Volume 17 Number 24 1989 Nucleic Acids Research

Nucleotide and deduced amino acid sequence of sheep serum albumin

W.M.Brown, K.M.Dziegielewska, R.C.Foreman and N.R.Saunders

Department of Physiology and Pharmacology, The University of Southampton, Bassett Crescent East, Southampton SO9 3TU, UK

Submitted November 13, 1989 EMBL accession no. X17055

Using a rabbit anti-sheep albumin antiserum (1) and Superscreen reagents (Amersham International PLC) a clone encoding part of sheep albumin was isolated from a fetal sheep liver cDNA library in lambda gt11. This clone was used to screen a further fetal sheep liver library in lambda gt10. A full length clone was isolated and was sequenced by the method of Sanger et al (2). It contains an open reading frame spanning 1824 nucleotides which encodes a 607 amino acid protein including a 18 residue signal peptide and a 6 residue propeptide. The deduced protein sequence is greater than 90% identical to bovine serum albumin (3).

```
                                                M K W V T F I S L L L L F S S A Y S R G V F R
GAATTCCTTTTTTTTCTTTTCTATCAACCCCACAAACCTTTGGCACAATGAAGTGGGTGACTTTTATTTCCCTTCTCCTTCTCTTCAGCTCTGCTTATTCCAGGGGTGTGTTTCGTC

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

V K L V K E L T E F A K T C V A D E S H A G C D K S L H T L F G D E L C K V A T
TAAAATTAGTGAAGGAGCTAACTGAGTTTGCAAAAACATGTGTTGCTGATGAGTCACATGCCGGTTGTGATAAGTCACTTCACACTCTCTTTGGAGATGAATTGTGTAAAGTTGCAACCC

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

D T L C A E F K A D E K K F W G K Y L Y E V A R R H P Y F Y A P E L L Y Y A N K
ATACTTTGTGTGCCGAGTTTAAGGCAGATGAAAAGAAGTTTGGGGAAAATACCTATACGAAGTTGCCAGAAGACATCCCTACTTTTATGCACCAGAACTCCTTTACTATGCTAATAAAT

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

A S I Q K F G E R A L K A W S V A R L S Q K F P K A D F T D V T K I V T D L T K
CCAGTATTCAAAAATTCGGAGAAAGAGCTTTAAAAGCATGGTCAGTAGCTCGCCTGAGCCAGAAATTTCCCAAGGCTGACTTTACAGATGTTACCAAGATAGTGACAGATCTCACTAAGG

V H K E C C H G D L L E C A D D R A D L A K Y I C D H Q D A L S S K L K E C C D
TCCACAAGGAGTGTTGCCATGGTGACCTGCTTGAATGCGCAGACGACAGGGCAGATCTTGCCAAGTACATATGTGATCATCAGACGCACTCTCCAGTAAACTGAAGGAATGCTGTGATA

K P V L E K S H C I A E V D K D A V P E N L P P L T A D F A E D K E V C K N Y Q
AGCCTGTGTTGGAAAAATCCCACTGCATTGCTGAGGTAGATAAAGATGCCGTGCCTGAAACCTGCCCCCATTAACTGCTGACTTTGCTGAAGATAAGGAGGTTTGCAAAAACTATCAGG

E A K D V F L G S F L Y E Y S R R H P E Y A V S V L L R L A K E Y E A T L E D C
AAGCAAAAGACGTCTTCCTGGGCTCGTTTTTGTATGAATATTCAAGAAGGCATCCTGAGTATGCTGTCTCAGTGCTATTGAGACTTGCCAAGGAATATGAGCCACACTGGAGGACTGCT

C A K E D P H A C Y A T V F D K L K H L V D E P Q N L I K K N C E L F E K H G E
GTGCCAAAGAAGATCCACATGCCTGCTATGCCACAGTGTTTGACAAACTTAAGCATCTTGTGGATGAGCCTCAGAATTTAATCAAAAAAAACTGTGAGCTATTCGAAAAACATGGAGAGT

Y G F Q N A L I V R Y T R K A P Q V S T P T L V E I S R S L G K V G T K C C A K
ATGGATTCCAAAATGCGCTCATAGTTCGTTACACCAGGAAAGCACCCCAAGTGTCAACTCCAACTCTGGTGGAGATTTCAAGAAGCCTAGGAAAAGTGGGCACTAAGTGTTGTGCAAAGC

P E S E R M P C T E D Y L S L I L N R L C V L H E K T P V S E K V T K C C T E S
CTGAATCAGAAAGAATGCCCTGTACCGAAGACTATCTGAGCTTGATCCTGAACCGGTTGTGCGTGTTGCATGAGAAGACACCAGTGAGTGAAAAAGTCACCAAGTGCTGCACGGAGTCAT

L V N R R P C F S D L T L D E T Y V P K P F D E K F F T F H A D I C T L P D T E
TGGTGAACAGACGGCCATGTTTCTCTGATCTGACACTTGACGAAACATATGTACCCAAACCCTTCGATGAGAAATTTTTCACCTTCCATGCAGATATATGCACACTTCCTGATACTGAGA

K Q I K K Q T A L V E L L K H K P K A T D E Q L K T V M E N F V A F V D K C C A
AACAAATCAAGAAACAAACTGCACTTGTTGAGCTGTTGAAACACAAGCCCAAGGCAACAGATGAACACTGAAAACCGTTATGGAGAATTTTGTGGCTTTTGTAGACAAGTGCTGTGCAG

A D D K E G C F V L E G P K L V A S T Q A A L A *
CTGATGACAAAGAAGGCTGCTTTGTTCTGGAGGGTCCAAAACTTGTTGCTTCAACTCAAGCAGCCTTAGCCTAAACACGACACAACCACAAGCATCTCAGCCTACCCTGAGAGTGAGACG

AAAAAAGAGAAATGAAAACTCAGAGCTTATTCATCTGTTCTTCTTTTCGGGTGTTGGTGTTAAACCTACACCCTCTCTAAAGAACATAAATTTCTTTAAATATTTTGCTTCTTTTGTTTG
TGCTACAATTAATAAAAATGAAAAGACTCTAAAAAAAAAAAAAAAGGAATTC
```

Acknowledgements

This work was supported by grants from The Wellcome Trust and Action Research for the Crippled Child.

References

1. Dziegielewska K. M., Evans C. A. N., Fossan G., Lorscheider F. L., Malinowska, D. H., Mollgard K., Reynolds M. L., Saunders N. R. & Wilkinson S. (1980) J. Physiol. **300** : 441-455
2. Sanger F., Nicklen S. & Coulson A. R. (1977) Proc. Natl. Acad. Sci. USA **74** : 5463-5467.
3. Brown J. R. & Shockley P. (1982), in Lipid-Protein Interactions. Eds. P. Jost & O. H. Griffith (Wiley, New York) Vol. 1, pp25-68.

©IRL Press