

Appendix II

Alignment of sequences used in this study. Stem regions of the secondary structure model are shaded. Numbers above alignment are arbitrary stem numbering, numbers below alignment correspond to base positions in the *Xenopus laevis* mitochondrial genome. Boxes represent indels in the *X. laevis* sequence and were not included in the analyses. See taxa abbreviations in Appendix I.

		27	27	27'	27'	28	28'	22'	31	31							
Norm	AA	CA	AAC	TGGG	ATTAGATAC	CCCA	CTA	TGCCTAAC	CGTAAAC	TTT	AATTTACACCTTT	TAT	CGCC	CGG	AACTAC	GAGGC	C
Toba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PaBl	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pará	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nari	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
JVGo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Icac	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FrGu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Emba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beni	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Arim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BoVi	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
IgCo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pern	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guya	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taci	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Myce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Xeno	AA	CA	AAC	TGGG	ATTAGATAC	CCCA	CTA	TGCCTAGC	CATAAAC	TTT	GACTACTTACGCAA	AAA	TCCGC	CAG	AACTAC	GAGGC	CT
					2650												
		31'	31'	2'	32	32	32	33	34	35	2700	35'					
Norm	AA	GCTT	AAAA	CCC	AAAGGA	CTTGG	ACGG	TACCCCA	AATCC	AC	CTAGA	GGAGCCTG	TCT	TATA	ATCG	GATAACCC	CGTTCAACC
Toba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PaBl	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pará	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nari	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
JVGo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Icac	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FrGu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Emba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beni	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Arim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BoVi	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
IgCo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pern	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guya	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taci	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Myce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Xeno	AA	GCTT	AAAA	CCC	AAAGGA	CTTGG	ACGG	TGCTCCA	AACCC	AC	CTAGA	GGAGCCTG	TCT	TATA	ATCG	GATAACCC	CGCTAAACC

		36		38	38		38		39	40	40'		39'	42				
Norm	TCA	CCACTTC	TTGTCTA	T	CAGGC	TGTATA	CCTCCGTCG	CCA	GCTTAC	CGCATGAG	GCG	TT - TTAAG	GTGAGC	CCAAT	GCCCAT			
Toba	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
São1	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
PaBl	.	T	.	T	.	.	.	.	.	.	.	C	.	.	.
Pará	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
Pana	.	T	.	.	.	.	.	.	.	G	.	.	.	.	.
Nari	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
JVGo	.	T	.	.	.	.	.	.	.	.	.	.	A	.	.
Icac	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
FrGu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Emba	.	T	.	T	.	.	.	.	.	.	.	.	.	.	.
Beni	.	T	.	T	.	.	.	.	.	.	.	.	.	.	.
Arim	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
BoVi	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
IgCo	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
Pern	.	T	.	.	.	.	.	.	.	.	.	.	.	TA	.
São2	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
São3	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
São4	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
São5	.	T	.	.	.	.	.	.	.	.	.	.	.	.	.
Guya	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taci	.	.	.	TA	.	A	.	.	.	.	.	A	.	T	T
Myce	.	.	C	.	.	.	.	.	.	G	.	C	A	TT	TT
Xeno	TCA	CCACTTC	TTGCCAA	A	CCCGGC	TATATA	ACCACCGTCG	CCA	GCCCAC	CTC	G	GTGAGAG	C	ATTCTTAG	GTAGGC	TTAAT	GAT	TTT
		2800										2850						

		42'		38'	38'		38'		36'	34'	34'		45		45'		
Norm	AC	GCCAAACA	CGTCA	GGTCA	AGGTCA	AGGTGCAGC	TAAAT	G	GAAGTGG	GAAGA	GATGGGCTAC	ACT	TTCTA	T	CCCTAG	AAAAAAC	GAAA
Toba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
São1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
PaBl	.	.	.	.	.	.	.	.	A	A	.	.	.	.	TT	.	.
Pará	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
Pana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
Nari	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
JVGo	.	.	.	.	.	.	.	.	A	.	.	.	.	.	TTT	.	.
Icac	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
FrGu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Emba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beni	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Arim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
BoVi	.	.	.	.	.	.	.	.	.	.	.	.	.	.	A	.	.
IgCo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	A	.	.
Pern	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
São2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
São3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
São4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
São5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	TT	.	.
Guya	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taci	.	.	T	.	.	.	T	T	.	.	.	.	.	.	.	T	G
Myce	.	C	.	.	.	.	.	.	.	.	.	.	.	.	A	.	C
Xeno	TCA	TCAACA	CGTCA	GGTCA	AGGTCA	AGGTGCAGC	TAAAT	G	GAAGTGG	GAAGA	AATGGGCTAC	ACT	TTCTA	T	CCCTAG	AAAAAAC	CGCAA
						2900											2950

	6	7	8	9	10	10'	9'	11	12	13	13'																	
Norm	TCT	CTTT	ATGC	AAAG	CTTAA	GTCAGC	AA	GGACCA	ACC	ACTGAC	AATTA	CAT	---	CCCTG	AGCCC	ATAG	TAAAA	CACTA	CA									
Toba								
São1	TTT	.	.	.	T								
PaBl	C	.	.	.								
Pará	G	.	.	.	.	.	.	.	TTT	.	.	.	T							
Pana	A	C	NN	.	.								
Nari	C	.	.	.								
JVGo	TTT	C	.	.	T								
Icac	C	.	.	.								
FrGu								
Emba	C	.	.	.								
Beni	T	A	.	.	T								
Arim	C	.	.	.								
BoVi	C	.	.	.								
IgCo	G	.	.	.	.	.	.	.	.	C	.	.	.							
Pern								
São2								
São3	TTT	.	.	T								
São4	TTT	.	.	T								
São5	TTT	.	.	T								
Guya								
Taci	.	.	A	.	.	A	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Myce	.	.	A	.	A	A	.	T	TA	A	TA	.	C	T						
Xeno	TCT	CCTA	AA	TGT	AA	G	TA	AA	ATC	AGAT	TC	GA	ATA	ATC	GA	AT	TA	AA	CGT	CCCT	CCCTG	AGATC	CTTG	CA	ATA	CA	AAA	CA

3800

3850

	13'	12'	11'	8'	14	14'	7'	6'	15	16	17			
Norm	AGAAAAC	TCTAC	TATTTAAG	ATGTTAA	CCTAACACA	AGA	AGCAT	TTCA	AGAA	AGAT	TAAA	AGAAAAG	AGG	AACTCGGCAA
Toba
São1	.	.	.	G	.	.	.	.	.	.	.	.	.	.
PaBl
Pará	.	.	.	G	.	.	.	.	.	.	.	.	.	G
Pana
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi
IgCo
Pern
São2	.	.	.	G	.	.	.	.	.	.	.	.	.	.
São3	.	.	.	G	.	.	.	.	.	.	.	.	.	.
São4	.	.	.	G	.	.	.	.	.	.	.	.	.	.
São5	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Guya
Taci
Myce
Xeno	AGAAAAC	CATGC	ACTTATTA	CCGTTAA	TCTAACACA	AGA	AACAT	TTAC	AGGA	AGAT	TAAA	AGACGCAG	AGG	AACTCGGCAA

3900

	21'	18'	18'	17'	16'	15'	26	26'	27	27
Norm	G C A C C A	C G A	A G G T T A T	A C T G T C T	C T T T T T 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 G A A T A A A A A	T A T A A G A
Toba
São1
PaBl
Pará
Pana
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi	G
IgCo	G
Pern
São2
São3
São4
São5
Guya
Taci	C
Myce
Xeno	G C - - C A	C G A	A G G T T C A	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 A C T G A C C T - -	C C G T G C A G A G G	A C G G G G A T A G A A C	C A T A G A A

4150

	27	28	28	29	30	31																
Norm	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 A A C A	T A C A A T T G	C C T T T T C T	- C A T A A A A A T T C C	A G A A A A A A C A C T T C T A T T	C A G G												
Toba
São1
PaBl
Pará
Pana
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi
IgCo
Pern
São2
São3
São4
São5
Guya
Taci
Myce
Xeno	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 A C T G	C C A A G T T G A A C C T A A C C C A T A	A G G A A A T A -	A C A A T T A A A C A A G													

4200

4250

	31'	30'	32	32'	33	33'	34	35	35'				
Norm	C A C T	T T G A T A T A	A A G T T T T A	G G T T	G G G G T	G A C C	A C G G A G	T A A A A A C A A C	C T C C G C A G	T G A A A	G G G G	C T T T T	C C C C T A
Toba	A	A	C
São1	T
PaBl	C	.
Pará	C	.
Pana	C	.	A	.	.
Nari	A	.	C
JVGo
Icac	A	.	C
FrGu	A	.	T	.
Emba
Beni	C
Arim	A	.	C
BoVi	G	.	.	.	.	A	.	T
IgCo	G	.	.	.	.	A	.	T
Pern
São2	A	.	C
São3	T
São4	A	.	C
São5	A	.	T
Guya
Taci	T	.	.	.	.	.	.	.	.	A	.	C	C
Myce	C	.	A	T
Xeno	C A G A A A	C T G A C C T A	A G C A A A A C	G G T T	G G G G C	G A C C	A C G G A G	A A T A A A A A T C	C T C C T T G A	A G A A T	A G G G	C C T A C C A	C C C T T

4300

	36	37	37'	36'	38	38'	34'	39	39'	29'	28'	
Norm	A G C C A A	G G G	C T A C G A	C C C T A A	G A A T	C A A T A G A T	T G A C A	C T A A T T G A C C	C A A T T A A	T T G A T C	A A T G A A C C	A A G T T A C C C T
Toba	A	.	.	.	.	.	.	.	.	.	.	.
São1	.	A	C	A	.	C	.	.	.	.	.	.
PaBl	A	.	C	.	.	.	.	.	.	.	.	.
Pará	A	N	.	A	.	.	.	.	.	.	.	.
Pana	A	.	C	.	.	.	.	.	.	.	.	.
Nari	A	.	C	.	.	.	.	.	.	.	.	.
JVGo	A	.	C	.	.	.	.	.	.	.	.	.
Icac	A	.	C	A	.	.	.	.	.	.	.	.
FrGu	A	.	C	.	.	.	.	.	.	.	.	.
Emba	A	.	C	.	.	.	.	.	.	.	.	.
Beni	A	.	C	.	.	.	.	.	.	.	.	.
Arim	A	.	C	.	.	.	.	.	.	.	.	.
BoVi	A	.	C	.	.	.	.	.	.	.	.	.
IgCo	A	.	C	.	.	.	.	.	.	.	.	.
Pern	A	.	C	.	.	.	.	.	.	.	.	.
São2	.	A	.	A	.	.	.	.	.	.	.	.
São3	.	.	.	A	.	C	.	.	.	.	.	.
São4	.	.	.	A	.	C	.	.	.	.	.	.
São5	.	.	.	A	.	C	.	.	.	.	.	.
Guya	.	.	.	.	.	.	.	.	.	.	.	.
Taci	A	T	.	C	.	.	.	.	.	.	.	.
Myce	A	.	A	C	A	T	G	.	A	T	.	.
Xeno	C A C C A A	G A A	C C A C C A	T T C T A A	A G T A A	C A A A A T T A	T G A C T	A T A A T T G A T C	C A G T C C T A	C T G A T C	A A C G A A C C	A A G T T A C C C T

4350

4400

	28'	40	41	42	42'	41'	40'	43	44	45	
Norm	A G G	G A T A A C A G	C G C A	A T C C A C T T	C 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 T A T	C C T A
Toba
São1
PaBl
Pará	.	N	.	.	.	.	.	.	.	.	.
Pana	.	.	N	.	.	.	.	.	.	.	.
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi
IgCo
Pern
São2
São3
São4
São5
Guya
Taci
Myce
Xeno	A G G	G A T A A C A G	C G C A	A T C C A T T T	C 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 T C A G G G C A T	C C C A

4450

4500

	46	46'	45'	47	47'	44'	43'	48	48'	48'			
Norm	G T G G T	G C A G C C	G C T A C T	A A T G G T	T C G T T	T G T T C	A A C G A T T A A A	A C C C T A C	G T G A T C T G A	G T T C A	G A C C G G A	G T A A T C C	A G G
Toba
São1
PaBl
Pará
Pana
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi
IgCo
Pern
São2
São3
São4
São5
Guya
Taci
Myce	.	G	.	.	.	.	.	.	.	.	.	.	.
Xeno	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	G C C C T A C	G T G A T C T G A	G T T C A	G A C C G G A	G T A A T C C	A G G

4550

	48'	27'	27'	49'	49'	50'	51'	51'	50'	52'					
Norm	T C A G T T	T C T A	T C T A T A	A A G A G	C T T T T T C	T A G T A C	G A A A A	G G A C C	G A A A A A G	C A C G G C	C T A T A C	T C T A	A G C A	A G C C G	T A A C A A C
Toba
São1
PaBl	G
Pará
Pana
Nari
JVGo
Icac
FrGu
Emba	G
Beni	G	.	.	G
Arim
BoVi
IgCo	G
Pern
São2
São3
São4
São5
Guya	G
Taci
Myce
Xeno	T C A G T T	T C T A	T C T A T G	A A G T A	T T T T T C	T A G T A C	G A A A A	G G A C C	G A A A A A A T	G A G G C	C A A T	G T T T	T A C	A G C C T C T	C T A T

46004650

	53'	53'	52'	54'	54'			
Norm	C A A C T T A T	G A C A T A G T C T T A	A T A A A	A T T A T	G T A T A C C A A C A A	G C C C	A A G A A T A A	G G G
Toba
São1
PaBl
Pará
Pana
Nari
JVGo
Icac
FrGu
Emba
Beni
Arim
BoVi
IgCo
Pern
São2
São3
São4
São5
Guya
Taci
Myce
Xeno	- - A T C A A T	G T A G T C A A C T A A A T	T G A A A A	T A G A A C T A A T A C T C T	G C C C	A A G A - T T A	G G G	

4700[16S ends]


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Norm CTTGCCCTCACAATTTGACATATTGCCCTACCAATTTCACTTTTATTTATTCCACCTATTACATGGAAATGTGCC
Toba . . . . . C . . . . . C . . . . . TTG . . . . . C . . . . . C . T . . . . .
São1 . . C . . . . . C . . . . . C . . . . . TTG . . . . . C . . . . . CG . . . . . T
PaBl . . . . . C . . . . . C . . . . . T . G . . . . . C . . . . . C . . . . . T . . . . . T
Pará . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Pana . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Nari . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
JVGo . . . . . C . . . . . C . . . . . T . . . . . C . . . . . T . . . . . C . . . . . G . . . . . T
Icac . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
FrGu . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Emba . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Beni . . . . . . . . . . . C . . . . . T . . . . . . . . . . . . . . . . . . . . . . . . . T
Arim . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
BoVi . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
IgCo . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . T
Perm . . . G . . . . . C . . . . . T . . . . . C . . . . . . . . . . . . . . . . . . . . . . . T
São2 . . C . . . . . C . . . . . C . . . . . TT . . . . . C . . . . . . . . . . . . . . . . . T
São3 . . A . . . . . C . . . . . C . . . . . TT . . . . . C . . . . . . . . . . . . . . . . . T
São4 . . C . . . . . C . . . . . C . . . . . TTG . . . . . C . . . . . . . . . . . . . . . . . T
São5 . . C . . . . . C . . . . . C . . . . . TTG . . . . . C . . . . . . . . . . . . . . . . . T
Guya . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Taci . . . . T . A . . C . . C . . . . . . . . . . C . . . . . C . . . . . G . . . . . G . . . . . A . . . . . T
Myce . . C . . . . . C . . . . . CG . . . . . T . . . . . C . . . . . T . . . . . C . . . . . CC . . . . .
Rana C TAGCTCTCATTATCTTTTCATATTTCCATGCCAATTTCCCTTCTCTTCACCCCCCACTGCCCTGGAAGCGTGCCT
[ND1 ends]

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