

Additional file 2, content:

part 1: Latimeria T2R protein sequences in fasta format. Predicted stop codons in six potential pseudo genes are indicated by X (red background), sequence after frame shift (2 genes) highlighted with yellow color.

part 2: Latimeria V1R protein sequences in fasta format.

part 3: Tree file in Newick format for T2R and V1R sequences shown in Fig. 1.

part 4: Tree file in Newick format for T2R sequences shown in Fig. 2.

part 5: Tree file in Newick format for V1R sequences shown in Fig. 3.

Part 1 ***Latimeria T2R* protein sequences in fasta format.**

>LC_T2R12

MVTVDIILQLAAILFVIVFGIIGNLFIIVINQELRRTGTLQPSEIRIVSCIAVSNILAVI
VLAIWFIIIFLLDLCTYLGPYIYKVTDLIVFVITKVGWFTAWLCFFYCVKIVKINWRIFI
KLKQGTSLLSVFLLFATVVCVSGVAYPAIYIIRTLNNTTSIVGQCKGYIILGHEFMMGYIV
FVSFIASLLPLALMLLSSLGIVFFLLKHSKNMKTSTNSVSSPQNEGPTTVVKMVISLIVL
YIVSVISILVTNHVATIIESDMVVIASSSCVFSAGSSVILIVGTVKLRQAFLKIFCSAG
QCYNKCRTK

>LC_T2R11

MVTVDIILQLAAILFVIVFGILGNLFIIVINQEFRRTGTLQPSEIRIVSCIAVSNILAVI
VLATWFIIFLLDLCTYLGPYIYKVTDLIVFVITKAGYWFTAWLCFFYCVKIVKVNWRIFM
KLKQGISLLVSFLLFATVLCVSGVAYPVYVIRTNLNNTTSIVGECKDYIIGHEFMMGYIV
FLSVIASLLPLALMLLSSLGIVFFLLKHSKNMKTSTNASSGPRTEGPTAVVKMLISLIVL
YIVSVISILVTNHVATIIESDMVVIASSSIFFSAGSSVILIVGTVKLRQAFLKIFCSAG
QCCNK

>LC_T2R10

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KLKQGISSLVSFLLFATVVCVSGVTPYIYIIRTLNNTTSIVGECKDYIIGHEFMMGYTV
FLSFASLLPLALMLLSSLGIVFFLLKHSKNMKTSSASSGPRTEGPTAVVKMLISLIVL
YIVTVISVPVTNLVATTNESDMVVIASFSCIFSAGSSVILIVGQVKLRQAFLKIFCSVG
QCCNKCRTK

>LC_T2R09

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KLKQGISSLVSFLLIATTVCSVSGVAYPVIDTIRTLNNTNIIGECKDYIILKHEYLVGYII
FLSFASLLPLALMLLSSLGIVIFLKHSTNMKTSSNTSSGSRSEGPIAVVKMLISLIIL
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QCYNKCTG

>LC_T2R07

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TLKQRISLVSFLLIATVLCFAVAYPVYIYIIRSLNNTNTIIGECKDYIITQHELTMGYAI
FLSLVASLLPLALMLLSSLGIVVFLFKHFKNMKTSSNTSSSPRNEGPIVAKMLISLIVL
YVVTVICVLVTNHVFTIVASDMVVIASSSCVFSAGSSVILIVGTVKLRQAFLKIFCSVG
RYLQ

>LC_T2R08

MATVAIILQLAAIMFVIFFGIIGNLFIVIVNYQKFWRTRTLQPSEQIVSCIAVSNILVVI
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KLKQSISSLVSFLLIATVLCNFGVAYPVYIIRSLNNTNSNEECKDYHIFGHEYLVGAV
FLSVITSLPLVLMLISSLGIVVFLKHSKNMSKTSNTTSGSRSEGPTAVAKMLVSLIIL
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RCCNKCRA

>LC_T2R25

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NLVLFVWVYLFNLCTHFGVYQVTDVFNALFLSKSSYWFATWLCFFYCVKIKVNWVLM
RLKQKMTSVVHILILASLMLSFVAVPIIYRVKFRKNATSISELCKLYYDTGGESGYIYG
AMMSLLTSFLPLAVMVISSMGIVIFLCRHSRNMTRKNTGGSSHTDAHTAVALMLLCLIV
LYIICTSTVLSANLQIALSQFDVLLAISFTSSIYSAGSSVILIIIGTVKLRQSCGKLCCSG
G

>LC_T2R31

MVAVDAILQMLIAVIVSISFTGNSFIVHVYFLDYRRNKALKPNELIVTVLAFFNILIQF
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SLKQKISLLVNILIFFSMLVNFALPVIYMIKLLKANSTLSMLCKDYYITGDTAYIYSA
FLSFFTSFLPLVIMLMSSLGIVIFLCMHSRMTMRKNTVAGNSSHGAHTAVAMMIVCLIVL
YMLCKITVLANIQIAMADEFDISIAIFCASSIHSAGSSVILIIIGTVKLRQSCGTLCCSQ
VSDSNN

>LC_T2R30

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LQKQISLLVNILILCSMLVNFALPVIYMIKLLKANSTNLSMLCKDYYITGDTIHIYSAF
LSFFTSFLPLVIMLMSSFGIVTFLCMHSRMTMRKNTVAGSSSHGDAHTVVTVMIVCLIL
MLCTVTALANLQIAMADEFDILVAITFASSIHSAGSSVILIIIGTVKLRQSCGTLCCSQ
SD

>LC_T2R32

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LQKQISLLVNILILFTMLVNIFLALPIIYMIKLLKVNSTLSMLCKNYYITEETTHIYSAF
LSFFTSFLPLVIMLMSSLGIVIFLCMHSRMTMRKNTVAGSSSHSDAYTAVTMIIVCLIF
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SDSNK

>LC_T2R26

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RLNQRISLVNLIISFSLISFPVAYPVYIYIKLVNNTLSMLCKDYYITGDTTHIYGA
FLSFLTSFPLAVMLASSMGIVIVLCTHSRNMKRNAVASSSSHGDAHTTVAVMIICLILL
YVLCITVLSANLQIALSHFNTLIGISFTSSLYSAARSVILIIIGTVKLRQSYGTLCCS

>LC_T2R27

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SLVLWFMLYL FNLCTYFGGVYKVTDFNI IFFSKSSYWFTAWLCFFYCMKI IKVKRMFFI
RLKQRMSLLVKILILCTMMLNFSLAYPVVFLIKLKANSTSSISILCKDYYITGDTTHIYGA
SLSFLTSLSP LAVMLVSSMGIVIFLCLHSRNMKRNAIAGNSSHGNTHTAVAVMIICLILL
YMLCTITVLSANLQVALAQFDTLVAITFTSSLYSAGSSLILITGTVKLRQSCVTLFCSCR
QQQ

>LC_T2R28

MVAIDAVLQMLAEVIIVLIALGGNSFIFCVYFLDYKRNKTLQPNE LLVTVFFASFNILIQI
TLIWFVVYLFNLCTYFGEVYKVMDFSAIFLSKSSFWFI AWLCFIYFLKIVRIKSRFFMG
LQQKMSSLVIVLILITLLVSFSVALPVIYMIKLQTNSTSSISELCKDYYIIGKFAYIHGAF
LSILTSFLPLVIMLISSMGIVIFLCTHSRKMKNVAVASSSSNEDAHTAVAVMIICLILLY
VLCIITVLSGNLQIALSQVDETVIIVFMSCIYLA VSPVILII GTVKLRHSFKKLLTSFKR
YCIKLFNV

>LC_T2R20

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NLTFWFIIYLFNLCA YFGDEVYKVTDFLAIFFSKASYWFTAWLCFVYCVKI IKVNWRFM
RVKKRLNPLVNSLIIGTVLASFAMSFPIVYFIEFKTNSTSSISKCKDYYVDGMNIKIYAA
SLSFLTSLVPLAVMVFSSMGIVIFLYQHSWNKSKNVSSGASSHGDAHTAMAVMLICLNIL
YVACTATVLAANLIIAIVESDIMIAISFTSSIIYSAGSSIIIIIGTVKLRQSCGKISLKLL
FCWKQRLM

>LC_T2R21

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NLTFWFIIYLFNLCA YFGDEVYKVTDFLAIFFSKASYWFTAWLCFVYCVKI IKVNWRFM
RVKKRLNPLVNSLIIGTVLASFAMSFVVYFIEFKTNSTSSISKCKDYYVDGRNIEIYAA
SLSFLTSLVPLAVMVFSSMGIIIFLCRHSWNMSKNVSSGASSHGDAHTAVAVMLICLIVL
YVACTATVLAANLIIAIIESDILIAISFTSSIIYSAGSSIIIIIGTVKLRQSCRKL

>LC_T2R22

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SLKQKISSVVKTLITCTLLGTIALSAPVVYYVKLNTNLSSISEICKVYYIDAHNEVYAAF
LSVLTSLPLAVMFISSGTIVVFLCRHSRNMTKNVTPGGTHNDAHTAVAIMLTCLIVLYI
ACTVTVFAANLLVVTIESDVLVAISFTSSIIYSAGSSVILII GTVKLRKNWVKLCCGGVI
LQ

>LC_T2R24

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WLKQRISRNVNTLIIGTMFFSIIISYPCIIYVIEIKTNVTSITQRCKDYYITGQSIEIYSP
SLSFLGSLPLALMVMSSMGIVIFLFRHSRNMNTANTTTGSASRNDAAHTTVAIMLICLIVL
YLACTVTVFVANI IAMIANDILIAISFTSSLYATGSSLILII GTVKLRQSCSKLSCLCR
RCNSKNPQH

>LC_T2R23

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PMVVNIIIGTLIGCFPISVPAIHVYKFKTNFTSVSDLCRDYYPHSGNEVYAVLLSVLTS
FLPLVIMVICIMTIVIFLCIHSKNMSKNVTLGGSSHGDAHITVAIMLICLIVFYIACAT
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>LC_T2R06

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FLSFLTCFLPLALMLVSSGTIVVFLCQHSKRMNKSAGAGDGTSPDSHTTVAKMIVSLIVL
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>LC_T2R13

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RLKQRIHKGVNTLIVGTVLGNFVICLPVFNKIKTNSTNLKEQCRDYVVLGSSTYIYHAT
TSLSVLTSFLPLVLMLSSTGIVVFLCKHSRTMNKNSSSGATSHSDAPTAVAKMIVALIIL
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LQDY

>LC_T2R05

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RLKQSSSSWVAPVITGTALGCCTISFFIVFYIQIPTNTTNETEPCKDYIIISSDYIIYSA
FYSLLGCFLPLALMAVSSSVIVAFCKHAKRMRKTTSGASTPQSGTHTAVAKTIFGLIVL
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SKQRNEVQ

>LC_T2R18

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KVNWRFTFLKLDRISSVVKVLIAVTMVGLALSLPIIFFIQLOQSNNTSISAQCKNYINE
NSFYVYAAFLSFFTSFLPLAIMLASSMTIVTFLCKHSRKMTNNYNAISGSHGDGPAAVAK
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>LC_T2R19

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FLSFFTSFLPLAIMLASSMTIVTFLCKHSRKMNKSTNAISGSRGDGPAAVAKMITSLIVL
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TEKPKHAVTAASVNR

>LC_T2R16

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TEKPKH

>LC_T2R17

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FLSFFTSFLPLAIMLVSCMMIVTFLCKHSRKMSKNTNSISGPLRNGPVAVAKMITSLIVL
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TEKPKHS

>LC_T2R14

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KLKRRISSVVKVLI VVTLVGLVVLPI IFYIQLQSN TTSI SAQCKNYYITENNIHVYGA
SLSFFTSFLPLAIMLASSMMIVTFLCKHSRKMSKNTNAVSGSRGDGPAAVAKTITSLTVL
YVVC GTGVFAL TSLVVLKDNVLFIALSCSVYSAGCSMILIVRTVKLKVRCRGLCCRDNR
TEKPKH

>LC_T2R15

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KLKRRISSVVKVLI VVTLVGLVVLPI IFYIQLQSN TTSI SAQCKNYYITENNIHVYGA
FLSFFTSFLPLAIMLASSMMIVTFLCKHSRKMSKNTKAVSRSHGDGPAAVAKTITSLTVL
YVVC GTGVFAL NSLVVLEDNVLFIALSCSVYSAGCSMILIVKTVKLERCREVCCRGNR
TEKPKH

>LC_T2R34

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LKQRISIVSVLLSSFLLCFAVSFPVVYFIQLKPNSSIPCKTHYTLGKALFIYNI FNVA
LAYYLPLVMMTCSLGI VIFLCRHSRNM DKNIAAGGSSHSDAHKPVAVMLICLILLYMTC
ALTVLLASVQASLGEIDIMTAIPYTASLFNTGSSMILIVGTVKLRQSFRTLWCFCR

>LC_T2R35

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ALVLPVAVRTLLFCRYFADPIYKFSDFSTFFSKSTYWFVACL CFYCYCMKIVKVNWRFLLR
LKQRMSTVMNVLLSSFLLCFAVSVPVAHFIKLKPNS SIPCKTYTLGKALFIYNI FNVV
LAYYLPLVVMVICSLGI VVFLCHHSRNM DKNVAAGGSSHSEAHKAVAIMLICLILLYMTC
ALTVLLASVQTSLGEIDIMTAIPYTASIFSTGSSMILIIIGTVKLRQNFRL

>LC_T2R36

MATTKSLVDLVVRLTIIFVGLVGNF ILHVYSLEYRKSKNLQPNELITALLALFNLLSSA
NLVITTVRTLLFCSYFQEA VYKFTDSFSNFTSKSTYWF TACL CFYCYCMKIVKVNWRFFLR
LKQKISLVVNILLSTLILCFTISIP IYLIKLPNSSVPCKTHFILGRTLFIYGIINGV

LTSYLP L L L M V I C S L G I V I F L C Q H S R N M D K N V A A S G T S H S E A H K A V A I M L I S L I L L Y M T C
A I T V L L A S V Q L T L G E I N I M T A I P Y T A S I F S T G S S V I L I I G T V K L R Q S F K K S L F F L K T F L Y
E S C P F

>LC_T2R37

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N L V L P N L R T L L F C S Y F G E A I Y K F T D S F S N F V S K S T Y W F T A W L C F Y C V K I V K V N G R F F L R
L K Q R I S L V V N I L L L S T I T L C F T I S I P I L Y L I K L K L N S S V P C K T H F I L G R T L F I Y G I V N G V
L T S Y L P L V M V I C S L G I V I F L C Q H S R N M D K S I A A G G T S H S E A H K T V A I M L I C L I L L Y M T C
A I T V L L A S I Q L T L G E I N I M T A I P Y T A S I F S T G S S V I L I I G T V K L R Q S F K K L W C F C G

>LC_T2R33

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A H V L P A L R T L V F C T Y F K E P V Y K F S D F F S F F F S K L T Y W Y V A W L C F F Y C V K I V K V N W K F V L R
L K Q R I S I V V N I L L L G S L I L C F A L S M P L P Y L I K L K A N S S V P C R N F Y I V G K A L F I Y G V I I A A
L T A Y F P L L I M V I S S L G I V I F L C Q H S R N M D K N V A A G G S S H S E A H K A V A I M L I C L I L L Y M T C
A L T V L L S S V Q V S L G L N D I M T A I P Y T A T L F S T G S S V I L I I G T V K L R Q S I K R I L C S R C

>LC_T2R39

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C L V I P V L R L N F F C R Y F G E E V V K L I E V V I I F I S K S S Y W F T A W L C F F Y C M K I V K F N W R F L L R
L K Q K I S S M V K G L I V F T L M F C F S L S V P I I S I I K L K T N S S Y T P K E C Q S I F G R G K S T I I Y G V I
F T V F T S L L P L A I M V V S S L T I V I F L C R H S R N L T K N V S T N G S S H S D A H T A V A I M L V C L I V L Y
I A C T S T V M A A N L Q A S L G N I D L F V G I S V S S Y L Y S G S A V L L V I G T V K L R Q S F K K L

>LC_T2R38

M G T T E S I V E V T V R L V I I F F G I I G N L F I M G V Y L L K Y R R S K A L Q P T E L I V T I L A F F N V L I P I
N L V L P M I R G Y F L C N Y F G E A S Y K L V D V I V I F V S K A S Y W F L A W L C F F Y C V Q I I K V N W K L F L D
L K R K I S S V V K V L V F F T L L F C I L M S I P V I S I I Q I Q R N S S Q V L G H C K N F Y M K G N N V F I Y G V V
L T A L T S L L P L V I M V V S S L S I V I F L C K H S R N M T R N V S T G G S S H S N A H T A V A I M L I C L I I L F
I V C T F T V I F A N L Q V S S G E F N I L A A I S I T S S L Y S A G S A V I L V I G T V K L R K S F K K L

>LC_T2R40

M V T T D A I P E L A V R L T L I F F G I I G N L L I V R V Y F L E Y R I S K A L Q P T E L V V T I L A S I N V L Q P I
S L F L P I I R L Q F F C R Y I G E G M V K L I D I I L I F F S K M S Y W F T A W L C F F Y Y V Q I V K V N W K V F L R
L K Q R I S L V V K F L I I C T L I V C F I L S V P V I R I I K F T P N D S Y I P K Q C Q N I Y I R G K A T F I Y T V V
L T V L T S L L P L A V M V V S S L N I V I F L C R H S R N M T K N V T T I G S S H S N A Y T T I A I M L I S L I I L Y
V V C T S T V V A V N L Q V S V G D L D I L T A I A I T S S F Y S A G S A V I L S I G T L K I R Q H C I K V C C I K W G
S M L R D Q H I

>LC_T2R65

M A D N D I V H L C V A M I L V V F G C L G N M F I L L V Y F L E Y R R G Q T L Q P Y E V I V T L L S V C C I M I E L C
H V V W F P V Y L L N F C T N I G D I V Y K V T D F I N I F L S K T I I W L T A W L C F V Y C V K I I K V N Q K I F I R
L K K R I S L S I R Y M I A G T V L L C I L L S F P I I L F I K L K I N S T N I C R D Y Y S V N E K K E L S L I Y S S M
L T F L T S F L P L V L M L V S S L S I V I F L C Q H S R N M D K N V A S S T S H S D A H T S V A I M L I C L I A L F
I A C A G T A L S V N I Q V A T G Q F D A L E A I T L T D I I Y S S G S P M I L I I G M V K L R N S F V N L L C P M R R
R

>LC_T2R67

EMAANDIVHLCVAMILVGFGLGNMFILLVFLKEYRRSKTLQPSEVIVTLMSVCCIVTEL
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RLKQRISLVRYMIVGTLLLCILLGFPIILLIELKVNTTNICRDYYSVNEKKELSLIFSS
MLSVLTSFLPLVLMVSSLSIVIFLCRHSRNMKNMASSRTSHSDAHTSVAIMLICLIAL
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KTINREGLS

>LC_T2R66

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LKQRISLAVRYMIVGTLLLCITLLGFPIILFFIKLKNSTNICRDYYSVNEKKELSLMYSSM
LSVLTSFLPLVLMVSSLSIVIFLQHSRIMKNVASGSNSHSDAHTSVAIMLLCLIVLF
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>LC_T2R70

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MKQRLFFAVKCMIVGSLLLCTLVSFPVSLLIKFKINSTKICRDYYSDEEKELFFLFTSI
LSLSTSLPLILMLVSNLGIIVIFLCLHSRAMEKNVSSSGTSHNNAHTSVAIMLLCLIALF
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>LC_T2R71

YIIDSIIYLGAAMIIIGFGYLGNAFIIILVFLLEYRRSHTLQPHLIVSFMSICNVGTELG
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SLSLTSLPLILMLVSSLGIVIFLCLHSRKMDKNITTNSTSRNDAHTSVAIMLLCLITL
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RKISICIFF

>LC_T2R74

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>LC_T2R73

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LSFFTSFLPLILMLVSSLGIVIFLCLHSRNMKNITSSSSSHSDAHKSVAIMLLCLIALF

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>LC_T2R75

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RNQ

>LC_T2R76

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LSFLTSFLPLVLMVSSLGIIIFLCQHTRHMGNVTPSTSHSDAHTSVAIMLLCLIALF
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LLNYMKRL

>LC_T2R68

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LKMRLSLAVKCMIGTLLLCILLSFPVVFLLKLVNSTTICRDYTVDEEKELSFYIYTSL
LSFFTSFSPLVLMVSSLGIVIFLCLHSRNMNTNVTSGTSHSDAHTSVAIMLLCLIALF
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NLSLE

>LC_T2R69

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LKMRLSLVVKFMIIGTLLLCILLSFPVVFLLKLVNSTTICRDYFTVEEKKEWSFVYIYTSL
LSFFTSFSPLVLMVSSLGIVIFLCLHSRNMNTNVTSGTSHSDAHTSVAIMLLCLIALF
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NLLLE

>LC_T2R77

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MLSLMMSFLPLVLMVSSLGIVIFLCLHSRNMKNITSSGTSSDAHTSVAIMLLCLIAL
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>LC_T2R78

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KRISLAVKCMIAGTLLLCILLSFPSTLLIELKINSTNVCKNYYKADAKHELFLIFSSMLS
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>LC_T2R79

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MLSFLTSLPLILMLFSSLGIVTFCLHSRNMDKNVTSSSTSRI DAHTSVAIMLLCLIAL
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>LC_T2R72

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LKLNL SLAVNCMIIGTLLCFLLSFPVVFVFKFKMSCTNICRDYYTDEEKKELSFICTSL
SFFTSFLPLILMIVSSLGIMIFLCLHSRHMMDKNITSSGSSHTDAHTSVTIMLLCLIAFFV
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>LC_T2R57

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LKQKISLAVRFMITWSVLLCAFISIPVSFQIEFTP NITKMCRLYYKSSGQIKFRLIYSSI
LTLTSLPLPLMLVSCLGIVIFLCRHSRNMDKNIPSGTSRNKAHTSVAIMLICLIVLF
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>LC_T2R54

MGASDIMQMSVSMVILWFGFLGNTFIIILVFFLEYRRRRTL RPYELIVTLLALCNIFTELS
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LKQRISLAVNYMITGSVLLCLLSIPVSFQIEFTPNTTKMCRLYYKPTDDKELRLIYASI
LSFLTSLPLVLM LASSIGIVIFLCRHSRNMDKNVTPKSSSHSEAHTSVAIMLLCLIAFY
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>LC_T2R56

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RLKQRISLLVKFMIAWTLLLCFSISIPVSFQIEFTP NITQMCRLYYKSSGKIESRLIYSS
FLSMSTSLPLVLM L FSSLGIVIFLCRHSRNMDKNINSSSSSRNEAHVSVAIMLLCLIAL
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>LC_T2R52

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RLKQKISLVVNFMI LGTLLCLSLPVISRIKFRHNSTNMCRQYYIAMDQKEISLLYTS
ILTLTSLPLVLM L VSSFGTVIFLCQHSRNMDKNITPTNISHSEAHTSVAIMLICLIAL
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YCKLHSNTS

>LC_T2R53

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LKQKISLVVNFMMGTLLCLSLPVISRIKFRPNSTNMCRQYYIAMDQKEISLLYTSI
LTLTSLFPLVLMVSSLGTVIFLCQHSRNMKNITPTNISHSEAHTSVAIMLICLIALF
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>LC_T2R43

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IIGTALLCFSISLPVIYRIKFRNTSTYMCKYYYIPMNQKEISLLYTGMLSLLTYFLPLVL
MLVSSIGIVIFLCRHSRNDKDVTPSDISHSHVHVAVAIMLICLIVLFIVCSTTALSINL
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>LC_T2R44

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RLKLRIPLVNFLIIGTALLCFSISLPVIYRIKFRNTSTNMCKHYYITMNQKEISLLYT
MLSLLTSFLPLLLMLVSSIGIVIFLCRHSRNDKDVIPSNTSHSHAHVTVAIMLICLIVL
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>LC_T2R59

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MKQRISLAVKFMIIGTLLCFSLSFPVAFRVKFKTNSSSVCRQYFPATDDRKNSFLYSSM
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>LC_T2R50

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SLLTSFLPLVPMVSSLGSVIFLCWHSRNTDKNVTPSSTTCSNVHTSIAMMLLCLIAIFI
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Y

>LC_T2R51

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LKQKVS LVKCMITGTMLFCFLISIPVSFRIKFRPNTTDMCKQYYIATDNLEISLLYTTL
LSLLTSFLPMVLMVSSLAIVFFLCWHSRSMKNVTPSSTPHSNAHTSVVVMMLLCLIALF
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>LC_T2R58

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RLKQRLSLAVNFMIAGTALLCISISIPSI FLIKFTTNSTNICRQYYTVKEEQVYSFVFGN

MLSLTSLPLVLMVSSLGIVVFLCQHSRNMCKNVTPTGTSHINAHTSVAIMLICLIVL
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>LC_T2R60

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LKQRISLAVNCMITVTSSVCLLLSFPVTHIKFRPNSTKICRQYHVVDQELSILYATVLS
LLTSLPLILMLVSSLGIVIFLCLCQHSRNMCKNVTSPSTSHSDAHISVAIMLICLIALFIA
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>LC_T2R49

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LKQKISLVVKIMATGMVVMCFVISLNVNFIINFRPNTTEVCRKYHMITNNTMNTIYSTV
ISFFTSMLPLILMLLSCFSIVIFLCLCQHSRNMCKNINSSSSSRNEAHTAVAIMLFSLTALF
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KLHSNTL

>LC_T2R47

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LKQKISLVVKFMIFLTLLISISFSLPVYTRIRFNYNSTNMCTHYFFIEGKEQVSIIFAVI
LSFFTSFLPLAIMLVSSLGIVVFLCLHRSRNMCKNVTSPSTSRGEAHTSVAIMLLCLIALY
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KVQT

>LC_T2R48

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KISLVVKFMIFLTLLLLISFSLPVHTRIRFNYNSTNMCKHYFIIIEGKEQVSMVAAILSF
FTSFLLLAIMLVSSLCIVVFLCLHRSRNMCKNITPSSTSRGEAHTSVAIMLLCRIALYITC
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>LC_T2R46

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LKQKTSVFMKFMIFLTLLISSFSLPVHTRIRFDYNSTNMCKQYYILKGKEEVSMFTGI
LSFFTCFLPLTIMLVSSLGIVVFLCLHRSRNMCKNITPSSTSRVEAHTSVTIMLFCIALF
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KIQT

>LC_T2R45

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KLKQKISLVVKFMIFLTLLICAFISIPVHSVIFNFNATNVCREYFILQDETKNSPIYSF
LISTLTSFLPLIIMLISLGIIVFLFYHLRNMCKNAIPNSTRNDAHTSVAIMLICLIAL

FVVCAGTALSVNIQIALGQLDIAPAITITQLLYSAGSPVILIVGMVKLRKRFMNLCCKG

>LC_T2R63

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RVKQRISLAVKVMII GTIGLCC LISVPIYFMIHLKGNTTKGCRDFYVKVSEKELSVLYGG
TLTFFFTSFLPLLLMLVSSVSIVIFLCQHRSRNM DKNMASSSSSHNEAHTSVAIMLICLI AL
FVVCNGTFLYINVQYAAGHFELLVLSALANTIYSSVSPAILIVGMVKLRHTFAKFFFRKG
RRYSDQ

>LC_T2R64

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KQRISLAVKCMIIIVTAVLCSLLAMPVLFMVHLKGNSSNNCRELYIQDDEKELSFLETSML
SLFTSLLPLVFMVSSLGIVIFLCRHSKNM DKNVTPSSTSRNEAHTSVAIMLLCLIALFI
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>LC_T2R41

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LKQKISFAVRFMIIGTLLLCFSVSFPIMYGIRFRENSTQMCKNYIATDKKVNSLAYFGM
LSLMTSFLLLVLMVSSLGIIIFLCRHSRNISKNVTTSSSSSSNAHSAVAIMLICLI ALY
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K

>LC_T2R42

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RLKQKISFAVRFMIIGTLLLCFSVSFP IYVGIRFRENSTEMCKNYIATDEKVNSLAYFG
MLSLMTSFLPLVLMVSSLGIVIFLCRHSRNMSKNVTTSSSSSSDAHLAVAIMLICLI AL
YIACAGTALCVNLQV ASGQFNVLIAIAYTNVIYTTVSSVILISGTVKLR T SF CRL

>LC_T2R80

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KQKLLVVKYMI VV TLLLCILLAFPVALLIKLNINSTDICWNYYMIEEERELSFYTG T LS
ILTSFLPLVLMVSSLGIVIFLCIHSRNM DKNITPGGSTHIKAHTNVAIILLCLIALFVA
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>LC_T2R02

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RMRQCVSGLVPHLLAGSVIGTFVSLPYFVYVPVVSNNGLANSTICLMDFRSPAPFYS
LYLTLNCLLPLVLMVASSSVIIMFLHCHVRRMEENTSGFSSPRSDAYLRITKMLLSLVCL
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>LC_T2R03

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RFQQWINGAVRHLLAWSAVGSFTVPVCY YVFS LGMNHTDILN NCTNLNIAEHKQIVDDSY
YCLYLVLCCLLPLVIMTTSSSFILLFLRRHAMRMQRSAADGFSSPSSEAHVRVSKMVLSL
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>LC_T2R04

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QIQQWIVGAVPHLLVWSAVGNFV VCTPKLVLI FLRNETKTSCNSSFGHFRESKWKLDYMN
TFYLALCCLSPLVIMITSSSFII FLRRHVAKIRRN TTNGFSSPSSEAYVRVSKMVLSLM
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NLLKIGI

>LC_T2R01

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KVQDAILKHAPT VLA AIFFFSFTFN IPIILSKHTANETNTQQCGNLVVRDKIIFLSIYL
PITAILPAVVMVKSSISILVHLM IHLRHLKANTNGFHTPKLSSQMRVVRMTLVLTIVYLI
ALITYVLCMTFAMINNNRLFEIAGTAASIYTMASSLILSYGKQSHWNE LAKLWREFVALF
P

>Lc_T2R61

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VKQRSTLALKGMIILIAMLCFSLTFPIITHIKFSSNSTNICRQYYIVDQELSFLFASVLS
XLTSLPLVIMLVSSLGIVIFLCRHSR NIDRNVT PGGTSHSDAHTSVAIMLLCLIALFIA
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SFRQCGC

>Lc_T2R62

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VKQRSTLAVKGMITL TALLCFSLTFPIITHIKFSTNICKQYYIVDQELLFLFVSM LSLLT
SLLPLVIMLVSR LGIVIFLCQHSR NIDKNVTPGGTSHSDAHTSVAIMLLCLIP LFACAG
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ECGC

>Lc_T2R29

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GLKQNM SLLVIVF ILFTFLVSFSVALPGIYMVKLKTNSTSISELCKDX YVIGKFGYIYGA
FLNILTSFLPLVIMLISSIGIVIFLCTHSRKMKN AVARSSSNEDAHTAVAVMI IYLILL
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>Lc_T2R55

MGASDIMQMSVSMVMLWFGFLGNTFIIILVFFLEYRRSQTLWPYELIVTLLSLCSILMELS
TVIWLIVYFLDLCTYVGEMLYYINDMLIIFFPKMAIWFTT~~X~~LCFIYCLKIIKVDWRFFIR
LKQRISLAVNCMITGSVLLCLLLSIPVSFQIEFTPNTTKMCRLYYKPTDDKELRLIYASI
ISLLMLFLPLVLMMLASRIGIVIFLC~~X~~HSRIMDKNVTPKSSSHSEAHTSVAIMLLCLIAFY
IACAGTALSANLKTVSGEFDLAVAIILMQLIYSAGSPVILIIIGMVKLRNSFGKLCFSKR*

Part 2 **Latimeria V1R protein sequences in fasta format.**

>Lc-V1R01

MDLCITIKGVSFLLQTGLGVLANLIVLLAYTHIAYS DHKLVAVDMILFHLAFVNMMSLLT
RGIPLTMTIFGLRHILNDAGCVLVVFIYRVV RALSVCITCLLSWFQAITIVPATSKLSRF
KIKVPNYIIPSFVVLWLNIFIYSGVPY YTTAPTKNSSVPKYTMSTGFCYVIFPNQMSFS
LYGVVITSRD LIFVILMILASGYILLILYRHRQQVKALRNPEYSTKSTAESKAAKIVLTL
VLFYIAVFGIENIIGLYVTSLSQVHEYIIDLRV FVSSSYASFSPLIILNFNKKIKSRLRC
AFLE

>Lc-V1R01a

RMDLCTMIKGVSFLLLETGLGTLGNFLILLAYAYIVFREHKLSPVDMIFCHLAFANMMVLL
TRGV PQTMTVFGLCNLLNDVECKIVIYTYRIVRALSVCITCLLSMFQAITVAPVTSTWAS
IKMKAPNNIIPSFLALWLNMAVCI AAPFSSKAPRNGTVPEYTLNLGFCHVDFKDQVSYV
INGIAVTMRDCIFVILMVVASCYILL LLLHRHSQKVKSIRSSDRNQKTTAETRAAKIVIML
VLLYVVFVGIDNI IWIAMLTIAKVSPVIADMRVFFSSCYAALSPFLI ISSNKKIKAVLRC
NSQQREPRDQATDISYVT

>Lc-V1R07

MDLRAIMKATSFLVLTIVIGIPGNFTVLAVFSHIAFTEYKLLPTDIIVTNLALVNFILVIS
RGFPQILTA FQLRNLFDTFGCKLIIFAFRIARALSISMTFLLSASQSVTISPATSRLSFL
KQRLPKYLWPLIVFFWLLSGATSVTSILYSTADPNSTASQFTFNLEYCYVAFPGKDAYEG
NGTMYVSRDLTFVILMALAS IYILFVLYRHSQQVKSIRNPNRNQG TSAESRAAKTVVTLV
ALYVIFFGVDNLIWIY SISISRVSPMISDIRVFFSSLYATVSPIVII CSNKKIINKLYCT
RRNQVSQAVEIIFTTV

>Lc-V1R11

SMDAYSFLKGVFLFLLLAVIGIPCNF AILGAFGKMIYLGKNLFPVEGII CLLALVNTMMIL
TRGVPHILFVFEIRRLYSQHCAV IYMARVSRAMAICLTCLLSCSQFLSITPPPSKWIS
LKAILSKTKNLALIVVCLLFLNLGLCVC SVLYAMPETNSTNLNFTYNLGYCIVKFPNRHA
YLGFGLSLLARDLTFVTSMVIASIAIVMTLLRHRQVSSIRRSSQSHEATVETQAAKSVV
TLVTLYVLFVFGIENTIFLYTMTGHQVNSVLS DVRFFFSTCYASVFP IVAIVASSKIREQL
KCFTQSKE

>Lc-V1R12

MNLYNLMKGLIFLLMGIIAIFGNLIIMVLF IHIVYVEGKLMPTEFILLNLAWTNMQMVAS
RGIPQSLYVFG LKKLFNDSGCRAI IYSARISRAMVICLTCHLSCFQCVTIATSNPKWILV
KTKMQKYL VHTIFSLWVFNMFICISRILFTFSPFNSTSPENTFNLGYCVVFPDPKVSFEV
NGYILFTRDIVFVALMALASACILFLLHRH KRQM QSRRSGRNQESNAENQAAKIVVTLV
SLYVFFFGIETTISLYQTTIPASVVSIVSDVRYFFSICYCTIFPFILCRFNQKIKNKLKS
SVGETEKKQIKAFFCN

>Lc-V1R13

MELYNLMKGIIF FIVAIIGTVGNLVVLALFLHIA YQHKLTA AERLLLNLAWSNSIMLLTR
GVP HSLFVFGRLRDLFSDIGCKIVVYLSRVSRAMSI CLTCFLSCLQCIT IATSTLKWVYI
KVKMQKYVIPITV FVCLLNMIICIGSVIFSISGTNSNYTQFAFN LGYCIVNFPDKLTLHF
NGFAPFARDIVFVAMALASAYILLILYRHGKKVKGIRNSEHSHESTAEGQATKTVVTLV

TLYIIFFGIDNTIFVYQIAVSKEVHTIVSDIRFFLSICYGLVFPFIIIGFNSKIRTKLKP
SSSEQQTEVQEVSSI

>Lc-V1R14

MDLYNLVKGIIFILTAIVGVSGNLVILVSFYHIALQERKFVTAQVILLNLAWANMIMALT
RGVPHSLFIFGLRFLFDDIGCKIVVFASRVSRAMSICLTCLLSCFQCITITKSTLKWLSL
KGRMQKYVILIIIGLCVMNMLVCIAAVLFVSSTNTTNTLEYTFNLGYCLVTFPDQLSFQV
NGFAIFARDIIFVVLMLASAYILLVLFHRGRQVKGIRSSDRNNVTTAEGQATKTVVTLV
TLYVLFVFGIDNTIWFYQITVSKEVHSIVSDIRFFFVSVCIASICPIVIMFNPQIRNKLKA
SSSEQETQVQEIISSTQ

>Lc-V1R15

RVIFILITLIGTAGNLVILVSLTHIAYQEHKLLAIEKIVFNLSGANLVISLVRGIPHNLF
LFGFRNLYSDVGCKITGYVHITFRAVAIVLTCLLSCFQCATIARGRSQWTFVVKLNQKHL
EWIIFGLYLFCMISTIDVIPFSISGQNVTNLKFVAVSLGYCFVVPDNIMFQLVGYGIFAR
DFLFLVFLMTLASSYILLILYKHKRQVQGIRSTERNHETTAEGQAAKTVVTLVSVFYVSVFG
LDNTIWFYIEIVSKIMFPVAFDIRNLFSMCYASFFPIVITFNKKIRHQLKCPRGEQKQI
ACLSS

>Lc-V1R16

VMDLYEILRRVIFILITLIGTAGNLVILVSLTHIAYQEHKLLAIEKIVFNLSGANLVISL
VRGIPHNLFVLFGRNLYSDVGCKITGYVHITFRAVAIVLTCLLSCFQCATIARGGPQWTF
IKLSLQKHLEWIIIFGLYLFCMITTIDVIPLSISGQNVTNFKFAVSLGYCFVVPDNIMFQ
LVGYVIFTRDFLFMILMTLASSYILLVLYRHGKQVQGIRSTERNHEPTAEGQAAKTVVTL
VSFYVSVFGLDTTIWFYIEIVSKRMFPVAFDIRNLFSMCYASFFPIVITFNKKIRHQLK
PRGEQK

>Lc-V1R17

KMDPEIVNGAVHFVISIIGIAGNIVILASFHITYHKRKIMAVEKILVNLSGANLIILVS
RGLPLSLYAFGLRNLFNDFCCQFIGYVHITFRALSVALTCLLSCFQSIMLAKNSPKTAKL
KLKLQTHIVPILSLLCIFSMLCSVDVIVFSVSSYNVTVPQYTAAMGYCLVFPNIVTFHL
VGYGIFTRDFLFVFLMALASSYILLVLYRHGKQVQGIRSMERNHESTAEGQAAKTVVTLV
SFYVTLFGIDNTIWFYQIISKGLISKVFDIRTLISILYAVVFPFVIIAFNKKIRSKLKCF
TSEQKSEISIIIEEMKHIQ

>Lc-V1R18

SMDPETVRGAGYFVITIIIGIIGNVVILTFSHIAAYQERKIMAVEKILVNLSGANLIILVT
RGLPLSLYAFGLRNLFNDLCKIISFVHISFRALSVALTCLLSCFQSIMLAKNSPKTAKL
KVKLQAHIVPILSLLFIFCILCSVDMIVFCISSYNVTVLEYTDTMGYCLEVYPNAVVMFHL
VGYGIFARDFLFVFLMALASSYILLVLYRHGKQVQGIRSAEQNRESTAEGQAAKMVVTLV
TFYATLFGIDNIVWFYQTISEHMISQEFDRTRLISLLYA AVFPLVIVFNKKIQNKIKYF
VSLQKSELSLTE

>Lc-V1R19

MVSVTGRGAVYFVITIIIGIIGNVVTLTSFSHIAAYQERKIMAVEKILVNLSGANLILLMTE
GLPMSMYSFGLRHCFNDACHEFIYVVKMTFRGLSVVLTCLLSCFQSIMLAPNGPKTAKLK
MKLQVHIVPILSLLFIFCILFNVDMSVFCISSYNITVLEYTDTTEYCFVAVMFDLMGYGVF
ARDSLFLVFLMALASFYILLVLYRHGKQVQGIRSAEQNRKSTAEGQAAKMVVTLVSVFYVTL
FGIDNIVWFYKTFAYQLISQEFDIRMLTSLLYVTLFPFVIVFNKKIQNKIKYFVSLQKS
ELSLTE

>Lc-V1R08

MEVRLIFKAAGSIFLEALGIPGNALILATFVFIGISNRKLLPADILLMKLAFVNLIVMLT
FNIPTTVSAFQVRKLFNDDGCKTVIFLFRVGRAMSICITSLSSYQCIVLAPSFNACIIL
KQKCPQSLFHITAFWLCLNTIIYAVCVPSMAEQSFAKSNYSIPMAYCVVSFSPSYTFFAVL
GMVFIVRDLFFIAIMVSSSSCIVFIFYLKHMKQVKGIRSSAKNHGRTAETQAAKAVVMLVI
LYVFLFGLDNI IWAYSLSLNSVLVPEITDVRHFLASCFPSISPIIIITTNKQLQNKLRFIS
QRKKLQNAETVVSINVHTI

>Lc-V1R09

MDIQVIFKVISFLLLVVIGIPGNITVMAAFVHLRLSDSKLMPPDIILTKLAFVNLLVVFT
RGVQPQVLTALGIKKLFNNNGCRAIIFLFRVSRALSICMTALLSCYQSIVLAPSSKRWRIL
KQKMPQKLLLVIIIFWCVNMLIYSWTLIFSYPNLTTEYTLNLEFCFVVFPTFAFYIGN
GTLYLFRDFLFLVGLMVLASGYIVFIFYLQHRKQVKGIRSSDRGQENTAETRAAKAVVMLVA
LYVILFGLDNI IWIYTLQVSKVATVVS DARVFFASCYSALSPILIIATNKKIQMKLKS LG
QNQHHQTPETS SVSHVQV

>Lc-V1R10

MNIRVTLKAIGFFLMVVIGIPGNFTILAVFALIKLSNGKLLSTDIILTKLAFVNLLIVLV
KGIPQAFTAIGIRKLFNDNGCRAVLLLYRVS RALSICMTALLSCYQSII IAPSSNRWRAL
KQKMPQKLVFIMIILWCVNIFIYSWTLFSFAQLNSTTTEYTLNLEFCFVVFPSFYIG
NGTLYLFRDFLFLVGLMVLASGYIVFIFYLQHRKQVKGIRSSDRGQETRAETRAAKAVVMLV
ALYVILFGLDNI IWIYTLQLSKVAPEISDARVFFASCYSAISPILIIATNKKIQMKLKYL
GQKHHQTPETTISHVQMEM

>Lc-V1R05

MVLSASISEWITYMVFTFIGIVGNSILIHGILTCPTGRLRPSFLLLFSLAAVHMARNVVV
NLLSIIYSAGGVSVFGSAGCKVFKFASALTGTLGIWFTLYTVVFYSVKLEQAVHPLNCAV
NTNWRGYHLAIGFVLWVAGLVVCCPIAVFAEKAKVQVVGNVTHPYRSSVYVGCRCNYPAP
EVALIYGTALTAIDLVLVLAIFSI RIMLLLRKRTGVQFGDIWIGERTETDVFRAAKC
ALLLVLLVTALWVSHFTILQCLRRLDEYYFIPTVLAVLSSGYATLSPYLLMI INYRIRAN
L

>Lc-V1R02

TMGTWSIIKGTAFHILTVIGMPGNLIIVYAFSYAAYS DHKLMPADII VLNALVNLMMVVL
VRCIPEMLAAYGINELFSDSGCKIVICIRYTRALS IWLTFLLSGFQCISIIAPITTKWAA
FKLQAPGHLFGVLAFLWVFNVGFSIPALLYGISSGNSTGNGFSINLEYCFVKFSPQYVK
ITVGNLQISRDI IPIFLMIFASVYILLILYHHSQQVKHLQSSNRKRGSSAEIRA AKAVIT
LVLLYVIFFGIDNVLWVYTLTIKAMTTSVISDLRVFFSSLYAAVSPIVII VSNKKVQKRL
KCEREQQGSLAPETVTSTVRM

>Lc-V1R04

MSQGEHPVQLFFYTMLVALGIVGNSLVIWIVLDTARAANTIPSSDFILLNIAVVNLLISL
TRNTLLALDIDYTFMSMDGACRILMCIWVWFRCVGVVWTLCLSFHFVMVIRSSHSALGK
INERRNVIVIVAVLWALNLLYSSTALALTSNTSTNISSLVVISSTIRPLLGCWVIFSTDT
AALFYGILSFIVHEI IPIFLMIVITNCGTLFLLYKHRQVHRADIAITRVESEWKA AKTIL
ALILLFVFCWGTHIVSVNYYNFYSSSSTRYMLIIARFSASGFLGFYPLVVTFGH SKLKRK
FHSVLFWRKQNEVS

>Lc-V1R03

MRF SADNVFYGILVLLGIVGNLLVVVTITVAGYEVGTILASDFILANLAI VNF LISTIRN
VPLFISDLGLKIYLSRDYCKIFMFLWVWLR SVSIWATFCISFFHFLVIRRHHSVLRK GK
ELRNIIITTSVIWIGNFFYAFPTCFYSTRAYGNETDTIQLLSATTRPFLGCIWKFP SLYS

GVAYATASLVIHEVFPIFLMVVINLGTLYILYRHSRAVGVETLVTRVASERRAAKVILIL
VTLFVICWVTNVLNVNHNTEKSIRVFMVLANFGASLFIGFSPVVLVGVHSLRKKLMN
FTLYLNGIKQKRGKRLTTGK

>Lc-V1R06

MELTRIIIFLVIRILVCLFGMTGNVAILSVLIKRAFTFRLKTFEMLLVGLTASNFTQELLV
DVPEIMKELSGVTIHRWFCKTLKFTFTFGRANSIIFTILICIFRYQKLRHAVSRVNLVPP
LDNVKIIHVISASVLAFTFLFSVPVLLHETNVEMTLKNQTSCPALFFDCPKINCEVSYMA
YKLIYLACIDILPILIIILVITTHLLRILYKNYKLVSVTLDFGSPNKSIIKDSKVRFWKST
KAVLAALLLFQISWTMQLIIIEFAVSSKKFDYWSETDFLIIVALYTSLSPTYVFGIGNNILT

Part 3 Tree file in Newick format for T2R and V1R sequences shown in Fig. 1.

(Frog_T2R24--Intact_1/1-288:0.0000002748,Frog_T2R25--Intact_1/1-288:0.0061379003,(Frog_T2R46--Intact_1/1-294:0.3733089728,((Frog_T2R27--Intact_1/1-290:0.2221290239,Frog_T2R28--Intact_1/1-279:0.4525430920)0.9342195967:0.0616636549,(((Frog_T2R1--Intact_1/1-289:0.3918210492,Frog_T2R29--Intact_1/10-301:0.3138129339)0.9998500075:0.6509752150,((Frog_T2R26--Intact_1/1-278:0.3711378041,(Frog_T2R6--Intact_1/1-273:0.0094976265,(Frog_T2R47--Intact_1/1-273:0.0000002215,Frog_T2R7--Intact_1/1-273:0.0195082828)0.9763439383:0.0658202988)0.9998500075:0.5006437566)0.9998500075:0.3801097940,(Frog_T2R31--Intact_1/1-291:0.8850268367,(Frog_T2R48--Intact_1/1-282:0.7657574314,(Frog_T2R4--Intact_1/1-277:0.6385856814,Frog_T2R5--Intact_1/1-279:0.4458799738)0.9754412424:0.1318760028)0.9998500075:0.2293353457)0.9865069539:0.1239015508)0.9378150222:0.0721907075)0.9879578039:0.0652087928,((Mouse_T2R138--Intact_1/1-294:0.9031576543,(Mouse_T2R137--Intact_1/1-294:0.7042337608,((Mouse_T2R130--Intact_1/1-291:0.4385864984,(Mouse_T2R106--Intact_1/1-292:0.2818384502,(Mouse_T2R107--Intact_1/1-291:0.2849591325,Mouse_T2R105--Intact_1/1-286:0.2660859742)0.9723242732:0.0646695120)0.9998500075:0.3361107536)0.9979043880:0.0868222191,(Mouse_T2R131--Intact_1/1-284:0.7859857277,(Mouse_T2R122--Intact_1/1-288:0.7037181079,(((Mouse_T2R110--Intact_1/6-304:0.1082852785,Mouse_T2R123--Intact_1/6-304:0.1211486462)0.9998500075:0.3223047861,(((Mouse_T2R140--Intact_1/1-289:0.2436963423,Mouse_T2R33--Intact_1/5-293:0.3706334350)0.9998500075:0.0968005162,(Mouse_T2R129--Intact_1/1-290:0.4588650720,(Mouse_T2R109--Intact_1/8-296:0.1985785813,Mouse_T2R117--Intact_1/8-300:0.1846564081)0.9998500075:0.2022169044)0.9998500075:0.0921111990)0.9998500075:0.0587036556,(Mouse_T2R116--Intact_1/1-282:0.3428180861,Mouse_T2R115--Intact_1/1-288:0.4288254583)0.4105026718:0.0346008006)0.9975443582:0.0708063645)0.9998500075:0.1320818669,((Mouse_T2R102--Intact_1/1-288:0.3628453575,Mouse_T2R121--Intact_1/1-284:0.2644732676)0.9998500075:0.2189963426,(Mouse_T2R120--Intact_1/1-277:0.3287041177,Mouse_T2R136--Intact_1/1-282:0.5241267547)0.9998500075:0.2446176559)0.9414543548:0.0458026860)0.9998500075:0.1757008610)0.9490440789:0.0649372416)0.9035413101:0.0311880086)0.9632949517:0.0745057136)0.9998500075:0.2403221472)0.8946574099:0.0910537499,((Mouse_T2R144--Intact_1/1-296:0.3758235385,Mouse_T2R139--Intact_1/1-296:0.4073920274)0.9998500075:0.4680788472,((Mouse_T2R118--Intact_1/1-285:0.5965238209,(Mouse_T2R19--Intact_1/1-

285:0.2106430974,Mouse_T2R143--Intact_1/1-
279:0.3094531221)0.9998500075:0.2891300067)0.9998500075:0.2452615405,(Mouse_T2R126--
Intact_1/1-289:0.4058522818,Mouse_T2R135--Intact_1/1-
285:0.6821576804)0.9975668290:0.1547817789)0.9998500075:0.3479581461)0.7979166001:0.073929
7367)0.9998500075:0.0819470797)0.9289610049:0.0581981313,((Frog_T2R30--Intact_1/1-
300:0.9062570021,(Frog_T2R8--Intact_1/1-269:0.9007409140,(Frog_T2R23--Intact_1/1-
271:0.7381519644,Frog_T2R3--Intact_1/1-
275:0.7272333570)0.9987759778:0.2317261906)0.6821274937:0.0912610841)0.9998500075:0.137210
9008,((((Frog_T2R40--Intact_1/1-289:0.1458985270,(Frog_T2R38--Intact_1/1-288:0.1521294026,
(Frog_T2R22--Intact_1/1-285:0.0345396566,Frog_T2R33--Intact_1/1-
290:0.0428990478)0.9998500075:0.1581041192)0.9961836450:0.0510787711)0.9998500075:0.2797433
222,(Frog_T2R42--Intact_1/1-296:0.3854962307,((Frog_T2R49--Intact_1/1-285:0.0323170027,
(Frog_T2R12--Intact_1/1-287:0.0176918276,Frog_T2R2--Intact_1/1-
296:0.0352917461)0.9998500075:0.0468335502)0.9998500075:0.2154881124,(Frog_T2R36--Intact_1/1-
282:0.1217904578,(Frog_T2R35--Intact_1/1-287:0.1014041177,(Frog_T2R34--Intact_1/1-
278:0.1185097153,Frog_T2R9--Intact_1/1-
287:0.0713945826)0.9998500075:0.0719058910)0.9998500075:0.0414708583)0.9487207693:0.042240
2473)0.9998500075:0.2389850684)0.4102013257:0.0254100847)0.9982245487:0.0767021319,
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Intact_1/1-290:0.1469973676,(Frog_T2R37--Intact_1/1-292:0.1459488761,Frog_T2R41--Intact_1/1-
292:0.1553934289)0.9671853200:0.0331965325)0.9998500075:0.2753950401)0.9503958005:0.070057
2092)0.9998500075:0.7052549070,((Frog_T2R43--Intact_1/1-291:0.0578466558,(Frog_T2R44--
Intact_1/1-290:0.0925474181,Frog_T2R45--Intact_1/1-
291:0.1325607965)0.9998500075:0.0700771907)0.9998500075:0.6420054887,((Frog_T2R20--
Intact_1/1-285:0.3373772633,(Frog_T2R17--Intact_1/1-264:0.2007812849,(Frog_T2R13--Intact_1/1-
283:0.1509911882,Frog_T2R15--Intact_1/1-
285:0.1890269594)0.9310123562:0.0516363097)0.9998500075:0.2528057998)0.9998500075:0.492585
9134,((Frog_T2R14--Intact_1/1-298:0.2499519682,(Frog_T2R18--Intact_1/21-
316:0.0458904780,Frog_T2R19--Intact_1/1-
279:0.0331506896)0.9998500075:0.1741341250)0.9998500075:0.1720912984,(Frog_T2R21--Intact_1/1-
294:0.6333956294,Frog_T2R16--Intact_1/1-
288:0.3966415364)0.9998500075:0.2132089124)0.9998500075:0.4025672881)0.9998500075:0.219710
9599)0.7701470506:0.0998139940)0.9047440837:0.0727900033,(((Fugu_T2R2--Intact_1/1-
266:0.5917590332,(Zebrafish_T2R1--Intact_1/1-277:0.0523906386,Zebrafish_T2R2--Intact_1/11-
288:0.1266083844)0.9998500075:0.3121431888)0.9998500075:0.9566320910,((Zebrafish_T2R3--
Intact_1/1-278:0.6843384116,(Zebrafish_T2R4--Intact_1/1-275:0.8506332138,((Fugu_T2R4--Intact_1/1-

265:0.4022612689,Pufferfish_T2R6--Intact_1/1-259:0.2544995359)0.9998500075:0.6254354620,
((Stickleback_T2R1--Intact_1/1-275:0.0525791292,Stickleback_T2R2--Intact_1/1-
271:0.0584899952)0.9998500075:0.5127798477,(Fugu_T2R3--Intact_1/1-265:0.2734646871,
(Pufferfish_T2R3--Intact_1/1-263:0.2071478966,(Pufferfish_T2R4--Intact_1/3-267:0.0793625976,
(Pufferfish_T2R2--Intact_1/3-266:0.0204205591,Pufferfish_T2R5--Intact_1/3-
266:0.0257494947)0.9998500075:0.1229941207)0.9998500075:0.0772810623)0.9998500075:0.182245
6845)0.9998500075:0.1596955346)0.9998500075:0.2215333582)0.8859117687:0.0789688473)0.91883
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(Stickleback_T2R3--Intact_1/1-303:0.0800431192,(Fugu_T2R1--Intact_1/1-
302:0.0909182031,Pufferfish_T2R1--Intact_1/1-
302:0.1877375435)0.9998500075:0.1570610348)0.9998500075:0.4874894767)0.9998500075:0.587150
1788,(((Dr_ORA5/1-273:0.3649610913,((Tn_ORA5/1-281:0.0470320901,Tr_ORA5/1-
276:0.0572573062)0.9998500075:0.0497635472,(Ga_ORA5/1-278:0.1135163396,OI_ORA5/1-
280:0.2697876206)0.9195871606:0.0346282751)0.9987579191:0.1432637128)0.9998500075:0.569521
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648,(LC_T2R41_JH130077-122561-123463/1-
298:0.0455205165,LC_T2R42_ENSLACG00000006135/4-
294:0.0159460994)0.9998500075:0.1948524874,((LC_T2R43_JH132281-3349-42091/1-
284:0.0427961296,LC_T2R44_ENSLACG00000005213/2-
297:0.0161055169)0.9998500075:0.2264536339,(((LC_T2R45_ENSLACG00000002953/2-
297:0.1924104697,(LC_T2R46_JH132617-3356-4267/1-301:0.1011351041,(LC_T2R47_JH134280-
2000-3700/1-301:0.0192549555,LC_T2R48_JH131192-13968-14870/1-
298:0.0877459416)0.9998500075:0.0382600588)0.9998500075:0.2228467368)0.9998500075:0.060716
6728,(LC_T2R49_g03496/1-298:0.3550123034,(LC_T2R50_JH135454-2600-3600/1-
298:0.1593226990,LC_T2R51_JH130976-56756-57640/1-
293:0.0513476091)0.9998500075:0.0873911273)0.9990684779:0.0569047827)0.9998500075:0.0988790
491,((LC_T2R52_ENSLACG00000002071/2-300:0.0238464334,LC_T2R53_ENSLACG00000002046/1-
294:0.0014817312)0.9998500075:0.1178236468,((LC_T2R54_JH130641-11547-12443/1-
296:0.0111576799,Lc_T2R55_JH130827-7169-8065/1-294:0.0650336000)0.9998500075:0.0639817088,
(LC_T2R56_ENSLACG00000001061/14-305:0.2001696710,LC_T2R57-AFYH01284138-450-1400/1-
296:0.1060967258)0.9998500075:0.0356116258)0.9998500075:0.1244549694)0.8636328556:0.0243862
984)0.9998500075:0.0817106275,(LC_T2R58_g06318/2-295:0.1982464456,
((LC_T2R63_ENSLACG00000002255/3-302:0.2805577997,LC_T2R64_ENSLACG00000003395/1-
296:0.1325898332)0.9998500075:0.1856375380,((LC_T2R60_JH128916-233505-234389/1-
294:0.1774338232,(LC_T2R61_JH128916-195708-196628/1-300:0.0557028439,Lc_T2R62_JH129837-
106889-107800/1-297:0.0470603442)0.9998500075:0.1073746441)0.9998500075:0.0635388340,
(LC_T2R59_JH128916-126493-127395/1-296:0.1988111591,(((LC_T2R68_JH129750-41217-42131/1-
300:0.0147140432,LC_T2R69_ENSLACG00000003809/1-
300:0.0351695026)0.9998500075:0.0683722006,((LC_T2R70_JH129303-210000-211000/1-

298:0.1007410726,LC_T2R71_ENSLACG00000003104/2-
301:0.1087302132)0.9998500075:0.0729803060,((LC_T2R72_JH129303-64562-65465/1-
297:0.1046414724,(LC_T2R73_JH129303-155997-156905/4-301:0.0563682333,LC_T2R74_g01418/1-
295:0.0574331928)0.9944099307:0.0391532156)0.9921407445:0.0453540276,(LC_T2R75_JH129303-
138585-139493/2-300:0.0655458514,LC_T2R76_ENSLACG00000007023/1308/1-
300:0.0583549065)0.9998500075:0.0390685899)0.8636269225:0.0223374627)0.9998500075:0.034318
1311)0.9998500075:0.0500044719,((LC_T2R65_JH131022_JH1310226900-7950/1-298:0.0866603704,
(LC_T2R66_JH128085-553378-554280/1-298:0.0880937982,LC_T2R67_ENSLACG00000002847/21-
321:0.0982410740)0.9579907740:0.0145478743)0.9998500075:0.1030665200,((LC_T2R77_g03692/2-
295:0.0482303432,LC_T2R78_g07306/2-292:0.0601651143)0.9998500075:0.1117312779,
(LC_T2R79_ENSLACG00000003761/4-300:0.1090817943,LC_T2R80_JH128916-42068-43018/1-
298:0.2561175850)0.9998500075:0.0350922020)0.9998500075:0.0348920757)0.9929746850:0.0229672
452)0.9998500075:0.0378201760)0.9921686801:0.0224180492)0.2139784204:0.0107735547)0.999850
0075:0.0412249322)0.9985106044:0.0372263032)0.9998500075:0.0258295111)0.9998500075:0.069585
9488)0.9998500075:0.1886715326)0.9998500075:0.0357617226)0.9998500075:0.0398151067)0.43350
41674:0.0271590727)0.9998500075:0.0401050970)0.9998500075:0.0847427775)0.9998500075:0.1098
686526)0.9998500075:0.4153742365)0.9039926935:0.0985613767)0.9998500075:0.2380142825)0.998
7257097:0.0827871811)0.9998500075:0.1527602807)0.9998500075:0.9337756594)0.6950113924:0.052
6770126)0.9998500075:0.3822693929);

Part 4 Tree file in Newick format for T2R and V1R sequences shown in Fig. 2.

(Frog_T2R24--Intact_1/1-264:0.0000002264,Frog_T2R25--Intact_1/1-264:0.0033918876,(Frog_T2R46--Intact_1/1-265:0.3244729492,((Frog_T2R27--Intact_1/1-266:0.2599625400,Frog_T2R28--Intact_1/1-257:0.4376057685)0.8870291968:0.0625733451,(((Mouse_T2R138--Intact_1/1-287:0.8612148069,(((Mouse_T2R115--Intact_1/1-281:0.4150458937,((Mouse_T2R110--Intact_1/6-297:0.0987915022,Mouse_T2R123--Intact_1/6-297:0.1048446294)0.9998500075:0.2998708539,(Mouse_T2R116--Intact_1/1-283:0.3544824036,((Mouse_T2R140--Intact_1/1-284:0.2265421711,Mouse_T2R33--Intact_1/1-285:0.3567211527)0.9998500075:0.1044054501,(Mouse_T2R129--Intact_1/1-279:0.4230826603,(Mouse_T2R109--Intact_1/1-284:0.1622910546,Mouse_T2R117--Intact_1/1-285:0.1910237582)0.9998500075:0.2045263092)0.9998500075:0.1007780975)0.9804359879:0.0524134258)0.9296416960:0.0455409258)0.9473144087:0.0604756598)0.9998500075:0.0996017303,((Mouse_T2R102--Intact_1/1-282:0.3658903576,Mouse_T2R121--Intact_1/1-277:0.2531435025)0.9998500075:0.1945241555,(Mouse_T2R120--Intact_1/1-270:0.3122862773,Mouse_T2R136--Intact_1/1-282:0.5108217758)0.9998500075:0.2574453838)0.9117966713:0.0609282666)0.9998500075:0.1612137430,(Mouse_T2R131--Intact_1/1-276:0.7555573328,((Mouse_T2R130--Intact_1/1-282:0.4268849725,(Mouse_T2R106--Intact_1/1-285:0.2887544561,(Mouse_T2R107--Intact_1/1-283:0.2835983267,Mouse_T2R105--Intact_1/1-278:0.2522530118)0.9916686581:0.0692464803)0.9998500075:0.3343427037)0.9369605795:0.0521811097,(Mouse_T2R137--Intact_1/1-283:0.5823961833,Mouse_T2R122--Intact_1/1-280:0.6326662260)0.9387415686:0.0979965175)0.9822908464:0.0478860042)0.7210801157:0.0564103504)0.9998500075:0.2470113286)0.9974379881:0.1052243949,((Mouse_T2R144--Intact_1/1-273:0.4106612910,Mouse_T2R139--Intact_1/1-269:0.4481781038)0.9998500075:0.3418388627,((Mouse_T2R118--Intact_1/1-272:0.6615004244,(Mouse_T2R19--Intact_1/1-271:0.2155900159,Mouse_T2R143--Intact_1/1-272:0.2751339249)0.9998500075:0.2530864526)0.9998500075:0.2238310610,(Mouse_T2R126--Intact_1/1-279:0.4288574979,Mouse_T2R135--Intact_1/1-275:0.7656949928)0.9998500075:0.1724371662)0.9998500075:0.3089406733)0.9906939019:0.0930939927)0.9998500075:0.1282194928,((Frog_T2R1--Intact_1/1-287:0.3510779989,Frog_T2R29--Intact_1/10-284:0.3183371215)0.9998500075:0.5895760922,((Frog_T2R26--Intact_1/1-277:0.3608410142,(Frog_T2R7--Intact_1/1-269:0.0000028659,(Frog_T2R47--Intact_1/1-269:0.0000002107,Frog_T2R6--Intact_1/1-269:0.0925107661)0.9329005514:0.0191467137)0.9998500075:0.5181170213)0.9998500075:0.2971507

864,(Frog_T2R31--Intact_1/1-268:0.9432331625,(Frog_T2R4--Intact_1/1-264:0.5292968107,
(Frog_T2R5--Intact_1/2-276:0.4452445211,Frog_T2R48--Intact_1/1-
276:0.7105934744)0.9793655660:0.1044632915)0.9998500075:0.3252907061)0.6563109063:0.051033
3140)0.9998500075:0.1117206212)0.8673286692:0.0296372284)0.8137837545:0.0554855079,
((Frog_T2R30--Intact_1/1-282:0.8272648301,(Frog_T2R8--Intact_1/1-264:1.0199302889,(Frog_T2R23--
Intact_1/1-262:0.6899544419,Frog_T2R3--Intact_1/1-
276:0.7798721483)0.9985338407:0.1952288827)0.9072052983:0.0973268139)0.9998500075:0.173352
5408,((((((Frog_T2R49--Intact_1/1-281:0.0299816200,(Frog_T2R12--Intact_1/1-
283:0.0173398816,Frog_T2R2--Intact_1/1-
292:0.0351097668)0.9998500075:0.0377564572)0.9998500075:0.2187163195,(Frog_T2R36--Intact_1/1-
280:0.1157335647,(Frog_T2R35--Intact_1/1-283:0.0920338546,(Frog_T2R34--Intact_1/1-
274:0.1182698262,Frog_T2R9--Intact_1/1-
283:0.0705768125)0.9998500075:0.0670300030)0.9998500075:0.0425922766)0.9068766681:0.036843
4662)0.9998500075:0.2424215387,(Frog_T2R42--Intact_1/1-291:0.3789200934,(Frog_T2R40--
Intact_1/1-284:0.1387220718,(Frog_T2R38--Intact_1/1-283:0.1470968205,(Frog_T2R22--Intact_1/1-
283:0.0499817398,Frog_T2R33--Intact_1/1-
285:0.0437672686)0.9998500075:0.1442197664)0.9998500075:0.0506431638)0.9998500075:0.271623
1439)0.3489861944:0.0160885373)0.9998500075:0.0795845681,((Frog_T2R11--Intact_1/1-
288:0.1050094223,(Frog_T2R10--Intact_1/1-284:0.0295313122,Frog_T2R32--Intact_1/1-
284:0.0758918865)0.9998500075:0.1040340316)0.9998500075:0.2634336645,(Frog_T2R39--Intact_1/1-
285:0.1451722830,(Frog_T2R37--Intact_1/1-287:0.1313889101,Frog_T2R41--Intact_1/1-
287:0.1546973339)0.9908442764:0.0365337228)0.9998500075:0.2693605432)0.9524055806:0.070190
8914)0.9998500075:0.7247662569,((Frog_T2R43--Intact_1/1-279:0.0276156267,(Frog_T2R44--
Intact_1/1-279:0.0762978677,Frog_T2R45--Intact_1/1-
283:0.1242370242)0.9998500075:0.0807449944)0.9998500075:0.6281820276,((Frog_T2R20--
Intact_1/1-287:0.3367721774,(Frog_T2R17--Intact_1/1-267:0.1836411932,(Frog_T2R13--Intact_1/1-
284:0.1429331211,Frog_T2R15--Intact_1/1-
286:0.1908147297)0.9988383537:0.0622540761)0.9998500075:0.2489369796)0.9998500075:0.580226
5024,((Frog_T2R14--Intact_1/1-279:0.2509771371,(Frog_T2R18--Intact_1/21-
297:0.0494714498,Frog_T2R19--Intact_1/1-
260:0.0303239435)0.9998500075:0.1444025520)0.9998500075:0.2125366467,(Frog_T2R16--Intact_1/1-
267:0.4952301394,Frog_T2R21--Intact_1/1-
274:0.6604838105)0.9776221557:0.1364395644)0.9998500075:0.2881570838)0.9998500075:0.216352
0704)0.7776615141:0.0984982343)0.4476848763:0.0280234836,(((Fugu_T2R2--Intact_1/1-
281:0.6132557313,(Zebrafish_T2R1--Intact_1/1-293:0.0574349317,Zebrafish_T2R2--Intact_1/11-
304:0.1261576988)0.9998500075:0.3243151406)0.9998500075:0.9257419205,
((LC_T2R01_g03562_fishlike/1-292:0.4385990364,(Stickleback_T2R3--Intact_1/1-303:0.0791503986,

(Fugu_T2R1--Intact_1/1-302:0.0869870169,Pufferfish_T2R1--Intact_1/1-302:0.1825167872)0.9998500075:0.1475367072)0.9998500075:0.5454529512)0.9998500075:0.7470701070,(Zebrafish_T2R3--Intact_1/1-278:0.6597843260,(Zebrafish_T2R4--Intact_1/3-272:0.9018007676,((Fugu_T2R4--Intact_1/1-263:0.3698918948,Pufferfish_T2R6--Intact_1/1-260:0.2518950626)0.9998500075:0.5707499799,((Stickleback_T2R1--Intact_1/3-272:0.0735748762,Stickleback_T2R2--Intact_1/3-268:0.0278038677)0.9998500075:0.4303115318,(Fugu_T2R3--Intact_1/3-269:0.2505449509,(Pufferfish_T2R3--Intact_1/3-268:0.1928170449,(Pufferfish_T2R4--Intact_1/1-266:0.0817819622,(Pufferfish_T2R2--Intact_1/1-269:0.0244307538,Pufferfish_T2R5--Intact_1/1-269:0.0254920824)0.9998500075:0.1391987942)0.9998500075:0.0652164303)0.9998500075:0.1539939690)0.9998500075:0.2126456684)0.9998500075:0.2688511494)0.9669210246:0.0978596136)0.9767203407:0.1183212442)0.9998500075:0.8027202107)0.6524222508:0.0700574430)0.9256339886:0.1224284761,((LC_T2R02_JH128442-389500-390500/1-287:0.5919641727,(LC_T2R03_ENSLACG00000000459/5-289:0.3529263945,LC_T2R04_ENSLACG000000005021/1-292:0.2907779392)0.9998500075:0.4349795895)0.9998500075:0.1843612242,(LC_T2R05_ENSLACG00000002015/1-302:0.3297067428,(LC_T2R06_ENSLACG00000000717/1-297:0.1804097940,((LC_T2R07_ENSLACG00000000429/1-295:0.0864375690,(LC_T2R08-r_JH130784-23237-24160/1-299:0.1292119929,(LC_T2R09_ENSLACG00000003709/9-307:0.0632866935,(LC_T2R10_ENSLACG00000002588/1-300:0.0451538179,(LC_T2R11_ENSLACG00000000516/1-296:0.0183791268,LC_T2R12_JH130784-b58450-b59400/4-303:0.0470670107)0.9998500075:0.0109042506)0.9998500075:0.0397194455)0.9991873003:0.0362714749)0.9358963985:0.0267032814)0.9998500075:0.3365818215,((LC_T2R13_JH130976-3613-4524/1-300:0.3070308455,((LC_T2R14_g02292/13-312:0.0289168699,LC_T2R15_JH129824-107559-108476/1-300:0.0186604016)0.9998500075:0.0416612994,((LC_T2R16_g02330/13-312:0.0257659952,LC_T2R17_g02899/1-300:0.0222969243)0.9998500075:0.0245928735,(LC_T2R18_JH131589-29724-30617/9-294:0.0675650722,LC_T2R19-124199-125143/1-300:0.0154652652)0.9998500075:0.0281562755)0.3032687553:0.0163665249)0.9998500075:0.3646985846)0.9909907968:0.0370578107,((LC_T2R20_g00491/11-310:0.0469882582,LC_T2R21_g05130/13-304:0.0030171745)0.9998500075:0.1627111116,((LC_T2R22_JH129648-127088-127993/1-300:0.1747709926,LC_T2R23_ENSLACG00000001021/1-290:0.2764590245)0.9998500075:0.0713104869,(LC_T2R24_ENSLACG00000001744/4-304:0.2534522961,((LC_T2R25_JH129648-116200-117050/1-297:0.1600651602,(LC_T2R26_JH130917-46105-46999/1-295:0.1042439784,(LC_T2R27_ENSLACG00000001874/1-300:0.1630784674,((LC_T2R28_g06895/1-299:0.0878065142,LC_T2R29_JH128085-30766-31662/1-295:0.0765555986)0.9998500075:0.1286341710,(LC_T2R30_ENSLACG00000001246/1-299:0.0723310449,(LC_T2R31_JH128085-329000-329900/1-300:0.0481077861,LC_T2R32_JH128085-412667-413584/1-

299:0.0930470872)0.9449286383:0.0148181688)0.9998500075:0.1209767063)0.9998500075:0.046450
0873)0.9998500075:0.0394929695)0.9998500075:0.0931800935)0.9998500075:0.0469522097,
(((LC_T2R33_g01751/1-294:0.1580192460,((LC_T2R34_JH129988-117000-119000/1-
295:0.0790185626,LC_T2R35_ENSLACG00000000678/13-
302:0.0684089244)0.9998500075:0.0741050618,(LC_T2R36_g01331/1-
297:0.0645545122,LC_T2R37_JH129988-167404-168291/1-
295:0.0721536692)0.9998500075:0.0673071302)0.9876579378:0.0330008929)0.9998500075:0.216258
6537,(LC_T2R38_ENSLACG00000000317/13-303:0.1822088658,(LC_T2R39_g01372/11-
301:0.2046444232,LC_T2R40_ENSLACG000000002445/1-
301:0.2124071906)0.9988822015:0.0406950753)0.9998500075:0.1128563153)0.9998500075:0.0961676
211,((LC_T2R41_JH130077-122561-123463/1-
297:0.0424660428,LC_T2R42_ENSLACG000000006135/4-
293:0.0143747203)0.9998500075:0.1921306702,((LC_T2R43_JH132281-3349-42091/1-
283:0.0413513239,LC_T2R44_ENSLACG000000005213/2-
296:0.0161512404)0.9998500075:0.2213721895,(((LC_T2R45_ENSLACG000000002953/2-
296:0.1895152970,(LC_T2R46_JH132617-3356-4267/1-299:0.1004729088,(LC_T2R47_JH134280-
2000-3700/1-299:0.0185803549,LC_T2R48_JH131192-13968-14870/1-
296:0.0872585676)0.9998500075:0.0367990437)0.9998500075:0.2113378609)0.9998500075:0.0591262
848,(LC_T2R49_g03496/1-300:0.3438861481,(LC_T2R50_JH135454-2600-3600/1-
295:0.1511502456,LC_T2R51_JH130976-56756-57640/1-
292:0.0490532745)0.9998500075:0.0885755659)0.9938065021:0.0463101885)0.9998500075:0.093454
5582,((LC_T2R52_ENSLACG000000002071/2-301:0.0229632341,LC_T2R53_ENSLACG000000002046/1-
293:0.0013143107)0.9998500075:0.1124191901,((LC_T2R54_JH130641-11547-12443/1-
295:0.0109428000,Lc_T2R55_JH130827-7169-8065/1-293:0.0638314445)0.9998500075:0.0572051262,
(LC_T2R56_ENSLACG000000001061/14-304:0.1897064198,LC_T2R57-AFYH01284138-450-1400/1-
295:0.1031690167)0.9998500075:0.0347557749)0.9998500075:0.1239290370)0.7342368583:0.023392
2149)0.9998500075:0.0761066055,(LC_T2R58_g06318/2-294:0.1965316438,(LC_T2R59_JH128916-
126493-127395/1-295:0.1961340514,((LC_T2R60_JH128916-233505-234389/1-293:0.1763913703,
(Lc_T2R61_JH128916-195708-196628/1-299:0.0554555418,Lc_T2R62_JH129837-106889-107800/1-
296:0.0452095784)0.9998500075:0.1081398499)0.9998500075:0.0575370598,
((LC_T2R63_ENSLACG000000002255/3-302:0.2685466036,LC_T2R64_ENSLACG000000003395/1-
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297:0.0857935224,LC_T2R67_ENSLACG000000002847/21-
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Part 5 Tree file in Newick format for T2R and V1R sequences shown in Fig. 3.

(Tn_ORA6/1-274:0.0723508757,Tr_ORA6/1-274:0.0556883993,(Ga_ORA6/1-279:0.2991686178,
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(Ga_ORA5/1-276:0.1202849751,(Tn_ORA5/1-276:0.0438863580,Tr_ORA5/1-
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(OI_ORA4/1-306:0.1171404927,(Tn_ORA4/1-303:0.0425557892,Tr_ORA4/1-
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