

## CURRICULUM VITAE

**NAME** Rafael Vicuña  
**CITIZENSHIP** Chilean  
**DATE OF BIRTH** September 12, 1949

**PRESENT POSITION AND ADDRESS:** Full Professor and Dean. Faculty of Biological Sciences, Pontificia Universidad Católica de Chile. P.O. Box 114-D, Santiago, Chile. Phone: (562) 686 2673; fax: (562) 354 2369; e-mail: rvicuna@bio.puc.cl

**DEGREES:** Biochemist (equivalent to an MS), Faculty of Chemical Sciences, Universidad de Chile, 1972. MS (1976) and PhD (1978) in Molecular Biology, Albert Einstein College of Medicine, New York, USA.

### **ACADEMIC ADMINISTRATION** (at P. Universidad Católica de Chile).

a) At the School of Biological Sciences:

- Member of the School's Council, elected by the faculty (1988-1989, 1991-1993, 1993-1995, 1995-1997, 1997-1999 and 1999-2000).
- Head Laboratory of Biochemistry (1991-1994).
- President of the faculty's Evaluation Committee (1997-2006).
- Dean (July 2006 to date)

b) At the overall level in the University:

- Dean of Research (1980-1983 y 1986-1988).
- Director General for Academic Affairs (1983-1986).
- Vice President for Academic Affairs (1989-1991).

### **RESPONSABILITIES IN PUBLIC POLICIES OF EDUCATION AND SCIENCE**

- Vice President, Science and Technology Committee of the President's Council of Chilean Universities, 1980-1983.
- Member of CONICYT's Advisory Committee, 1985-1986. (CONICYT is the Chilean equivalent to the National Science Foundation in the USA).
- Member of the National Committee on Biotechnology, 1985-1990.
- Member of the board of Fundación DUOC (an institution of technical education with 35,000 students), since 1988.
- Member of the Committee that designed the National Plan for Science and Technology, 1987.
- Member of the board of Instituto Libertad y Desarrollo (an institution devoted to the analysis of public policies), since 1992.
- Member of the organizing committee of the Fourth (Raleigh, NC, 1989), Fifth (Kyoto, 1992), Sixth (Vienna, 1995), Seventh (Vancouver, 1998), Eighth (Helsinki, 2001), Ninth (South Africa, 2004) and Tenth (Madison, WI, 2007) International Conference Biotechnology in the Pulp and Paper Industry.
- Member of the committee that elaborated new guidelines for enacting a new law for science and technology in the country (2001).

- Member of the committee appointed by the President of Chile to elaborate a national plan for the development of biotechnology in the country (2002-2003).
- International referee for the New Zealand Centres of Research of Excellence Fund, 2001-2002.
- Advisor to the Minister of Agriculture in biotechnologies applied to farming and forestry (2007)

### **CONSULTANCIES AND LINKS TO INDUSTRY**

- Consultant in academic policies to several Chilean universities.
- Advisor in science policies to INTEC, Dominican Republic, at Santo Domingo, 1985-1986.
- Consultant in biotechnology to several companies, since 1987.
- President of the Biotechnology Committee of the European Community-Chile Business Foundation, 1993-1996.
- Consultant in biotechnology to CONICYT, Uruguay, at Montevideo, 1993-1994.
- Consultant to the law firm Pennie and Edmonds from New York in the following cases dealing with the patent of Taq DNA polymerase: a) Civil Action N° C-93-1748 between Hoffmann La Roche Inc. *versus* Promega Corporation. Since 1994, six written declarations and two depositions in the USA; b) A written declaration in 1997 on behalf of Hoffmann La Roche AG in support of its response to the oppositions filed by Appligene-Oncor SA, Bioline LTD. and Angewandte Gentechnologie System GmbH to the European patent 89902422.8; c) A written declaration in 2000 on behalf of Hoffmann La Roche in the appeal of New England Biolabs to the Australian patent application N° 632857.
- During 1999, expert in the case of Genetics Institute Inc *versus* Bio Sidus (Argentina) and Laboratorios Andrómaco (Chile) concerning the patent for the production of human erythropoietin using recombinant DNA techniques.
- Member of the Board (2003-2006) and Chairman of the Social Responsibility Committee (2005 to date), Chilean Tobacco Company.
- Member of the scientific committee of the Foundation of Fruit Development, an entrepreneurial organization, since 2004

### **FELLOWSHIPS**

- Fulbright Foundation. Travel fellowship in 1974 and 1978.
- Albert Einstein College of Medicine, NY, fellowship for PhD studies, 1974-1978.
- International Union of Biochemistry. Travel fellowship in 1979.
- John Simon Guggenheim Memorial Foundation fellowship in 1986. One month stay at the Department of Biology, University of California, San Diego, and four month stay at the Institute of Enzyme and Microbial Technology, Forest Products Laboratory, Madison, Wisconsin.

### **MEMBERSHIP AND ROLES IN SCIENTIFIC ORGANIZATIONS**

- Chilean Society of Biology, since 1973.
- Chilean Society of Biochemistry and Molecular Biology, since 1973 (President, 1997-1999).
- American Society for Microbiology, since 1984.
- Association for Politics and the Life Sciences, USA, since 1987.
- Technical Association of the Pulp and Paper Industry, TAPPI USA, since 1988.

- The Academy for the Developing World (TWAS), since 1993. (Member of the committee that evaluates applicants throughout the world in the fields of Biochemistry and Biophysics, 1999 to date)
- The Chilean Society of Microbiology, since 1996.
- The International Academy of Wood Science (IAWS), since 1996.
- The Latin American Academy of Sciences, since 1999.
- The Chilean Academy of Sciences, since 1999 (Vice President, 2001-2004).
- The Pontifical Academy of Sciences, since 2000.

## **TEACHING**

- At both undergraduate and graduate levels. Subjects covered include intermediary metabolism, DNA topology and replication, and microbial degradation of aromatic compounds.
- Supervised 13 theses at the PhD level and 26 theses at the MS level.

## **RESEARCH INTEREST** (see publications below)

- 1973-1974: biosynthesis of isoprenoids in plants.
- 1974-1985: enzymology of DNA replication in prokaryotic systems.
- 1985 to date: lignin biodegradation by bacteria and fungi.

## **MAJOR RESEARCH PROJECTS**

- PI in 5 projects financed by P. Universidad Católica de Chile (1978-1984).
- PI in 8 projects financed by FONDECYT (Chilean national fund for research) in the field of lignin biodegradation: 0140/84, two years; 1079/86, two years; 0218/88, three years, 0758/91, three years; 0649/94, three years; 1971239, three years; 1030495/03, four years and 1070588/07, three years).
- Collaborator in 4 projects financed by FONDECYT: 0130/85, 0454/88, 0824/90 and 8990004.
- Chilean counterpart in 4 projects financed by National Science Foundation in collaboration with Dr. Kent Kirk from the Forest Products Laboratory, Madison, Wisconsin, in the field of lignin biodegradation: NSF INT 8514058 1986-1988, NSF INT 8816265 1989-1991 and NSF INT 9121955 1992-1994, NSF INT 9414084 1995-1996.
- Bacterial metabolism of lignin. Grant from Celulosa Arauco y Constitución. 1985-1990. PI.
- Biological processes applied to the pulp industry. Grant from UNDP CHI/021/87. PI.
- Microbial degradation of lignin. Grant from the International Center of Genetic Engineering and Biotechnology (ICGEB). 1990-1992. PI.
- Biobleaching of Kraft pulp and biological elimination of lignin-derived organochlorides. FONDEF FI-17, 1992-1995. PI.
- Microbial bioremediation, phytoremediation and agricultural use of solid waste from the pulp and paper industry. FONDEF D9711012, 1997-2000. Co-PI.
- Studies on biopulping of radiata pine. FONDEF 97I-2032, 1998-2001, research collaborator.
- Senior investigator of the Millenium Institute of Fundamental and Applied Biology

## SCIENTIFIC PRESENTATIONS

- Since 1973, 82 at local meetings.
- 61 at meetings overseas: Arab Emirates: 1 (2002); Argentina: 5 (1985, 1990, 1995, 2000x2); Austria: 1 (1995); Brazil: 5 (1982, 1986, 1992, 2006, 2007); Canada: 2 (1978, 1998); China: 3 (1989, 1992, 2003); Cuba: 3 (1985, 1990, 2006); Dominican Republic: 1 (1986); Finland: 3 (1995, 2000, 2001); France: 2 (1987, 1988); Germany: 1 (1994); India: 1 (2002); Italy: 2 (1990, 1998); Japan: 3 (1992, 1993, 2008); Mexico: 1 (2002); New Zealand: 1 (2001); Norway: 1 (2002); Peru: 1 (1973); Portugal: 1 (1996); South Africa: 2 (2004); Spain: 1 (2005); Taiwan: 3 (1992, 1993, 2000); The Vatican: 7 (2000, 2001, 2002, 2003, 2004, 2006, 2008); Uruguay: 1 (1997); USA: 9 (1977, 1978, 1988, 1989, 1994, 1996, 1997, 2002, 2007); Venezuela: 1 (1996); This list does not include seminars.

## PUBLICATIONS

1. E. Cardemil, R. Vicuña, A. M. Jabalquinto, O. Cori. Separation of isoprenoid alcohols and aldehydes by thin layer chromatography. *Anal. Biochem.* **59**, 636-638, 1974.
2. O. Cori, E. Cardemil, L. Chayet, A. M. Jabalquinto, R. Vicuña, R. Devés. Biosynthesis of isoprenoids in plants: mechanisms of condensation y cyclazation. *Ciencia e Invest.* **30**, 95-99, 1974.
3. L. Chayet, C. Rojas, E. Cardemil. A. M. Jabalquinto, R. Vicuña, O. Cori. Biosynthesis of monoterpene hydrocarbons from 1-H<sup>3</sup> neryl pyrophosphate and 1-H<sup>3</sup> geranyl pyrophosphate by soluble enzymes from *citrus limonum*. *Arch. Biochem. Biophys.* **180**, 318-327, 1977.
4. R. Vicuña, J. Hurwitz, S. Wallace, M. Girard. Selective inhibition of *in vitro* DNA synthesis dependent on  $\phi$ X174 compared with fd DNA. I. Protein requirements for selective inhibition. *J. Biol. Chem.* **252**, 2524-2533, 1977.
5. R. Vicuña, J. Ikeda, J. Hurwitz. Selective inhibition of  $\phi$ X174 compared with fd RFII DNA synthesis *in vitro*. II. Resolution of the discrimination reaction in multiple steps. *J. Biol. Chem.* **252**, 2534-2544, 1977.
6. C. Yasumoto, J. Ikeda, E. Benz, K. Marians, R. Vicuña, S. Sugrue, L. Zapursky, J. Hurwitz. Replication of  $\phi$ X174 DNA: *in vitro* synthesis of  $\phi$ XRFI DNA and circular single stranded DNA. *Cold Spring Harbor Symp. Quant. Biol.* **XLIII**, 311-329, 1978.
7. E. Benz, D. Reinberg, R. Vicuña, J. Hurwitz. Initiation of DNA replication by the dna G protein. *J. Biol. Chem.* **255**, 1096-1106, 1980.
8. A. Venegas, R. Vicuña, A. Alonso, F. Valdés, A. Yudelevich. A rapid procedure for purifying a restriction endonuclease from *Thermus thermophilus* (TthI). *FEBS Lett.* **109**, 156-158, 1980.
9. R. Vicuña, F. Valdés, MA. Medina, A. Yudelevich. Deoxyribonucleic acid polymerase from the marine *Pseudomonas* BAL-31. *J. Bacteriol.* **142**, 249-253, 1980.
10. R. Vicuña. Enzymology of DNA replication. *Arch. Biol. Med. Exptl.* **13**, 113-232, 1980.
11. A. Alonso, M. A. Medina, R. Vicuña, A. Venegas, P. Valenzuela, A. Yudelevich. Molecular cloning and physical map of bacteriophage PM<sub>2</sub> DNA. *Gene* **13**, 115-118, 1981.
12. A. Alonso, E. Canelo, M. Zaldívar, A. Venegas, P. Valenzuela, R. Vicuña, A. Yudelevich. The genome of bacteriophage PM<sub>2</sub>: cloning, restriction endonuclease map and

- characterization of temperature sensitive mutants. In "Molecular approaches to gene expression and protein structure". Ed. M.A.Q. Siddiqui, M. Krauskopf, H. Weissbach. Academic Press, p 87-107, 1981.
13. R. Vicuña, O. Cori. Biochemistry in Chile. Trends in Biochemical Sciences **6** (9), III-IV, 1981.
  14. M. D. Eberhard, C. Vásquez, P. Valenzuela, R. Vicuña, A. Yudelevich. Physical characterization of a plasmid isolated from *Thermus thermophilus*. Plasmid **6**, 1-6, 1981
  15. A. Venegas, M. Motles, C. Vásquez, R. Vicuña. Conditions affecting DNA cleavage by TthI at a TthI endonuclease-dam methylase overlapping sequence. FEBS Lett. **130**, 272-274, 1981.
  16. C. Vásquez, A. Venegas, R. Vicuña. Characterization and cloning of a plasmid isolated from the extreme thermophile *Thermus flavus* AT-62. Biochem. Internatl. **3**, 291-299, 1981.
  17. C. Vásquez, R. Vicuña. The genus *Thermus*: restriction endonucleases and modification methylases. Arch. Biol. Med. Exptl. **15**, 417-421, 1982.
  18. C. Vásquez, E. Villanueva, R. Vicuña. Plasmid curing in *Thermus Thermophilus* and *Thermus flavus*. FEBS Lett. **158**, 339-342, 1983.
  19. B. González, C. Vásquez, P. Bull, R. Vicuña. Electron microscopy mapping of *E. coli* RNA polymerase binding sites on plasmids from thermophilic bacteria. DNA **3**, 251-257, 1984.
  20. C. Vásquez, B. González, R. Vicuña. Plasmids from thermophilic bacteria. Comp. Biochem. Physiol. **78B**, 507-514, 1984.
  21. B. González, J. Davagnino, R. Vicuña. Electron microscopic mapping of *Thermus thermophilus* RNA polymerase binding sites on plasmid pBR322. Comp. Biochem. Physiol. **80B**, 485-487, 1985.
  22. C. Rüttimann, M. Cotorás, J. Zaldívar, R. Vicuña. DNA polymerases from the extremely thermophilic bacterium *Thermus thermophilus* HB- 8. Eur. J. Biochem. **149**, 41-46, 1985.
  23. M. Goycoolea, D. Seelenfreund, C. Rüttimann, B. González, R. Vicuña. Monitoring bacterial consumption of low-molecular weight lignin derivatives by high-performance liquid chromatography. Enz. Microb. Technol. **8**, 213-216, 1986.
  24. B. González, A. Merino, M. Almeida, R. Vicuña. Comparative growth of natural bacterial isolates on various lignin-related compounds. Appl Environ. Microbiol. **52**, 1428-1432, 1986.
  25. M. Krauskopf, R. Pessot, R. Vicuña. Science in Latin America. How much and along what lines. Scientometrics **10**, 189-206, 1986
  26. C. Rüttimann, D. Seelenfreund, R. Vicuña. Metabolism of low molecular weight lignin related compounds by *Streptomyces viridosporus* T7A. Enz. Microb. Technol. **9**, 526-530, 1987.
  27. R. Vicuña, B. González, I. Olave, C. Rüttimann, A. Sapag, D. Seelenfreund. Degradation of lignin related substrates by natural bacterial isolates. Les Colloques de l' INRA 40, 231-236, 1987.
  28. R. Vicuña, B. González, M.D. Mozuch, K. Kirk. Metabolism of lignin model compounds of the arylglycerol- $\alpha$ -aryl ether type by *Pseudomonas acidovorans* D<sub>3</sub>. Appl. Environ. Microbiol. **53**, 2605-2609, 1987.
  29. B. González, I. Olave, I. Calderón, R. Vicuña. Degradation of diarylethane structures by *Pseudomonas fluorescens* biovar I. Arch. Microbiol. **149**, 389-394, 1988.

30. R. Vicuña. Bacterial degradation of lignin. *Enz. Microb. Technol.* **10**, 646-655, 1988.
31. R. Vicuña, B. González, C. Rüttimann, A. Sapag, D. Seelenfreund. Biochemical and genetic studies of bacteria metabolizing lignin-related compounds. *Arch. Biol. Med. Exp.* **21**, 247-255, 1988.
32. B. González, R. Vicuña. Benzaldehyde lyase from *Pseudomonas fluorescens* biovar I: a novel thiamine pyrophosphate-requiring enzyme. *J. Bacteriol.* **171**, 2401-2405, 1989.
33. D. Seelenfreund, R. Vicuña. Effect of *Streptomyces viridosporus* T7A on kraft lignin. *J. Ind. Microbiol.* **5**, 17-24, 1990.
34. D. Seelenfreund, C. Lapiere, R. Vicuña. Production of soluble lignin-rich fragments (APPL) from wheat lignocellulose by *Streptomyces viridosporus* T7A and their partial metabolism by natural bacterial isolates. *J. Biotechnol.* **13**, 145-158, 1990.
35. E. Espejo, R. Vicuña, E. Agosin. Catabolism of 1,2-diarylethane lignin model compounds by two brown rot fungi. *Arch. Microbiol.* **154**, 370-374, 1990.
36. B. González, R. Vicuña. Recent advances in studies on the bacterial degradation of lignin. *Arch. Biol. Med. Exptl.* **23**, 151-157, 1990.
37. R. Vicuña, B. González, L. Salas. Metabolism of lignin-related dimeric structures by *Pseudomonas fluorescens* biovar I, en "Biotechnology in Pulp & Paper Manufacture". Ed. K. Kirk, H-m. Chang. Butterworth Publishers, pag 505-512, 1990.
38. C. Ruttimann, R. Vicuña, M. Mozuch, K. Kirk. Limited mineralization of fungal degradation intermediates from synthetic lignin. *Appl. Environ. Microbiol.* **57**, 3652-3655, 1991.
39. C. Ruttimann, E. Schwember, L. Salas, D. Cullen, R. Vicuña. Ligninolytic enzymes of the white-rot basidiomycetes *Phlebia brevispora* and *Ceriporiopsis subvermispora*. *Biotechnol. Appl. Biochem.* **16**, 64-77, 1992.
40. R. Céspedes, L. Salas, I. Calderón, B. González, R. Vicuña. Microbial and biochemical characterization of a bacterial consortium isolated from decaying wood by growth on a □-O-4 lignin-related dimeric compound *Arch. Microbiol.* **158**, 162-171, 1992.
41. C. Ruttimann, L. Salas, R. Vicuña. Studies on the ligninolytic system of the white-rot fungus *Ceriporiopsis subvermispora*, en "Biotechnology in the Pulp & Paper Industry". Ed. M. Kuwahara and A. Shimada. UNI Publishers, Japan, pp 243-248, 1992.
42. R. Vicuña, B. González, D. Seelenfreund, C. Ruttimann, L. Salas. Ability of natural bacterial isolates to metabolize high and low molecular weight lignin-derived molecules. *J. Biotechnol.* **30**, 9-13, 1993.
43. C. Ruttimann-Johnson, L. Salas, R. Vicuña, T.K. Kirk. Extracellular enzyme production and synthetic lignin mineralization by *Ceriporiopsis subvermispora*. *Appl. Environ. Microbiol.* **59**, 1792-1797, 1993.
44. P. Hinrichsen, R. Vicuña. Possible initial steps in the catabolism of 1,2-diphenylethanone (deoxybenzoin) by *Pseudomonas fluorescens* DB-5. *Appl. Environ. Microbiol.* **59**, 3477-3479, 1993
45. P. Hinrichsen, I. Gómez, R. Vicuña. Cloning and sequencing of the gene encoding benzaldehyde lyase from *Pseudomonas fluorescens* biovar I. *Gene* **144**, 137-138, 1994.
46. S. Lobos, J. Larraín, L. Salas, D. Cullen, R. Vicuña. Isoenzymes of manganese-dependent peroxidase and laccase produced by the lignin-degrading basidiomycete *Ceriporiopsis subvermispora*. *Microbiology-UK* **140**, 2691-2698, 1994.
47. R. Vicuña. Biotechnology in Chile. *Biological Research* **27**, 11-14, 1994.

48. C. Salas, S. Lobos, J. Larraín, L. Salas, D. Cullen, R. Vicuña. Properties of laccase isoenzymes produced by the basidiomycete *Ceriporiopsis subvermispora*. *Biotechnol. Appl. Biochem.* **21**, 323-333, 1995.
49. R. Vicuña, E. Oyarzún, M. Osses. Assessment of various commercial enzymes in the bleaching of radiata pine kraft pulps. *J. Biotechnol.* **40**, 163-168, 1995.
50. J. Tapia, R. Vicuña. Synthetic lignin mineralization by *Ceriporiopsis subvermispora* is inhibited by an increase in the pH of the cultures resulting from fungal growth. *Appl. Environ. Microbiol.* **61**, 2476-2481, 1995.
51. R. Vicuña, M.C. Yeber, M. Osses. Bleaching of radiata pine Kraft pulp with the EnZone process. *J. Biotechnol.* **42**, 69-73, 1995.
52. U. Urzúa, L. F. Larrondo, S. Lobos, J. Larraín, R. Vicuña. Oxidation reactions catalyzed by manganese peroxidase isoenzymes from *Ceriporiopsis subvermispora*. *FEBS Lett.* **371**, 132-136, 1995
53. R. Vicuña, J. Larraín, S. Lobos, C. Salas, L. Salas. Culture conditions of *Ceriporiopsis subvermispora* determine the pattern of MnP isoenzymes, in "Biotechnology in the Pulp & Paper Industry: Recent Advances in Applied and Fundamental Research". Ed. E. Srebotnik and K. Messner. *Facultas-Universitätsverlag, Austria*, pp 345-350, 1996.
54. S. Rajakumar, J. Gaskell, D. Cullen, S. Lobos, E. Karahanian, R. Vicuña. *lip*-Like genes in *Phanerochaete sordida* and *Ceriporiopsis subvermispora*, fungi lacking lignin peroxidase activity. *Appl. Environ. Microbiol.* **62**, 2660-2663, 1996.
55. R. Céspedes, B. González, R. Vicuña. Characterization of a bacterial consortium degrading the lignin model vanillyl- $\beta$ -D-glucopyranoside. *J. Basic Microbiol.* **37**, 175-180, 1997.
56. R. Vicuña, F. Escobar, M. Osses, A. Jara. Bleaching of eucalyptus Kraft pulps with commercial enzymes. *Biotechnol. Lett.* **19**, 575-578, 1997.
57. U. Urzúa, P. Kersten, R. Vicuña. Manganese peroxidase-dependent oxidation of glyoxylic and oxalic acids synthesized by *Ceriporiopsis subvermispora* produces extracellular hydrogen peroxide. *Appl. Environ. Microbiol.* **64**, 68-73, 1998.
58. S. Lobos, L. Larrondo, L. Salas, E. Karahanian, R. Vicuña. Cloning and molecular analysis of a cDNA and the *Cs-mnp1* gene encoding a manganese peroxidase isoenzyme from the lignin-degrading basidiomycete *Ceriporiopsis subvermispora*. *Gene* **206**, 185-193, 1998.
59. M. Canales, S. Lobos, R. Vicuña. Molecular modeling of manganese peroxidase from the lignin-degrading fungus *Ceriporiopsis subvermispora* and structural comparison with other peroxidases. *Electr. J. Biotechnol.* <http://www.ejb.org> vol **1** (2), August 15, 1998.
60. U. Urzúa, P. Kersten, R. Vicuña. Kinetics of Mn<sup>3+</sup>-oxalate in reactions catalyzed by manganese peroxidase of *Ceriporiopsis subvermispora*. *Arch. Biochem. Biophys.* **360**, 215-222, 1998.
61. E. Karahanian, G. Corsini, S. Lobos, R. Vicuña. Structure and expression of a laccase gene from the ligninolytic basidiomycete *Ceriporiopsis subvermispora*. *Biochim. Biophys. Acta* **1443**, 65-74, 1998.
62. C. Aguilar, U. Urzúa, C. Koenig, R. Vicuña. Oxalate oxidase from *Ceriporiopsis subvermispora*: biochemical and cytochemical studies. *Arch. Biochem. Biophys.* **366**, 275-282, 1999.

63. M. Tello, G. Corsini, L. F. Larrondo, L. Salas, S. Lobos, R. Vicuña. Characterization of three new manganese peroxidase genes from the ligninolytic basidiomycete *Ceriporiopsis subvermispora*. *Biochim. Biophys. Acta* **1490**, 137-144, 2000.
64. R. Vicuña. Ligninolysis: a very peculiar microbial process. *Molec. Biotechnol.* **14**, 173-176, 2000.
65. L. Larrondo, S. Lobos, P. Stewart, D. Cullen, R. Vicuña. Isoenzyme multiplicity and characterization of recombinant manganese peroxidases (rMnPs) from *Ceriporiopsis subvermispora* and *Phanerochaete chrysosporium*. *Appl. Environ. Microbiol.* **67**, 2070-2075, 2001.
66. M. Tello, D. Seelenfreund, S. Lobos, J. Gaskell, D. Cullen, R. Vicuña. Isolation and characterization of homokaryotic strains from the ligninolytic basidiomycete *Ceriporiopsis subvermispora*. *FEMS Microb. Lett.* **9914**, 1-6, 2001.
67. S. Lobos, M. Tello, R. Polanco, L. Larrondo, A. Manubens, L. Salas, R. Vicuña. Enzymology and molecular genetics of the ligninolytic system of the basidiomycete *Ceriporiopsis subvermispora*. *Curr. Sci.* **81**, 992-997, 2001.
68. R. Polanco, S. Lobos, R. Vicuña. Binding of nuclear proteins to the promoter region of the laccase gene *Cs-lcs1* from the basidiomycete *Ceriporiopsis subvermispora*. *Enzyme Microb. Technol.* **30**, 525-528, 2002.
69. F. Bastidas, U. Urzúa, R. Vicuña. Oxidation of kojic acid catalysed by manganese peroxidase from *Ceriporiopsis subvermispora* in the absence of hydrogen peroxide. *Appl. Biochem. Biotechnol.* **101**, 31-40, 2002.
70. R. Vicuña. The responsibility of scientists in the education of young people, en "The challenges for science: education for the twenty-first century". *Scripta Varia* **104**, Vatican City, pp. 197-208, 2002.
71. L. Larrondo, M. Avila, L. Salas, D. Cullen, R. Vicuña. Heterologous expression of laccase cDNA from *Ceriporiopsis subvermispora* yields copper activated apoprotein and complex isoform patterns. *Microbiology UK* **149**, 1177-1182, 2003.
72. A. Manubens, M. Avila, P. Canessa, R. Vicuña. Differential regulation of genes encoding manganese peroxidase (MnP) in the basidiomycete *Ceriporiopsis subvermispora*. *Current Genetics* **43**, 433-438, 2003.
73. L. Larrondo, L. Salas, F. Melo, R. Vicuña, D. Cullen. A novel extracellular multicopper oxidase with ferroxidase activity in *Phanerochaete chrysosporium*. *Appl. Environ. Microbiol.* **69**, 6257-6263, 2003.
74. R. Vicuña. Science never ends: a new paradigm is being born in biology. *Scripta Varia* **105**, Vatican City, pp. 267-277, 2003.
75. M. Stuardo, M. Vásquez, R. Vicuña, B. González. Molecular approach for analysis of model fungal genes encoding ligninolytic peroxidases in wood-decaying soil systems. *Lett. Appl. Microbiol.* **38**, 43-49, 2004.
76. R. Vicuña, A. Serani-Merlo. Chance or design in the origin of living beings: an epistemological point of view, en "Life in the Universe: from the Miller experiment to the search for life on other worlds" Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Vol. 7. Seckbach, J.; Chela-Flores, J.; Owen, T.; Raulin, F. (Eds.) Kluwer Academic Publishers, pp 341-344, 2004.

77. L. Larrondo, B. González, D. Cullen R. Vicuña. Characterization of a multicopper oxidase gene cluster in *Phanerochaete chrysosporium* and evidence of altered splicing of the *mco* transcripts. *Microbiology* **150**, 2775-2783, 2004.
78. M. Stuardo, L.F. Larrondo, M. Vásquez, R. Vicuña, B. González. Incomplete processing of peroxidase transcripts in the lignin degrading fungus *Phanerochaete chrysosporium*. *FEMS. Microbiol. Lett.* **242**, 37-44, 2005.
79. M. R. Escutia, L. Bowater, A. Edwards, A. R. Bottrill, M. Burrell, R. Polanco, R. Vicuña, S. Bornemann. Cloning and sequencing of two *Ceriporiopsis subvermispora* bicupin oxalate oxidase allelic isoforms: implications for the reaction specificity of oxalate oxidases and decarboxylases. *Appl. Environ. Microbiol.* **71**, 3608-3616, 2005
80. L. Larrondo, A. Gonzalez, T. Perez-Acle, D. Cullen,, R. Vicuña. The *nop* gene from *Phanerochaete chrysosporium* encodes a peroxidase with novel structural features. *Biophys. Chem.* **116**, 167-173, 2005.
81. L. Larrondo, R. Vicuña, D. Cullen. *Phanerochaete* genomics. *Appl. Mycol. Biotechnol.* **5**, Genes and Genomics Chapter **14**, 315-352, 2006.
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