Ribosomal protein L27 is identical in chick and rat

Marie-Claire Lebeau+, Gonzalo Alvarez-Bolado, Olivier Braissant, Walter Wahli and Stefano Catsicas*
Institut de Biologie Animale, Université de Lausanne, 1015 Lausanne-Dorigny, Switzerland

Submitted January 31, 1991 EMBL accession no. X56582

Our goal was to identify a gene with stable expression and use it as a control for differential cloning in the developing chick retina. Probes to cytoskeletal elements, like actins, are widely used for such purposes but we have found that β-actin expression clearly decreased after neuronal maturation (Fig. 1a). Moreover, β-actin levels were much lower in liver than in brain or retina (see ref. 1) and the probe hybridized mainly to a smaller mRNA species in heart (probably α-actin, see ref. 2). Therefore, a chick retina cDNA library (3) was differentially screened with cDNA probes derived from mRNA extracted at embryonic day 9 or 15 and several clones showing the same intensity of hybridization with both probes were isolated. One such clone hybridized to a mRNA of about 600 nucleotides equally abundant in all tissues tested (Fig. 1b). The sequence of the insert was determined (Fig. 2) and revealed an open reading frame of 408 nucleotides with 83% identity to the rat ribosomal protein L27 coding region (4). All nucleotide differences were silent, resulting in a predicted protein sequence of 136 residues identical in chick and rat.

REFERENCES

1. Erba,H.P., Eddy,R., Shows,T., Kedes,L. and Gunning,P. (1988) *Mol. Cell. Biol.* **8**, 1775–1789.
2 Lose,P. and Arnold,H.H. (1988) *Nucl. Acids Res.* **16**, 2787–2803.
3. Catsicas,S., Larhammar,D., Blomqvist,A., Sanna,P.-P., Milner,R.J. and Wilson,M.C. (1991) *Proc. Natl. Acad. Sci. USA* **88**, 785–789.
4. Tanaka,T., Kuwano,Y., Ishikawa,K. and Ogata,K. (1988) *Eur. J. Biochem.* **173**, 53–56.

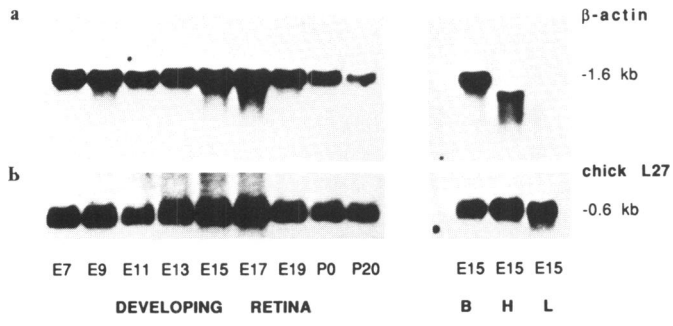

Figure 1. Northern analysis (8 μg of total cytoplasmic RNA in each lane). Both probes were used on the same blots. E, embryonic day; P, post-hatching day; B, brain; H, heart; L, liver.

```
chick L27   -CGGCGCATTGGAGCGGCTGTGTCGAGATGGGCAAGTTTATGAAGCCGGGG   50
rat L27             -CTGCT GC      A                  A C
                                        METGlyLysPheMetLysProGly   8

AAGGTGGTGCTGGTGCTCGCCGGCCGCTACTCGGGGCGTAAGGCTGTCATCGTGAAGAAC   110
  A          C G T A       C A C A C       A
LysValValLeuValLeuAlaGlyArgTyrSerGlyArgLysAlaValIleValLysAsn   28

ATCGACGATGGCACGTCTGATCGGCCCTACAGCCACGCCTTGGTGGCAGGCATCGACCGC   170
  T T       C C C C T       T C       T A T
IleAspAspGlyThrSerAspArgProTyrSerHisAlaLeuValAlaGlyIleAspArg   48

TACCCACGGAAGGTTACAGCAGCAATGGGCAAGAAGAAGATAGCGAAGAGGTCTAAGATC   230
  T CA A A G    T C             C C  C A C
TyrProArgLysValThrAlaAlaMetGlyLysLysLysIleAlaLysArgSerLysIle   68

AAGTCTTTTGTGAAAGTTTACAACTACAACCACCTGATGCCCACCCGGTATTCTGTTGAC   290
   C          T          C       AA   C   G T
LysSerPheValLysValTyrAsnTyrAsnHisLeuMetProThrArgTyrSerValAsp   88

ATTCCCCTGGACAAAACTGTTGTCAATAAGGATGTGTTCAGGGACCCTGCTCTGAAACGC   350
  C T              C           A   A A
IleProLeuAspLysThrValValAsnLysAspValPheArgAspProAlaLeuLysArg   108

AAAGCAAGACGTGAAGCTAAGGTGAAGTTTGAGGAGAGATACAAGACTGGCAAGAATAAG   410
  G C G G C   C         C       A G   C A
LysAlaArgArgGluAlaLysValLysPheGluGluArgTyrLysThrGlyLysAspLys   128

TGGTTCTTCCAGAAGCTGCGATTCTAAATTTGAAATAGGACTGTTTCAATAAATGTTTAT   470
    T       T C T G G ATTT T TTT CG CATTA   AAA A A
TrpPhePheGlnLysLeuArgPhe***                                    136

TAAAAACCA(n)
A T  AA(n)
```

Figure 2. Chicken and rat L27. Only the nucleotides that are different are indicated for the rat. All substitutions within the open reading frame are silent. ***, STOP codon; (n), Poly A tail.

* To whom correspondence should be addressed
+ Present address: INSERM U33, Hôpital De Bicêtre, 94270 Bicêtre, France