

Nucleotide sequence of a cDNA clone encoding leghemoglobin III (LbIII) from *Medicago sativa*

György B.Kiss, Zoltán Végh and Éva Vincze

Institute of Genetics, Biological Research Center of the Hungarian Academy of Sciences, H-6701 Szeged, PO Box 521, Hungary

Submitted March 23, 1987

Accession no. Y00134

Nodule poly(A)⁺ mRNA of *Medicago sativa* L. Cardinal inoculated with *Rhizobium meliloti* 41 (AK 631) was used to construct a cDNA library in a lambda phage vector 1149 (1). Nodule specific sequences were isolated after differential hybridization using labelled nodule and root poly(A)⁺ mRNA probes. A cDNA clone, which hybridized also to a Lb cDNA insert (pPsLb101) from *Pisum sativum* (2) was sequenced using the chain termination method (3). The sequence of 581 bp is presented below. The deduced amino acid sequence showed homology to Lb-s from different legumes (4, 5, 6) and most resembled LbIII of *Medicago sativa* (7).

```

1. CAAAAAGAAGAAGAGAGATATGGGTTTCACAGATAACAAGAGGCTTTAGTGAATAGCTCATGGGAATC
      M G F T D K Q E A L V N S S W E S
70. ATTTAAACAAAACCCTGGTAATAGTGTITTTGTTCTACACTATAATATTGGAGAAAGCCCTGCAGCAAA
      F K Q N P G N S V L F Y T I I L E K A P A A K
139. GGGCATGTTCTCTTTCTTAAGGACTCAGCTGGAGTACAGGATAGCCCTAAACTCCAAAGCCATGCTGA
      G M F S F L K D S A G V Q D S P K L Q S H A E
208. AAAAGTTTTGGAATGGTCCCGATTACAGCTG CTCAACTCCGAGCAACAGGAGGAGTAGTTTTGGGAGA
      K V F G M V R D S A A Q L R A T G G V V L G D
277. TGCTACATTGGGTGCAATCCACATTCAGAAAGGAGTTGTTGATCCTCATTTTGGCGTGGTTAAAGAAGC
      A T L G A I H I Q K G V V D P H F A V V K E A
346. TCTGCTGAAAACAATAAAGGAAGTATCAGGAGATAAATGGAGCGAAGAATTGAACACTGCTTGGGAAGT
      L L K T I K E V S G D K W S E E L N T A W E V
415. AGCCTATGATGCATTGGCAACTGCAATTAAGAAGGCAATGGTTTAAATTTGGGATGATCTATAGTTATT
      A Y D A L A T A I K K A M V ...
484. ACGCAATTTAATAAATAAAAAATGATTACTAAAACCTGTTTAAACAAGTTTCTATAATAAATGTTGTTG
553. AAATGACTATTAATATTATTGGAATAGA

```

ACKNOWLEDGEMENTS: We wish to thank Drs. Zsuzsanna Schwarz-Sommer and Hans Sommer for their help in constructing the cDNA clone bank in the Max Planck Institut für Züchtungsforschung, Köln, Germany.

REFERENCES

- Schwarz-Sommer, Zs. et al. (1985) *EMBO J.* 4: 591-597.
- Govers, F. et al. (1986) *Nature* 323: 564-566.
- Sanger, F. et al. (1977) *Proc. Natl. Acad. Sci. USA* 74: 5463-5467.
- Lehtovaara, P. et al. (1980) *Biochim. Biophys. Acta* 623: 98-106.
- Brisson, N. and Verma, D.P.S. (1982) *Proc. Natl. Acad. Sci. USA* 79: 4055-4059.
- Hyldig-Nielsen, J.J. et al. (1982) *Nucl. Acids Res.* 10: 689-701.
- Jing, Y. et al. (1982) *Plant Science Letters* 25: 119-132.