	A A C A C C	A G	A	G C A T	T A C A	A G A A	▨	A G A T	T A A A	A G
Xenopuslav	A C T T A T T A	C C G	T T	A A	T	C T	A A C A C A	A G	A	A C A T	T T A C	A G G A	A	A G A T	T A A A	A G
	3875							3900								

	36		37			38		39		39'
Gren006881	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren006882	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren006883	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren006939	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren196977	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren196978	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren196979	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren196980	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren196999	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197000	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197001	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197002	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197003	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197004	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197005	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197006	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197007	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197008	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197017	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Gren197044	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056421	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056490	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056561	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056562	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056612	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196895	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196896	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196897	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196898	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196899	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196900	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Tobo186597	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196726	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196727	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196728	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196729	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196730	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196731	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196732	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196733	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196734	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196888	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn056613	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
StVn196894	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
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Tobo186596	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196886	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin175410	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin175620	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Trin196735	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
pall207682	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
pallWR8626	AGTAAG	A	AGG	AACTCGGCAAAAT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
wagn010616	AATAAG	A	AGG	AACTCGGCAAAAT	▨	CTAACCCCG	CC	TGT	TTACCAAAA	ACA
wagn012969	AGTGAG	A	AGG	AACTCGGCAAAAT	▨	CTAACCCCG	CC	TGT	TTACCAAAA	ACA
wagn177351	AATAAG	A	AGG	AACTCGGCAAAAT	▨	CTAACCCCG	CC	TGT	TTACCAAAA	ACA
podicUC243	AGAAAG	A	AGG	AACTCGGCAAAAC	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
podicUC244	AGAAAG	A	AGG	AACTCGGCAAAAC	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
podicUC278	AGAAAG	A	AGG	AACTCGGCAAAAC	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
podic53124	AGAAAG	A	AGG	AACTCGGCAAAAC	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
chaq186524	AGAAAG	A	AGG	AACTCGGCAAATT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
knuds13244	AAGGAG	A	AGG	AACTCGGCAAATT	▨	TTAACCCCG	CC	TGT	TTACCAAAA	ACA
Xenopuslav	ACGCAG	A	AGG	AACTCGGCAAACT	A	TGAACCCCG	CC	TGT	TTACCAAAA	ACA
	3925					3950				

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                  40                      40'         41    42     42a
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Gren006883 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren006939 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren196977 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren196978 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Gren196980 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Gren197002 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197003 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197004 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197005 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197006 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197007 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197008 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197017 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Gren197044 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
StVn056421 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Tobo186597 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Trin196731 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Trin196734 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Trin196888 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
StVn056613 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
StVn196894 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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Tobo186596 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Trin196886 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Trin175410 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Trin175620 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Trin196735 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
pall207682 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
pallWR8626 T▨C|GCCTCTTGA|TAAA▨▨▨▨▨▨▨C|CCATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
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podicUC244 T▨C|GCCTCTTGA|CAAA▨▨▨▨▨▨▨C|C-ATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
podicUC278 T▨C|GCCTCTTGA|CGAA▨▨▨▨▨▨▨C|C-ATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
podic53124 T▨C|GCCTCTTGA|CAAA▨▨▨▨▨▨▨C|C-ATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
chaq186524 T▨C|GCCTCTTGA|--AC▨▨▨▨▨▨▨C|CTATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
knuds13244 T▨C|GCCTCTTGC|-ACA▨▨▨▨▨▨▨C|CTATAAGAGGT|CCA|GCC|T|GCC|CA▨|GT|
Xenopuslav TTC|GCCTCTTGC|TTAAAAAACATT|GTATAAGAGGT|CCA|GCC|T|GCC|CAA|GT|
           |                            |
           3975                         4000
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	42b		42b'		42a'	42'	43		43'	44		44'	
Gren006881	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren006882	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren006883	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren006939	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren196977	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren196978	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren196979	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren196980	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren196999	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197000	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197001	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197002	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197003	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197004	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197005	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197006	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197007	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197008	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197017	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Gren197044	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056421	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056490	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056561	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056562	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056612	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn196895	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn196896	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn196897	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
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StVn196899	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn196900	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Tobo186597	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196726	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196727	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196728	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196729	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196730	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196731	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196732	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196733	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196734	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196888	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn056613	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
StVn196894	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin175424	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Tobo186596	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196886	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin175410	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin175620	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Trin196735	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
pall207682	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
pallWR8626	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
wagn010616	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
wagn012969	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
wagn177351	GAC	CC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
podicUC243	GAC	TC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
podicUC244	GAC	TC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
podicUC278	GAC	TC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
podic53124	GAC	TC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
chaq186524	GAC	TT▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
knuds13244	GAC	TC▨▨TG	TTC	A	AC	GGC	CGCGGT	ATCCTA	ACCGTG	C	GAA	G	GTAGCGTAA
Xenopuslav	GAC	GTATAT	GTC	A	AC	GGC	CGCGGT	ATC-TG	ACCGTG	C	AAA	G	GTAGCGTAA

4025 4050

		45		45'		41'		38'
Gren006881	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren006882	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren006883	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren006939	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren196977	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren196978	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren196979	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren196980	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren196999	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197000	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197001	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197002	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197003	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197004	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197005	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197006	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197007	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197008	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197017	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Gren197044	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056421	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056490	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056561	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056562	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056612	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196895	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196896	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196897	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196898	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196899	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196900	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Tobo186597	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196726	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196727	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196728	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196729	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196730	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196731	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196732	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196733	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196734	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196888	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn056613	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
StVn196894	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin175424	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Tobo186596	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196886	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin175410	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin175620	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Trin196735	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
pall207682	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
pallWR8626	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
wagn010616	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
wagn012969	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
wagn177351	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
podicUC243	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAGGGTTAC
podicUC244	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAGGGTTAC
podicUC278	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAGGGTTAC
podic53124	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAGGGTTAC
chaq186524	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
knuds13244	TCACTT	GTTCTT	TAAAT	GAGGAC	TAGTATGAAT	GGC	ACCA	CGAAGGTTAT
Xenopuslav.	TCACT-	G-TCTT	--AAT	AAGAAC	TGGTATGAAC	GGC	--CA	CGAAGGTTCA
	4075				4100			

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                   37'         36'           35'                                  46                    46'
Gren006881 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren006882 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren006883 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren006939 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren196977 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren196978 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren196979 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren196980 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren196999 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197000 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197001 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197002 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197003 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197004 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197005 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197006 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197007 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197008 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197017 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Gren197044 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056421 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056490 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056561 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056562 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056612 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196895 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196896 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196897 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196898 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196899 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196900 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Tobo186597 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196726 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196727 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196728 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196729 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196730 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196731 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196732 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196733 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196734 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196888 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn056613 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
StVn196894 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin175424 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Tobo186596 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196886 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin175410 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin175620 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
Trin196735 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
pall207682 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
pallWR8626 A C T G|T C T|C|C T T C C C C T|A|A T C A|G T G A A A C T A A T C T T C|C C G|T G A A G A A G|C G G|
wagn010616 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
wagn012969 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
wagn177351 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
podicUC243 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
podicUC244 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
podicUC278 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
podic53124 A C T G|T C T|C|C T T C C T C T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
chaq186524 A C T G|T C T|C|C T T T C T T T|A|A T C A|G T G A A A C T A A T C T C C|C C G|T G A A G A A G|C G G|
knuds13244 A C T G|T C T|C|C T C T C T C T|A|A T C A|G T G A A A C T G A T C T C C|C C G|T G A A G A A G|C G G|
Xenopuslav A C T G|T C T|C|C T G C A T C C|A|A T C C|A T T A A A C T G A C C T - -|C C G|T G C A G A G G|C G G|
                       |                                                   |
                     4 1 2 5                                           4 1 5 0
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                                    47        48                    49          50          51            52
Gren006881  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren006882  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren006883  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren006939  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren196977  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren196978  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren196979  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren196980  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren196999  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197000  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197001  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197002  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197003  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197004  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197005  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197006  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197007  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197008  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197017  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Gren197044  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056421  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056490  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056561  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056562  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056612  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196895  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196896  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196897  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196898  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196899  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196900  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Tobo186597  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196726  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196727  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196728  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196729  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196730  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196731  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196732  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196733  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196734  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196888  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn056613  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
StVn196894  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin175424  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Tobo186596  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196886  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin175410  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin175620  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
Trin196735  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
pall207682  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
pallWR8626  G A A T A A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
wagn010616  G G A T A A G C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
wagn012969  G G A T A A A C T T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
wagn177351  G G A T A A G C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
podicUC243  G G A T A A A A C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
podicUC244  G G A T A A A A C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
podicUC278  G G A T A A A A C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
podic53124  G G A T G A A C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A C A - G T A A
chaq186524  G G A T A A G C C T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C A T A A G T A A
knuds13244  G G A T A A A C A T A T A A G A C G A G A A G A C C C T A T G G A G C T T T A A A C T A A - G A A T
Xenopuslav  G G A T A G A A C C A T A G A A C G A G A A G - C C C T A T G G A G C T T T A A A C T A - - A A G A
                              4 1 7 5                                           4 2 0 0
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              | 52 |         |Region of ambigious alignment excluded from analyses|
Gren006881    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren006882    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren006883    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren006939    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren196977    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren196978    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren196979    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren196980    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren196999    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197000    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197001    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197002    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197003    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197004    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197005    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197006    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197007    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197008    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197017    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Gren197044    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056421    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056490    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056561    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056562    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056612    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196895    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196896    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196897    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196898    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196899    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196900    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Tobo186597    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196726    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196727    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196728    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196729    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196730    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196731    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196732    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196733    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196734    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196888    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn056613    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
StVn196894    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin175424    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Tobo186596    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin196886    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
Trin175410    |TAAC|TGCC|CCTCACCC--------CTATAT---ATCTC|CGG-AAAAACTA
Trin175620    |TAAC|TGCC|CCTCACCC--------CTATAT---ATCTC|CGG-AAAAACTA
Trin196735    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGGAAAAAACTA
pall207682    |TAAC|TGCC|CCTCACCC--------CTATGT---ATCTC|CGG-AAAAACTA
pallWR8626    |TAAC|TGCC|CCTCCCCC--------CTATGT---ATCTC|CGGAAAAAACTA
wagn010616    |TAAA|TGCC|C-CCCCCC---TTTTTCTAT-TCAAATCTC|CGG--AAAACTA
wagn012969    |TAAA|TGCC|CCCCCCCCCCATTTTTCTAT-TCAAATCTC|CGG--AGAACTA
wagn177351    |TAAA|TGCC|CCCCCCCC---TTTTTCTAT-TCAAATCTC|CGG--AAAACTA
podicUC243    |CAAT|TGCC|C-TGACCC---------TATCTCCAGCCCC|CGGGCACAATCA
podicUC244    |CAAT|TGCC|C-TGACCC---------TATCTCCAGCCCC|CGGGCACAATCA
podicUC278    |CAAT|TGCC|C-TGACCC---------TATCTCCAGCCCC|CGGGCACAATCA
podic53124    |CAAT|TGCC|C-TGATAC---------TATCTCCAACCCC|CGAGCACAATCA
chaq186524    |CAAC|TGCC|C-ATTAAA---------TTTTTTAATCTCA|GGAAATTAATCA
knuds13244    |CAAT|TGCC|T-TTCCCA---------TCTTCAAATTCCA|GAAAACTAACT-
Xenopuslav    |ACTG|CCAA|GTTGAACC------------TAACCCATAA|GGAA-ATAACAA
                             |
                            4225
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                                                   52'            51'           53               53'      54
Gren006881 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren006882 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren006883 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren006939 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren196977 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren196978 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren196979 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren196980 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren196999 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197000 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197001 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197002 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197003 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197004 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197005 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197006 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197007 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197008 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197017 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Gren197044 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056421 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056490 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056561 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056562 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056612 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196895 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196896 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196897 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196898 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196899 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196900 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Tobo186597 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196726 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196727 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196728 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196729 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196730 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196731 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196732 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196733 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196734 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196888 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn056613 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
StVn196894 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin175424 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Tobo186596 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196886 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin175410 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin175620 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
Trin196735 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
pall207682 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
pallWR8626 C C T T A C C T G G G C A C ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
wagn010616 C T T T A T C T G A G C A T ▨ ▨ C C T A T T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
wagn012969 C T T T A T C T G A G C A T ▨ ▨ C C T A A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
wagn177351 C T T T A T C T G A G C A T ▨ ▨ C C T A T T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
podicUC243 - T T T A C T C A G G C A C ▨ ▨ C T T G A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
podicUC244 - T T T A C T C A G G C A C ▨ ▨ C T T G A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
podicUC278 - T T T A C T C A G G C A C ▨ ▨ C T T G A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
podic53124 - T T T A C T C A G G C A C ▨ ▨ C T T G A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
chaq186524 C G A C A C T T A G G C A C ▨ ▨ T T T G A T T A C A A G T T T T A G G T T G G G G T G A C C G C G G
knuds13244 - T T T A C C A A G A C A C ▨ ▨ T C T G A T T T C T A G T T T T A G G T T G G G G T G A C C A C G G
Xenopuslav - - T T A A A C A A G C A G A A A C T G A C C T A A A G T T T T C G G T T G G G G C G A C C A C G G
               |                                                 |
             4 2 5 0                                           4 2 7 5
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	54		54'		55		56		56'		57	
Gren006881	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren006882	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren006883	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren006939	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren196977	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren196978	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren196979	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren196980	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren196999	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197000	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197001	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197002	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197003	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197004	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197005	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197006	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197007	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197008	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197017	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Gren197044	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056421	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056490	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056561	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056562	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056612	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196895	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196896	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196897	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196898	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196899	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196900	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Tobo186597	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196726	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196727	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196728	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196729	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196730	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196731	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196732	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196733	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196734	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196888	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn056613	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
StVn196894	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin175424	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Tobo186596	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196886	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin175410	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin175620	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
Trin196735	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
pall207682	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
pallWR8626	AG	CAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGGA	CTCT-▨	TCCC	CTAA	AT	TC
wagn010616	AG	TAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGAA	TCTT-▨	TTCC	-TAA	AC	TC
wagn012969	AG	TAAAAAAATAAC	CTCCAC	AG	TG	A-AT	AGGA	TCTTT▨	TCCT	--AA	AC	TC
wagn177351	AG	TAAAAAAATAAC	CTCCAC	AG	TG	A-AT	GGAA	TCTTT▨	TTCC	-TAA	AC	TC
podicUC243	AG	CAAAAAAATAAC	CTCCAC	AG	TG	AAAA	AGGA	CTT--▨	TCCC	CTAA	AC	CC
podicUC244	AG	CAAAAAAATAAC	CTCCAC	AG	TG	AAAA	AGGA	CTT--▨	TCCC	CTAA	AC	CC
podicUC278	AG	CAAAAAAATAAC	CTCCAC	AG	TG	AAAA	AGGA	CTT--▨	TCCC	CTAA	AC	CC
podic53124	AG	CAAAAAAATAAC	CTCCAC	AG	TG	AAAG	AGGA	CTTT-▨	TCCC	CTAA	AC	CC
chaq186524	AG	CAAAAAAATAAC	CTCCGC	AG	TG	A-AT	GGAA	CTTAT▨	TTCC	-TAA	AC	CC
knuds13244	AG	TAAAAAACTAAC	CTCCGC	AA	TG	A-AC	AGGG	ATCTT▨	CCCT	--TA	AC	CA
Xenopuslav	AG	AATAAAAAAATC	CTCCTT	GA	AG	A-AT	AGGG	CCTACCA	CCCT	-TTC	AC	CA
		4300					4325					

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              58         58'     57'   59         59'  55'            60
Gren006881  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren006882  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren006883  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren006939  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren196977  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren196978  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren196979  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren196980  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren196999  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197000  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197001  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197002  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197003  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197004  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197005  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197006  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197007  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197008  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197017  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Gren197044  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056421  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056490  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056561  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056562  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056612  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196895  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196896  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196897  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196898  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196899  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196900  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Tobo186597  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196726  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196727  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196728  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196729  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196730  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196731  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196732  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196733  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196734  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196888  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn056613  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
StVn196894  A|GGA|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin175424  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Tobo186596  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196886  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin175410  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin175620  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
Trin196735  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
pall207682  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
pallWR8626  A|GGG|CCACAG|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAC
wagn010616  A|GGG|CCACAA|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
wagn012969  A|GGG|CCACAA|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
wagn177351  A|GGG|CCACAA|CCC|TAA|AA|AT|CA|ATAAAT▨|TG|A|CA|CCCATTGACC|CAA|TAT
podicUC243  A|GGG|CCACAG|CCC|CAA|GA|AT|CA|AAAAAT▨|TG|A|CA|CCCGTTGACC|CAT|TTT
podicUC244  A|GGG|CCACAG|CCC|CAA|GA|AT|CA|AAAAAT▨|TG|A|CA|CCCGTTGACC|CAT|TTT
podicUC278  A|GGG|CCACAG|CCC|CAA|GA|AT|CA|AAAAAT▨|TG|A|CA|CCCGTTGACC|CAT|TTT
podic53124  A|GGG|CCACAG|CCC|CAA|GA|AT|CA|AAAAAT▨|TG|A|CA|CCCGTTGACC|CAT|TTT
chaq186524  A|GGG|CTACGA|CCC|TAA|GA|AT|CA|ATAAAT▨|TG|A|CA|CTGATTGACC|CAA|TAT
knuds13244  A|GAG|CCACAA|CCC|TAA|GA|AT|CA|ACAAAT▨|TG|A|CA|TCAATTGACC|CAA|AAA
Xenopuslav  A|GAA|CCACCA|TTC|TAA|GT|AA|CA|AAATTTA|TG|A|CT|ATAATTGATC|CAG|TCC
                  |                               |
                 4350                            4375
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		60'		50'		49'		61	62	
Gren006881	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren006882	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren006883	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren006939	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren196977	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren196978	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren196979	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren196980	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren196999	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197000	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197001	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197002	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197003	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197004	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197005	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197006	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197007	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197008	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197017	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Gren197044	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056421	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056490	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056561	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056562	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056612	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196895	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196896	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196897	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196898	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196899	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196900	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Tobo186597	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196726	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196727	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196728	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196729	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196730	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196731	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196732	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196733	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196734	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196888	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn056613	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
StVn196894	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin175424	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Tobo186596	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196886	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin175410	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin175620	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Trin196735	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
pall207682	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
pallWR8626	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
wagn010616	T-	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
wagn012969	T-	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
wagn177351	T-	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
podicUC243	TT	ATG	ACCAACGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
podicUC244	TT	ATG	ACCAACGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
podicUC278	TT	ATG	ACCAACGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
podic53124	TT	ATG	ACCAACGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
chaq186524	TT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
knuds13244	AT	TTG	ATCAATGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCACTT	C
Xenopuslav	TA	CTG	ATCAACGAACC	AAGTT	AC	CCTAGG	GATAACAG	CGCAA	TCCATTT	C
		4400					4425			

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               63                63'            62'            61'                            64         65
Gren006881 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
Gren006882 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
Gren006883 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
Gren006939 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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Gren197000 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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Gren197004 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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StVn056561 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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Tobo186597 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
Trin196726 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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pall207682 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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wagn177351 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
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podicUC278 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
podic53124 A A|G A|G C T C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
chaq186524 A A|G A|G C C C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
knuds13244 A A|G A|G C C C C T A|T C|G A C|A A G T G G G|T T|T A C G|A C C T C G A T G T|T G G ▨ A T C|A G G G
Xenopuslav A A|A A|G T T C C T A|T C|G A C|A A A T G G G|T T|T A C G|A C C T C G A T G T|T G G A A T C|A G G G
                   |                                                 |
                 4450                                              4475
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              65     66        67                      67'           66'      68                  68'
Gren006881    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren006882    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren006883    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren006939    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren196977    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren196978    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren196979    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren196980    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren196999    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Gren197002    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Gren197004    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren197005    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Gren197007    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Gren197008    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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StVn056421    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn056490    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn056561    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn056562    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn056612    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196895    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196896    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196897    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196898    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196899    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
StVn196900    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Trin196732    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Trin196733    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Trin196734    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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StVn196894    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Trin175424    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Tobo186596    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Trin175620    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
Trin196735    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
pall207682    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
pallWR8626    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
wagn010616    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
wagn012969    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
wagn177351    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
podicUC243    T A T C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
podicUC244    T A T C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
podicUC278    T A T C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
podic53124    T A C C C C A G T G G T G C A G C C G C T G C T A A A G G T T C G T T T G T T C A A C G A T T A A A
chaq186524    T A T C C C A G T G G T G C A G C C G C T A C T A A A G G T T C G T T T G T T C A A C G A T T A A A
knuds13244    T A C C C C A G T G G T G C A G C C G C T A C T A A C G G T T C G T T T G T T C A A C G A T T A A A
Xenopuslav    C A T C C C A G T G G T G C A G C C G C T A C T A A A G G T T C G T T T G T T C A A C G A T T A A A
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Gren006881	A C C
Gren006882	A C C
Gren006883	A C C
Gren006939	A C C
Gren196977	A C C
Gren196978	A C C
Gren196979	A C C
Gren196980	A C C
Gren196999	A C C
Gren197000	A C C
Gren197001	A C C
Gren197002	A C C
Gren197003	A C C
Gren197004	A C C
Gren197005	A C C
Gren197006	A C C
Gren197007	A C C
Gren197008	A C C
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Gren197044	A C C
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StVn056490	A C C
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podic53124	A C C
chaq186524	A C C
knuds13244	A C C
Xenopuslav	G C C

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Vita

Kenneth Christopher Yanek was born on 4 June 1977 in Rockville Centre, New York, USA. He graduated from Adelphi University, Garden City, New York, where he completed the requirements for the degree of Bachelor of Science in Biology in May, 2001. He completed the requirements for the degree of Master of Science in Biology in July 2004.