

Lars G. Ljungdahl, abbreviated c.v.

Date and place of birth: August 5, 1926, Stockholm, Sweden. US. Citizen, 1969

**Education:**

1943 Diploma, Stockholm City Technical

1945 B.S. (equivalent), Stockholm Technical Institute, Chemical Engineering

1964 Ph.D, Case Western Reserve University, Cleveland, Ohio

**Positions Held:**

1943-46, Karolinska Institutet: Dept. of Biochemistry; Stockholm, Sweden;  
Technician

1947-58, Stockholm, Brewery Company; Stockholm, Sweden; Research Chemist.

1958-67, Case Western Reserve University, Department of Biochemistry,  
Cleveland, Ohio: 58-graduate studies with Dr. Harland G. Wood,  
64-Senior Instructor, 66-Assistant Professor.

1967-present University of Georgia, Department of Biochemistry, Athens,  
Georgia: 67-Assistant Professor, 69-Associate Professor; 75-  
Professor; 05-Professor Emeritus. Adjunct position in Department  
of Microbiology.

1974-75, Visiting Professor; Institut für Mikrobiologie der Universität Göttingen,  
Göttingen, Germany.

1982-83. Visiting Scientist, Swedish Forest Products Research Laboratory,  
Stockholm, Sweden.

1983-2005, Georgia Power Distinguished Professor of Biotechnology, University of  
Georgia, Athens, Georgia.

1994-2001, Director, Georgia Biotechnology Center of the Georgia Research  
Alliance

**Honors:**

1974, Recipient of Humboldt Preis for Research and Teaching" from Alexander  
von Humboldt Stiftung, Bonn-Bad Godesberg, Germany.

1982, Research Grant from the Swedish Board of Energy to work at the Swedish  
Forest Product Research Laboratory, Stockholm, Sweden.

1984-85, American Society for Microbiology Foundation Lecturer.

1987, Elected Foreign Member of the Royal Swedish Academy of Engineering  
Sciences.

1993, *Clostridium ljungdahlii*. A new acetogenic bacterium named in recognition  
of Lars G. Ljungdahl (*Inst. J. Syst. Bacteriol.* **43**:232-236).

1994, Recipient of Lamar Dodd Award given at the University of Georgia for  
outstanding body of scholarly or creative activities in the sciences.

1994, Elected Fellow of the American Academy of Microbiology.

1995, Elected Fellow of the American Association of Advancement of Science

**Selected Publications.**

Kataeva, I.A., Blum, D.L., Li, X.-L., and Ljungdahl, L. G. (2001). Do domain  
interactions of glycosyl hydrolases from *Clostridium thermocellum*  
contribute to protein thermostability? *Protein Engineering.* **14**:167-172.

Das, A., Coulter, E.D., Kurtz, Jr., D.M., and Ljungdahl, L.G. (2001) A five gene  
cluster in *Clostridium thermoaceticum* encoding rubrerythrin, rubredoxin

- oxidoreductase, rubredoxin, type A flavoprotein, and a high molecular weight rubredoxin. *J. Bacteriol.* **183**:1560-1567.
- Steenbakkens, P.J.M., Li, X.-L., Ximenes, E.A., Arts, J.G., Chen, H., Ljungdahl, L.G., and Op den Camp, H.J.M. 2001. A dockerin-PCR-based strategy to isolate cellulosomal components of anaerobic fungi. *J. Bacteriol.* **183**:5325-5333.
- Schubot, F.D., Kataeva, I.A., Blum, D.L., Shah, A.K., Ljungdahl, L.G., Rose, J.P., and Wang, B.C. 2001. Structural basis for the substrate specificity of the feruloyl esterase domain of the cellulosomal xylanase Z of *Clostridium thermocellum*. *Biochemistry* **40**:12524-12532.
- Kataeva, I.A., Seidel III, R.D., Shah, A., West L.T., Li X.-L., and Ljungdahl, L.G. 2002. The fibronectin Type 3-like repeat from the *Clostridium thermocellum* cellobiohydrolase CbhA promotes hydrolysis by modifying its substrate. *Appl. Environ. Microbiol.* **68**:4292-4300.
- Silaghi-Dumitrescu, R., Coulter, E.D., Das, A., Ljungdahl, L.G., Philips, R.S., Jameson, G.N.L., Huynh, B.H., and Kurtz Jr., D.M. 2003. A flavo-iron protein (FprA) and high-molecular weight rubredoxin (Hrb) from *Morella thermoacetica* with nitric oxidase activity. *Biochemistry* **42**:2806-2815.
- Chen, H., Li, X.-L., Blum, D.L., Ximenes, E.A., and Ljungdahl, L.G. 2003. CelF of *Orpinomyces* PC-2 has an intron and encodes a cellulase (CelF) containing a carbohydrate-binding module. *Applied Biochemistry and Biotechnology*. **108**:775-786...
- Schubot, F.D., Kataeva I.A., Chang J., Shah A.K., Ljungdahl L.G., Rose J.P., and Wang B.-C. 2004, Structural basis for the exocellulase activity of the cellobiohydrolase CbhA from *Clostridium thermocellum*. *Biochemistry* **43**:1163-1170.
- Li, X.-L., Ljungdahl L.G., Ximenes E.A., Chen H., Felix C.R., Cotta M.A., and Dien B.S. 2004.. Properties of a recombinant  $\beta$ -glucosidase from polycentric anaerobic fungus *Orpinomyces* PC-2 and its application for cellulose hydrolysis. *Appl. Biochem. Biotech.* **113**:233-250.
- Kataeva I.A., Uversky V.N., Brewer J.M., Schubot F., Rose J.P., Wang, B.-C., and Ljungdahl L.G. 2004 Interactions between immunoglobulin-like and catalytic modules in *Clostridium thermocellum* cellulosomal cellobiohydrolase CbhA. *Protein Engineering Design & Selection* **17**:759-769
- Ximenes, E.A., Chen, H., Kataeva, I.A., Cotta, M.A., Felix, C.R, Ljungdahl, L.G., and Li, X.-L. 2005. A mannanase, ManA, of the polycentric anaerobic fungus *Orpinomyces* sp. strain PC-2 has carbohydrate binding and docking modules. *Can. J. Microbiol.* **51**:1-10.
- Kataeva, I.A., Brewer, J.M., Uversky, V.N., and Ljungdahl, L.G. 2005. Domain coupling in a multimodular cellobiohydrolase CbhA from *Clostridium thermocellum*. *FEBS Lett.* **579**:4367-4343
- Chen H., Hopper S.L., Li X.-L., Ljungdahl L.G., and Cerniglia C.E. 2006. Isolation of extremely AT-rich genomic DNA and analysis of genes encoding carbohydrate-degrading enzymes from the anaerobic fungus *Orpinomyces* sp. Strain PC-2. *Current Microbiol.* **XX**: 1-6.
- Ljungdahl L.G., Op den Camp H.J.M., Gilbert H.J., Harhangi H.R., Steenbakkens P.J.M., and Li X.-L. 2007. Cellulosomes of anaerobic fungi. In Uversky V., and

Kataeva I.A. (eds.) Cellulosome. Molecular Anatomy and Physiology of Proteins. pp. 271-303. Nova Science Publishers New York, N. Y.

Pierce E., Xie G., Barabote R.D., Saunders E., Han C.F., Detter J.C., Richardson P., Brettin T.S., Das A., Ljungdahl L.G., and S.W. Ragsdale. 2008. The complete genome sequence of *Moorella thermoacetica*. Environmental Microbiology. Submitted

**Statement of Interest:** One-carbon metabolism, energy generation, and carbon dioxide fixation by acetogenic bacteria, lignocellulose degradation by anaerobic fungi and thermophilic bacteria. function of glycosidic enzymes and cellulosomes.