

The nucleotide sequence of the ribosomal protein L14 gene of *Xenopus laevis*

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SEQUENCE ORIGIN The *X.laevis* L14 gene, coding for the protein L14 of the large ribosomal subunit, was isolated from a genomic library in Charon 4 and subcloned in pBR322. Capsite was determined by primer extension and S1 mapping (1). Sequencing was according to Maxam and Gilbert (2).

Sequence of l14gene

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-869 GGTGTGACA TCAGTTGGCG GGCTATAACT TGGCTATAT GCGCGATTGC ATACCTCCCA
-809 ACTGTCGCAT TTTTAGAGGG ACTGTCCCTC TTTTGTA AAAA TGTAATGTAT AAAGGCTGGA
-749 CGTCTCACAT AATAGCCAGA ACACTACTTC CTGCTTTTCA GCTCTCTTGG TTTACACTGA
-689 CTGATTACCT TGGTTACCAG GCTGTAACCA ATCAGAGACT TGAGGGGGAG GGCACATGGG
-629 TCATATTTGT TGCTTTTGAA TCTGAGCTGA ATGATGAGGA TCTAATTGCA AACTCACTAA
-569 ACAGAAATGT ACCATGTGGC CCCCTTCAA GCAGTGACGG AACTACCGGG CAGCCCGCAC
-509 GCGACTGAAA ATGAAAGTAC GGAGGGGGTC GGGGCCTGGC TGCACCTCAG GCACATGGGC
-449 CCGCCCCCTC CTAGTTACAC TACTGCCTTC AAGTCACTGA CTAACTCAGA GATAGATAGC
-389 TGA AAGCAG GGGGTAGTGT TCTGGCTATT ATGTTACACA TCCAGTCACT CCAGCCTTTA
-329 TACATTACAT TTTTGGCTAA CTAACATATAT TAGAAAACATT TTTTATTTAG CACAGCCTAT
-269 TTACCCAGTT TTTATTTTCA CACTGAACTG TTCCCTTAAA AACCCAGCTT CAATGCCCCAC
-209 AGTGCAACCA CACATGTATT ACTATTTATT ACTATAAGCG TGGACTCGGT AAACAAAAAC
-149 AACTTCGCAT TGTGCAACTG ATTTATCCTG CCCTTGGCAC AACATTTGAG TCCTCGGCCC
-89 ACCACCGAGT GTTCAGGCTA GAGCGGCCAC CAAAACTTC CCGTTCATCAG GTGTCCCAT
-29 AAGCCTGTTT CCGCCGCGCTG TCTCTTCCCT TTCCCTCCCG AGAAGCCGCT GCTGCTACAG I
32 CCGCATCAT GTGAGAAAC CAGACTACTT TATAATCCGC TGAATCCCG CTTTCTTCTC
92 CAGCGCTAC TCACAATCAG GGGATGGCTG GCTCCTAGGA CTGTGGGCTA CCAGTACCGG
152 GCCAGTGTG GAGTGAATG TGTCCGAGAA GTGTTGTTAA ATAAAGGATG TGTAACCTCTT
212 CCTCCGTTCA GCTTCGGGCC TGGGACTGGG CGCACACACT GTTCTATGGC TGCTGGTTAA
272 GTAAGCGGAC TTGGCATGTT TCCAGTGGCC GAGACATGGG ATTAAGAAGC CTTTTCAGAA
332 CCAGAGCGGG AAGCCAGACA TTA AATAC TGCACCTCCC CTCTGAACC TGAAGTGGTT
392 AAACACATGA TACCACTGGC GACCCTAATA GGTGAGTTGC TCCATCGCTA CCGCTTAACC
452 AGATCCGCTT GCCTAGAGCA GCCCTTCCGA TGCCTCGGAC GATTTGCTCT GGATTTCAAG
512 CTTTTTGTCT CTACTGTAG ATGCCAGTCT GTCTCTATGG CAGCTCTCC ACTTCCCTTA
572 CTGTGTAGAG TAGTCTTGT CATAGGACGG ACCCCTTGCA CTGCCGGAAC TGACTCCGCT
632 AACACCGTAG CCGTAGAGCC ACTTCCGCCA CACCGCCCTA AAGGTCTAAA CCAGACAACA
692 GAAAAGCCTA AAGGAACGTT GCTTTCAGCT GCAATTACAC GTGGGTAAAG CCATGTCACT
752 TAGCTGTGCA ACAATGCTTC CTAATCTAAA ATCCAGCCCT CTTCTTACTT TATCCAGAA
812 GTGCAGCTGA ACTCAAGATA AGTTGTTTCA ATCCAGCAGC GGCCTAGCAA GATACTTGTT
872 GTTTGCCCTG AATGTTTTAT TTGAATGATT TTTTAAATTAG ATGTTCTTCC TATTTCTTAT
932 TAGGGAATAG ATATCCGTC CAACAAGGAC CGCAAGGTGC GGGCAAGAA GCCCAAGAGC II
992 CAAGATATCT ATCTGAGGCT TTAGTAAAG GTAGTGTTAA TGATTTTGTG ACCGGGTTTT
1052 ATCAATGCT CCGGTTTATC TCCACCAAC TTA AAAAAATG TATCTTTTTT TTTTAAAGCT III
1112 TTATCGATTG TTGGCTGCTG GTACCAACTC CAGTTTCAAC CGGGTGGTTC TGAAGCGTCT
1172 GTTCATGAGC CGAAGCAACA GGGCCCCCT CTCTATGTC CPTTTTAA GTATAATGTG
1232 TTTAAAAAAC GCGCATGTA ATTTGTATGT ATTTGTCTGG TAAGGTAATT CATAAATCA
1292 AATTGTGTA GAGACTTGGC TTA AAGTGG ATCTAGTTGG AGTGGCTTGT TACCAAGCTG
1352 ACCTGAATGA CACTTGGT GCTATGGTT ACAGGATAAA GGC AAGCATCC TCGCTGCCA
1412 CTCTATCTAG TAGCACAGCA AAGTCTCATT TACCAGTTT GCACATGTGA AGAACACGCA
    
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1472	TCATATTATC	AAGGGCAATT	GGTGTTGGC	TTTTGGGAT	TGTTAATGCT	TTTTGGCTA	
1532	AATCACTAGT	GCATTAGGTA	TAATCAGAAA	TGIGTGAC	GAGCATT	TTTTTTTTT	
1592	AAATATCCT	TTTACAAGAA	AGTCATTGCG	ATTACAATTT	CTTTGGCCACA	ACCATATAGC	
1652	TCTCATGGC	AAACTAAAGC	CCATGGGCGG	TTCTAAAAAG	CATGGTCTGC	ATTTTGTATC	
1712	CTCATGTGT	AGGCTTTTTA	AACATTTTAA	ATATTTACAA	TGCGTATGTT	TCTGTAAAT	
1772	TGAATTTACT	CATTTTTTTT	AATAAGTATT	CATTTTTAAT	TGTGCTATGC	AAACTACTGG	
1832	CTGGGTATA	GGGTCAGTGG	CCTCAGCATT	TTCGAATTC	AAAGTGGGAA	CGCCAGAAAG	
1892	AAATCTGTAG	TTTCTCTGT	CTAGGTGCTT	GGAGTGTGA	ACATGTTAA	GGCCCCATGT	
1952	AGCTCATTAT	TGTTCCAAGC	ACTTCTTTTA	TTGCAGTATA	GGTATTTCT	CATGTACTTT	
2012	ATTGCGTTTT	GTTCGTAAAT	GAGCGGCAGC	ATGTTTATCA	CTTGGGTGGA	TGTCACCAC	
2072	CCAGCTAAAC	TCATCCTGCT	GTCTGATGTT	CCTGTTTAC	AAACCCTTCA	CAAGTGGTTT	
2132	AGATAAAGTA	GATATATTTA	GTTTATTAC	ACAGGTCCAC	TATTACATGG	GTATGTATGC	
2192	TAGCGGAAGC	CGCTAAGCTC	AAATGTGAGT	AAACATAACC	ATGTAGCCAT	AGTCTTATCC	
2252	TTTGCTCTCT	CAAATGGAAT	GCCTTTTTAG	AGGAGAAGGA	AAAGCTACTAA	ATCAGTTAAT	
2312	GCCAATAGAT	TAGCCACAAT	AATACAAGCT	CTAACACTGT	TTTTATTCTC	TAGAATGCTT	
2372	TACCATAACC	TAGTAAACCG	CTCTAGAAGT	TCTGCGTGT	TGTTTACGAT	AGAAGCTGCC	
2432	AAAGTAGCTT	ATTGTGACAT	AACCTTACTG	TTGGCTCTCT	CCCCTGTCAC	TCATAGCTCT	
2492	GGGCTCAACA	GGGAGGAGAG	GGAGAAAGGA	GCAAACTGAG	CCTGCTCAAG	CCCTAGCCTA	
2552	GGCATTTAAG	ATGAAAAGT	CTGATACAGA	AGCCCATGTG	TATACACAAT	AGAAGGAAAG	
2612	AAAACTGTT	TCTTTTGACA	GAGGACTCAG	AGCAGCATT	CTTTTGACAG	TTTACTAGT	
2672	TGTTTATATA	GACCTTTATG	ATAAAGCTTA	CTTAATTTTA	GCTTTTCTT	CTCCTTAAAC	
2732	TTGATTTTGT	GAAGATACTG	AGCACCTGG	ACTTGTGCTA	CCAATTGTCT	GTGAGCTGAA	
2792	AATGCTGTT	TAAGCTTCT	TAGAGATGTA	GAATGTATGG	CATATAAAT	GCATCTTCCA	
2852	AGTGTGTAAT	TTCTTTGTTT	AGAGCTAATT	ACAGAATGTT	AGTGCCGAGC	AGTAACACCT	
2912	TGTGAATATA	ACTAGGGAAT	AAACACCCCT	TATGTGTTT	GTTCCTGGAC	TCTGTTGCTT	
2972	AGTATGGTTG	AATAAACTCT	TCTGTGATAC	CTTGTCAAGT	TTGTATATGA	CAGCAAGTGA	
3032	CGAGGCACCT	TTAAGTGTGA	CAGTTGGGTA	ACTTGGATGA	ATGGCAAAC	ATGCTCAGA	
3092	CCTGTTTGT	ATCTGTAACC	AAATAATGCT	GATAAATCT	AAAGGCAAT	GGGTGCCAAT	
3152	AAGACAAC	GCAAAGGTGT	GAGATATAAA	TAACATGCAGC	ATGAGTTACA	CAGCTACACC	
3212	AAATGGGACC	AGAGGGAAAG	TTTAGGAGCC	AAGCCTTTTG	TCTCCAGATT	TCAGTCCATC	
3272	TTTGTGTTCT	GTTAGACCTA	AGGAAACTCT	CGTTTGAAGC	CGCATGATTC	CTCCTCTTGT	
3332	ATTGGGTGTA	GATTCACGTG	TACAGCTCTG	TTTCTGCCAT	TCATATAAGA	CTGGACACAC	
3392	AGGTGTAGCA	CTAGGTGTA	AATAAAAACT	GGACAATAG	GACTGTGCAA	AATAAAAAAA	
3452	TGTTTCCGAT	ATAGTTAGCC	AAAAATGTAA	TATATAAAGG	CTGAGTCAAG	CCGATGCTTA	
3512	ATATAATAGC	CAGATCATT	CTTCTGCTT	TTCAGCTCT	TAACTCTGAG	TTAGTCAGTG	
3572	ACTTGAAGCG	GGCCACATG	GGACATAAGT	TTGCAATTG	CCTCAGCAT	CAGCTCAGT	
3632	TCAAAAGCAA	CAGATAAAC	CCATGTGCC	CCCCCCCTC	CACCAAGTCA	CTGTTTGGGA	
3692	AACCAAGAGA	GATGAAAAGC	AGGAAGTAGT	GTTCCTGTT	GTTACACAT	CAGCTACCTC	
3752	AGCCITTTA	CATTACATTT	CTGCCAAGT	ATATTAGAAA	TTTTTTTAT	TTTCCACAGC	
3812	CTATTTACCC	AGTTTTTATT	TTTATACTGA	ACAATTCCTT	TAAATTAATA	TAATCTAAGT	
3872	TGCTAACACG	TTAGGCACC	CCTCTCTAG	ATGATCTAAT	CTTTGTCTTG	CTCAGACTTC	
3932	CTTCTAGAA	CATGTTTAA	TTCAATTTAA	GTGAACTAAA	CAAAGGTTCT	TTTTTTTTTA	
3992	ATTCTCTGTT	ACTCCTGAT	TGCAAAATG	AAATTGCAAG	GACGTGAAA	CAAGACTGCA	IV
4052	<u>GTGTTGTTG</u>	<u>GCTGTATCAC</u>	<u>AGATGATGTC</u>	<u>AGGATCCATG</u>	<u>ATATCCCAA</u>	<u>ACTGAAGCTA</u>	
4112	GAGTGCCATC	AGATGTACAG	GAATCCAGTG	CCACTTATAT	AGAGAAGCAG	ATTTTTGTG	
4172	ACAGATCAGC	ATGGACTTTG	GTTTGCTGTA	GTGCTATAAA	TACCTTCTT	AATTTGAAAG	
4232	AACCTTTTT	AAAAATGAAA	TATTTACAT	TAATATAGGG	CTATTCACCT	GTACACCTTA	
4292	AACTCCTGCA	ATCTTGTAGC	TACATAGGCA	ATATCATATT	GTATACAAA	ACAAGATCTG	
4352	TCCTTTCTCA	CTTGTGCGCA	CTTAAAATAA	CCAGCGGAGA	CCGTAGCCGA	ATCTGAAGT	V
4412	<u>CTGGAGGTC</u>	<u>GATTATGACG</u>	<u>TTTGATCAGC</u>	<u>TCCGCTTTCG</u>	<u>GGCCCTAAA</u>	<u>GGCCAGAAC</u>	
4472	<u>CTGTTCTTCT</u>	<u>TTCAAGTAA</u>	<u>TGGACTGGGT</u>	<u>TGTGCTTCAT</u>	<u>TGTGTTTTT</u>	<u>TTTACATGAA</u>	
4532	AAATCCACATA	TTAATTTTAA	TTCAAGTTTG	TCCCTGTTTT	ATTAAGATA	TGGCGGTGA	
4592	TACTGCTCTA	GGGATAAAGC	TTATCTGTTT	ATTTCTTAA	CTGAGTTTGA	CTAATATACA	
4652	ATATACACTG	TGGAAATATA	TTACAGTGCC	TCCATGAA	GGGAGTGCC	TTAATGATCA	
4712	ACTTTATCTT	GCCTTAAATA	TTACATTTCA	CCTTAAAGG	AGAACTAAAC	CCTAAAAATT	
4772	AAATGGGATA	AAAATGCCAT	GTTTATATAC	TGAATTTATT	GCACCAGCCT	AAAGTTTTCAG	
4832	CTTGTCAATA	CGACCAATGA	TCCAAGACTT	CAAACCTGTC	ACAGGGGGCT	ACCATCTTGG	
4892	AAAGTGTCTG	TGACACTCAC	ATGCTCAGTG	GGCTCTGAGC	AACGTTTGC	CGCTAGCTG	
4952	TAGGGTCTG	CACATAATT	CCAGCAGAAA	ATGAGGTTG	TCTGTAATAT	AAGCTGATGC	
5012	TACAGGGCTG	ATTATTAAT	TCTGATGCTA	GTGCTCTGG	TTTCTTTGCT	GGCATGTAGT	
5072	AATTTGTCAA	ATAATAACT	AATCAGTTTT	ATACGTGAC	ATTTCTATTC	CTGCTACTAT	
5132	ATATTTTAA	ATGGCCCTTA	AGCTCTGTTA	ATGAGAGCAG	CACAGAGCAT	CTTCTAGTCAA	
5192	TACAGCAGAAA	AGAAGATGGG	GAGCTACTGG	GAGCATTTG	GAGAGATAGA	TGCTTACTGC	
5252	TAAAGGGCTG	TGGCTGCCTT	GGGCGGTACA	GAAAGCAGAAA	ACATAATGTA	CAACATTTCT	
5312	AGATACTTCT	TTAGTTTAA	TTTCTTCTC	CTTTAAATTA	ATTTTAAAGTA	TGATGTAGCC	
5372	CGTGATATT	TGAGTCAATT	TGCAATAGGT	TTTAAATTTT	TTTATTTGGT	TTTTGTGTTA	

IV

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5432 ACTTTTTATT CAGCAACTCT CAAGTTTGTA TTTGAGCAAT CTGGTTGCTA TGGTCCAAAT
5492 TATCTGATCA ACCATGCATT GATCTGAATA AGAGGCTGGA ATAGGAGAGA CCTGAATAGA
5552 AATATGAATA ATAAAAGTA ACAATACATT TGTAGCCTGA TCATTTGTTT TTAAGATGGG
5612 GTCACTGAGT TCCATTTCAG AGCTGCAAAG AGTCAGAAGA AGTCAAATTC AAAAAGTATA
5672 AAAAAAATAA ATAAAGGCCA ATTGGAAACT TGCTTGGAAAT TACCTATTCT ATAACATACT
5732 AAAAGTTCAC TTAAGGGCA TGTAAGGCCA AAAATATAAA ATCCCATTTT TACTTTCTTT
5792 AATGAAAAAT AAATCTATCT CCAATATACT TTAATAAAAA GATGCTCTACA GTTTTTATCT
5852 AAACCTGACT GTATGCAGTG CAATTCCCCC TTCTTTTACT GCTGTGGATA GGAATGTCA
5912 GATGTCGCC AACTGCTGTG CAGGTAAGC ATCATACTTT CAAATGGCAG GGGGATGCC
5972 TCCACCTTAC TTCCCAAGAC TCGAGCAGCA TTGTTGGATT TCCGTAGAG ATTTGTATCC
6032 AGAGACGCAG TGTAGTCTCT ATATTATGAT TATAATCAG TCTTGTCTGA TTGGCTTCTA
6092 TGGCAGATAT TATTGGACTT GTGCTGTTTT GATAATTTAT GAGCATCCCT AAGCTTAACC
6152 TCCCAACTGA AGCCAGACC ACACTGAGCA TGTGGCAGTC TGTGATTGC AGAATGTCT
6212 AACAAAGTTA CAAGATGACA GCCCCCTGGC CCAACTTTGA AAGCATAAAT CATTGTCTT
6272 ATTAGGCTGG TAGTGAGTA AGTTCATGTT TATATTAGT ATACATAATA CAGGATTTC
6332 AACATTATTC TATTTAGAC TTTAGTTGCC CTTTAAAGGT GACCACCCC TTATTATGAG
6392 GAAATGCAGT GTGACATAAC CTTAAGGGCA ATGTGGAATT GTGACAAGCA AACTGAACGT
6452 TCTTCATAAA ATGGCATTTG GTATTACAT AAGGTTTGTG TAGGAAAAGC TACACTAGTG
6512 ATGTCTAAGT GTGTGGCTTT CCCAGCTGGC AGGATCCTTC AAGCAAGATC CTATCTATTA
6572 GGTTCCTGTT CAGGAAGGGT CTGGTGTGT GCATTGTTGG AAGATCAGAT TTATTAGGCT
6632 GTGTTTCCTT TCTATGGATA TTTGGACAAA TTTAAAACCC GCTCTTTAAA TTTAAACCA
6692 CTATATACAG TATATGTAA AAAAAATAAA TAAATATCTA TGTGTATTTT TGTAAATGTA
6752 AGATTCCATC ATGGCTACTC CTGACTGCAA GGACATAACA TGTGTATTTC AGTGGGGTGC
6812 CAGTTTGTGT TGTGCTCTTG TATATGGAGC AATAATAAAT GAGCTATTGT ACATGGAAT
6872 AACTTGAACT TCTTAAATTG GTTTTCTTTA AATAAAAAGAA AATGAAACC ATTTTGGCA
6932 TCTTGTAACC TTGTATATGT GATTTTGTG TAGGACCTCG TAAGGCCCGT GAAGTATACA VI
6992 GACACTTTGG GAAGGCACCT GGTACTCCAC ACAGTCGCAC TAAAGTAAGTT ACCTACATTT
7052 GATTATACAC AAGATTGCTC TACTATTTAT TCTTCTGTT GTCTAGCTAC AGGATGATTG
7112 CTGCATGCCT TATCTGATAG GACGATATAC ACATTTTTTA TGTCACATTT AATTCACAC
7172 GCACCCACACA TTTTGCACAA TCATGTTTGA ACCTTCTTTT TTGACAAGAT GAAGCATTTT
7232 AGTTTTTGTG TTTAATGTTT CCATGCTTGA GAAATGTGCT TTTTAAAGC CTTTATGAT
7292 CACAGTCTCT TCCCTGGCTT CTGTTATTAC ATTTTGATAC ATAAGTAAAC CAATAAAAGC
7352 AGCAGTTTGT GTGCTGTGCT CTTACTAATC CCTGTACTAT TTTGGCCCTAG GCCTTATGTG VII
7412 CTCTCCAAGG GTAGAAAGTT TGAGCCGCCC AGAGGACCGA GAGCCAGCAG AGGATACAAG
7472 AACTAAATTC ACTGTTTATG CTTTGTACTC AATAAAGTTC TTTGACTTC AACACTGACC
7532 TTTTCTTTTT ATCAAAACAA GCTGGCAACC TTGATTTTAT TTTCAATCAT TGCCCTTATG
7592 CTAAACATAT TTTTGTGTTA GCTTAGTTAG ATGGCAAAAT ATCTCTAATT TAGCCGCCAA
7652 AATCTGGTTG ATGTCATGGT TTACCATGTG ATTGATCAGA TCGTCCGGTG GCCTATCTTT
7712 GTCTGATGTG GAGTCTGACG CTTCAATCAG TCAGTGATA GTCAACATA GTTTACTATA
7772 TATGTTGTA AATAAGAGGT TAGTTTCAAC CCTGTGTTTT CAGCACACTA ACCTTTTCTC
7832 TTATTAACCA TGGTCTTAC TATGCTTAGG AGTGTGAGC CAGCAAGGC TGAAAATGTA
7892 ACAATGTGGG CTGCAAAAT AAATCTAGCA CTTTGTATAG GATTGCATTC ATATGATTTG
7952 CTTTAAATGT GGCACAATGT TCCTTACTGT AATCAAGTCC TTGAAGTAAAC ACATACTACA
8012 GTCACTGCT CCAGGCACCC ATCAGCAGG CAAGCTAGCA GTTTGGGAAT GATTTTCTA
8072 AGTCAACCAT ATGTTTGGCC ATTTGTCACT TGAAGTGGC ACAACCTGTG GAGGCAGGCC
8132 CTCGCTGTGC CATTCTAAT GCTTATGTAC CAAATGCTTC CTTTGGCCA GTGGTCCCA
8192 ACCAGCGGCT TGTAGTAAAC ATTTTGTCTC CAGTGCCTC ACAGCAGGTG CTTATTGTTG
8252 AATT

The exons of the gene are numbered and boxed. The ATG for start of translation is underlined. Exon boundaries were determined by comparison with a full-length cDNA (1).

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