Volume 15 Number 22 1987 Nucleic Acids Research

Partial nucleotide sequence of the avian erythroblastosis virus (AEV ES4)

Pierrick Thoraval, Pierre Savatier, Jia-Hao Xiao, François Mallet, Jacques Samarut, Gérard Verdier and Victor Nigon

Laboratoire de Biologie Cellulaire, Université Claude Bernard Lyon I, 43 Boulevard du 11 novembre 1918, 69622 Villeurbanne Cedex, France
Submitted September 16, 1987 Accession no. Y00470

The avian erythroblastosis virus is an avian defective leukemia virus that carries and expresses two oncogenes v-erb A and v-erb B independantly. We have sequenced the non oncogenic parts of the genome. Our sequence includes the retroviral genes δgag and δenv, the long terminal repeats (LTR) and both the 5' and the 3' untranslated regions surrounding the coding sequences.

```
...1  GCCATTTTACCTTCCACCACATTGGTGTGCACCTGGGTAGATGGACAGACCGTTGAGTCCCTAACGATTGCGAACACCTG
..81  AATGAAGCGGAAGGCTTCATTtggtgaccccgacgtgatcgttagggaatagtggtcggccacagacggcgtggcgatcc
.161  tgccctcatccgtctcgcttaacggggagcggacgatgaccctagtagagggggctgcggcttaggagggcagaagctga
.241  gtggcgtcggagggagctctactgcagggggccaagatacccctaccgagaactcagatagtcgttggaagacgggaagga
.321  agcccgacgactgagcagtccacaccaggtgcgattccggtcacccgtggatcaagcATGGAAACCGTCATAAAGGTGAT
.401  TTCGTCCGCGTGTAAAACCTATTGGGGGAAAACCTCTCCTTCTAAGAAGGAAATAGGGGCCATGCTGTCCCTGCTACAAA
.481  AGGAAGGGTTGCTTATGTCTCCCTCAGACTTATATTCCCCGGGGTCCTGGGATCCCATTACCGCGGCGCTCTCCCAGCGG
.561  GCTATGGTACTTGGGAAATCGGGAGAGTTAAAAACCTGGGGATTGGTTTTGGCGGCATTGAAGGCGGCTCGAGAGGAACA
.641  GGTTACATCTGAGCAAGCAAAGTTTTGGTTGGGATTAGGGGGAGGGAGGGTCTCTCCCCCAGGTCCGGAGTGCATCGAGA
.721  AACCAGCAACGGAGCGGCGAATCGACAAGGGGGAGGAAATGGGAGAGACAACTGTGCAGCGAGATGCGAAGATGGCGCCG
.801  GAGAAAATGGCCACACCTAAAACCGTTGGCACATCCTGTTATCAGTGCGGAACAGCCACTGGCTGGAATTGCGTCACAGC
.881  CTCGGCTCCTCCTCCTCCTTATGTGGGGAGTGGTTTGTATCCTTCCCTGGCGGGGGCGGGAGAGCAGGGCCAGGGGGGTG
.961  ACACACCTCGGGGGGCGGAACAGCCAAAGGCGGAGCCAGGGCACGCGGGTCAGGCCCCTGGGCCGGCCCTGACTGACTGG
1041  GCAAGGATCAGGGAGGAGCTTGCGAGTACTGGTCCGCCCGTGGTAGCCATGCCTGTAGTGATTAAGACAGAGGGACCCGC
1121  CTGGACCCCTCTGGAGCCAGAGGACATC
```

A/ Sequence of 1148 nucleotides at the 5' end of the AEV genome, including R (boldface italic letters), U5 (boldface letters), the 5' untranslated region (small letters), δ gag (uppercase letters) and the beginning of v-erb A (italic letters). Noticeable stretches are also underlined : the protein binding site (position 102), the packaging signal (position 216) (3), the splice donor site (position 394), the gag consensus enhancer "core" sequence (position 910)(1). δ gag sequence were found to be in the same reading frame than v-erb A (2) and no terminator codons were identified as previously expected from identification of the gag-erb A fusion protein.

```
...1  GAATTCCCACAGCACAGCTGTGGGCAACCCTGAGTATCTTGAGTGATCACAGTGAGTCTATACAGAAGAAGTTCCAGCTA
..81  ATGAAGGAACATGTCAATAAGATCGGCGTGGACAGCGACCCAATCGGAAGTTGGCAGCGAGGAATATTCGGAGGAATAGG
.161  AGAATGGGCCGTTCATTTGCTGAaaggactgcttttggggcttgtagttatcttgttgctagtagtgtgcctgccttgcc
.241  ttttgcagtttgtatccagtagcatccgaaagatgataaataattccatcagctaccacacggaatataagaagctgcaa
.321  aaggcctgtgggagcctgaaagcaggatagtataaggcagtacatgggtggtggtgtagcgcttcggagtcggactgtaa
.401  cggggcatggcttaactaaggggactatggcatgtataggcgtaaagggggcttcggttgtacgcggttaggagtcccct
.481  taggatatagtagacacgcttttgcataacttctttgttttgcccttagactattcaagttgcctctgtggattagggct
.561  ggaggcagctcggatggtctgatggtcaaataaggcgggcaagaaagctatgaaatacgcttttgcatagggggggggag
.641  cTGTAGTCTTATACAATAGCCTTACACAATAATGCTATGTAACGATGAAACAGCAGTATTCCATATAAGGAAAGTAAGGA
.721  CACCACACGTGTTGATTGGTGGATGTGGGGTGGTATGATGGTGGTATGATCGTACCTTATTAGGAATGTAACAGACGGGT
.801  CTCGCAAGGATTGGATAGACTACTCAGTTCCGCATAGCAGAGATATTGTATTTAAGTGCCTAGCTCGACACAATAAACGC
.881  CATTTTACCTTCCACCACA
```

B/ Sequence of 899 nucleotides at the 3' end of the AEV genome, including the 3' end of v-erb B (italic letters), δ env (uppercase letters), the 3' untranslated region (small letters), U3 (boldface letters), R (boldface italic characters). The polypurine tract (position 629), the "TATA box" (position 849) and the polyadenylation signal (position 872) are underlined.

Références 1) Arrigo, S. and al.(1987) Mol. Cell Biol. 7, 388-397. 2) Debuire, B. and al. (1984) Science, 224, 1456-1459. 3) Katz, R.A. and al. (1986) J. Virol. 595, 163-167.

 © IRL Press Limited, Oxford, England.