



**IV Iberian Congress on Biotechnology**  
**I Ibero-American Meeting on Biotechnology**

# **BIOTEC'98**

## **BOOK OF ABSTRACTS**

**Edited by**

**MANUEL MOTA and EUGÉNIO C. FERREIRA**

**IV Iberian Congress on Biotechnology  
I Ibero-American Meeting on Biotechnology**

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**Edited by**  
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This volume contains abstracts presented at the IV Iberian Congress on Biotechnology, I Ibero-American Meeting on Biotechnology, from 12 to 15 July 1998 at the Universidade do Minho in Guimarães, Portugal.

The event was sponsored by:

*British Council*

*EXPO'98*

*Fundação Luso-Americana para o Desenvolvimento*

*Fundação para a Ciência e Tecnologia*

*Governo Civil do Distrito de Braga*

*Instituto do Vinho do Porto*

*Sociedad Española de Biotecnología*

*Sociedade Portuguesa de Biotecnologia*

*Universidade do Minho*

**título:** BIOTEC'98 - Book of Abstracts  
edited by Manuel Mota and Eugénio C. Ferreira

**edição:** 1ª edição, Julho de 1998  
ISBN: 972-97810-0-1  
Depósito legal: #####/98  
Tiragem: 600 exemplares

**publicado por:** Departamento de Engenharia Biológica, Universidade do Minho  
Campus de Gualtar, 4700 Braga, Portugal

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## Isolation, characterization and expression of genes encoding enzymes with lipase activity in *Yarrowia lipolytica*

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**Keywords:** yeast, lipases

*Yarrowia lipolytica* is a dimorphic yeast with very high secretory capacities and able to grow in alkanes and fatty acids as the sole carbon source. Using PCR, we have isolated two DNA fragments that after sequencing show homology with fungal lipases. By genomic DNA subcloning, we have isolated a gene nominated *YLIP1* located on *Y. lipolytica* chromosome IV. The gene presents an ORF of 1458 bp which encodes a putative protein of 486 amino acids with an apparent molecular weight of 55.4 kDa. The nucleotide sequence of the 5' and 3' ends shows the consensus signals for translation initiation and transcription termination motifs in the yeast.

A disruption of *YLIP1* has been performed. The deleted  $\Delta Ylip1$  strain shows lower lipase activity in comparison to the wild type.

The DNA encoding YLip1p was expressed in *Saccharomyces cerevisiae* and *Kluyveromyces lactis*. Both yeast species are able to synthesize a functional enzyme under the control of *GALI* promoter.

We are currently isolating the second gene, both in the wild type and in the  $\Delta Ylip1$  strain.