

## RESUME

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### YUVAL SHOHAM

Born: 16/8/1953, Kibbutz Einat, Israel  
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Technion City, Haifa 32000 Israel  
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#### ACADEMIC DEGREES

1982 - 1987 Ph.D., Biochemical Engineering, M.I.T, Cambridge, MA, USA  
1981 - 1982 M.Sc (with honors), Microbiology, Tel Aviv University, Israel  
1977 - 1980 B.Sc (with honors), Biology, Tel Aviv University, Israel

#### ACADEMIC APPOINTMENTS

2013- Dean, Faculty of Biotechnology and Food Engineering  
2010 - 2012 Director, The Lorry I. Lokey Interdisciplinary Center for Life Sciences and  
Engineering  
2009 - 2012 Deputy Executive Vice President for Research  
2008 - 2009 Deputy Dean, Faculty of Biotechnology and Food Engineering  
2004 - 2007 Director, The Otto Meyerhoff Minerva Center for Biotechnology  
2004 - 2007 Dean, Faculty of Biotechnology and Food Engineering  
2002 - 2003 Deputy Dean, Faculty of Food Engineering & Biotechnology  
2002 - The Erwin and Rosl Pollak Chair in Biotechnology  
2002 - Professor  
2001 - 2008 Head, The Interdepartmental Program in Biotechnology, Technion  
1997 - 2001 Associate Professor  
1992 - 1996 Senior Lecturer  
1988 - 1991 Lecturer, Dept. of Biotechnology and Food Engineering, Technion  
1983 - 1987 Research Assistant, Massachusetts Institute of Technology, Cambridge

#### RESEARCH INTERESTS

Structure-function and protein-engineering of glycoside hydrolases, esterases aminopeptidases and lipases  
Molecular characterization of the cellulosome complex from *Clostridium thermocellum*  
Gene regulation of hemicellulolytic and cellulolytic genes in *Geobacillus stearothermophilus* and *Clostridium thermocellum*  
Biotechnology of thermophiles and thermostable enzymes  
Biodegradation of lignocellulose and hemicellulose material for applications in the paper industry  
Biotransformations for the production of natural flavors and fragrances

#### TEACHING EXPERIENCE

1981 - 1982: Teaching Assistant, Tel Aviv University, Advanced Microbiology.  
1986 - 1987: Teaching Assistant, MIT, Laboratory in Applied Biology.  
1988 - Dept. of Food Engineering and Biotechnology, Technion.  
Undergraduate (U) and Graduate (G) courses:  
1) Molecular Biotechnology I (U)  
2) Process Biotechnology II (G/U)  
3) Biotechnology Laboratory,(U)  
4) Advanced Laboratory in Biochemical Engineering  
5) Downstream Processes in Biotechnology (U,G)

## TECHNION ACTIVITIES

2009 - 2012	Deputy Executive Vice President for Research
2010 - 2012	Director, The Lorry I. Lokey Interdisciplinary Center for Life Sciences and Engineering
2008-2010	Technion's Professional Committee for Promotion and Tenure
2003-2004	Technion's Committee for Promotion and Tenure
2002-2004	Technion's Patent Committee
2001-2008	Head, The Interdepartmental Program in Biotechnology
2004 - 2007	Director, The Otto Meyerhoff Minerva Center for Biotechnology
1997-2003	Scientific Director, Minerva Center for Biotechnology
1996-2001	Member of the Technion Computer Committee
1996-	Member of the Technion Biotechnology Committee
1994 - 2001	INN member

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

The American Society for Microbiology (**Fellow of the Academy, 2001 -**)  
The American Chemical Society  
Israel Society for Microbiology **Board member 2001-2005, President 09-11**  
Israel Institute of Chemical Engineering  
The Israel Chemical Society  
American Association for the Advancement of Science  
The Protein Society  
Society for General Microbiology

## HONORS

1980	B.Sc (with honors), Tel Aviv University
1982	M.Sc (with honors), Tel Aviv University
1990	The Muriel and David Jacknow Award for excellence in teaching.
1995	The Henry Taub Prize for Research
1996	The Herschel Rich Technion Innovation Award
1999	The Moshe Shilo Award from the Israel Society for Microbiology
2001	Fellow-American Academy of Microbiology
2002	The Eduard Rherin Science Prize of the German Technion Society
2002	The Erwin and Rosl Pollak Chair in Biotechnology
2007	The Technion's Excellence in Teaching Award (top 5%).
2009	The Herschel and Hilda Rich Technion Innovation Award

## GRADUATE STUDENTS

### Completed Theses

#### Ph.D

1. Orit Gat, D.Sc. 1996 Cloning, DNA sequence, and characterization of the xylanase gene from *Bacillus stearothermophilus* T-6.
2. Ofer Shenker, D.Sc. 1997. Regulation of xylanase production by *Bacillus stearothermophilus* T-6.
3. Eyal Shimoni, D.Sc. 1998. Bioconversion of essential oils to natural flavors and fragrances.
4. Sarah Gilead-Gropper, Ph.D. 1998. Cloning sequencing and regulation studies of L-arabinose utilizing genes from *Bacillus stearothermophilus* T-6.
5. Adva Mechaly (Zmora), Ph.D. 1998. Structure function studies on xylanase T-6.
6. Sima Yaron, Ph.D. 1999. Structure and interactions of functional domains from the cellulosome of *Clostridium thermocellum*.
7. Smadar Shulami, D.Sc. 2000. Molecular characterization of the glucuronic acid utilization operon from *Bacillus stearothermophilus* T-6.
8. Galit Meshulam, Ph.D. 2001. Isolation and characterization of lipases from thermophilic bacteria for the preparation of optically active compounds.
9. Tal Dror, D.Sc. 2003. Regulation of the cellulosome complex of *Clostridium thermocellum*.

10. Tsafirir Bravman, Ph.D. 2003. Mechanistic studies on Family 39 & 52 xylosidases.
11. Galia Zaide, Ph.D. 2004. The regulation of the xylanolytic system from *Geobacillus stearothermophilus* T-6.
12. Gennady Zolotnitsky. Ph.D. 2004. Characterization of enzyme substrate interactions in xylanase T-6.
13. Dalia Shallom, Ph.D. 2005. Structure-function studies on  $\alpha$ -glucuronidase and  $\alpha$ -arabinofuranosidase from *Geobacillus stearothermophilus*.
14. Tal Hendelsman. Ph.D. 2005. Protein-protein interactions in the cellulosome complex of *Clostridium thermocellum*.
15. Ifat Fondiano, Ph.D. 2007. Biochemical characterization of bacterial aminopeptidases.
16. Einat Naveh Abramovich. Ph.D. 2008. Structure-function studies on arabinanases from *Geobacillus stearothermophilus*.
17. Alon Ben-David, Ph.D. 2009. Engineering glycoside hydrolases for novel applications and properties.
18. Yakir Nataf, Ph.D. 2010. Genome-wide gene expression analysis of the cellulose degrading system in *Clostridium thermocellum*.
19. Dan Goldman, Ph.D. 2011. Biochemical characterization of *Zymomonas mobilis* levansucrase.
20. Orly Tabachnikov, Ph.D. 2012. Biochemical characterization of the arabinan degrading enzymes in *Geobacillus stearothermophilus*.

#### **M.Sc.**

1. Anat Carmi, M.Sc. 1990. Isolation of lignin decomposing bacteria.
2. Alex Khasin, M.Sc. 1991. Purification and characterization of a xylan-degrading enzyme from *Bacillus stearothermophilus* T-6.
3. Ronen Neutra, M.Sc. 1992. Optimization of the production of recombinant protein using baculovirus expression system in insect cell culture. (Additional supervisor: Dr. Ben Zion Levi).
4. Zeev Schwartz, M.Sc. 1992. Production of xylanases from thermophiles.
5. Cecilia Regueros, M.Sc. 1992. Cloning and expression of the *Bacillus stearothermophilus* T-6 xylosidase gene.
6. Tal Hendelsman, M.Sc. 1992. The isolation and characterization of lipases from thermophiles.
7. Ayelet Melnik, M.Sc. 1993. Continuous production and purification of xylanase T-6. (Additional supervisor: Prof. Z. Berk).
8. Tsvia Erlich, M.Sc. 1993. The thermoinactivation mechanisms of xylanase T-6.
9. Eilat Ezra, M.Sc. 1993. Extraction and purification of lycopene from *Phycomyces blakesleeianus*. (Additional supervisor: Prof. Z. Berk).
10. Sarah Gilead, M.Sc. 1993. Purification and characterization of an  $\alpha$ -L-arabinofuranosidase from *Bacillus stearothermophilus* T-6.
11. Adva Zmora, M.Sc. 1995. Overexpression of the *Bacillus stearothermophilus* T-6 xylanase.
12. Smadar Herzog, M.Sc. 1995. DNA sequencing and characterization of the  $\beta$ -xylosidase operon from *Bacillus stearothermophilus* T-6.
13. Galia Yarma, M.Sc. 1997. Protein production in a hollow fiber reactor (Primary supervisor: Prof. M. Sheintuch).
14. Iris Raz, M.Sc. 1999. Methyltransferases involved in the formation of methyl-chavicol and methyl eugenol in sweet basil (Additional supervisor: Dr. E. Lewinsohn).
15. Galia Zaide, M.Sc. 1999. Biochemical characterization of  $\alpha$ -glucuronidase from *Bacillus stearothermophilus* T-6.

16. Gennady Zolotnitsky, M.Sc. 1999. Cloning and characterization of the xylan-utilization genes from *Bacillus stearothermophilus* T-6.
17. Gilad Rachel, M.Sc. 2000. Characterization of the non cellulosomal cellulase Cell from *Clostridium thermocellum*.
18. Mirit Kolog, M.Sc. 2000. Overexpression and characterization of the intracellular xylanase from *Bacillus stearothermophilus* T-6.
19. Yael Chertkow, M.Sc. 2000. Heterologous expression of cellulases from *Clostridium thermocellum*.
20. Ayelet Baumzweig, M.Sc. 2001. Probing surface residues for enhanced thermostability in xylanase T-6.
21. Adi Rolider, M.Sc. 2002. Fermentation studies on the production of the cellulosome by *Clostridium thermocellum*.
22. Larisa Rabinovitch, M.Sc. 2002. Cloning, overproduction and biochemical characterization of SGAP, an amino peptidases from and *Streptomyces griseus*.
23. Orit Gershon, M.Sc. 2002, Cloning, overexpression, and biochemical characterization of KDO8PS from *Aquifex pyrophilus*. (Primary supervisor Timor Baasov).
24. Ifat Fondiano, M.Sc. 2003. Overproduction and biochemical characterization of the *ywaD* gene product, an aminopeptidases from *Bacillus subtilis*.
25. Shira Raikin, M.Sc. 2005. Isolation and charcterization of lipases with unique specificities.
26. Elinor Malul, M.Sc. 2005. Site-specific labeling of proteins *via* an *in-vitro* translation system.
27. Yulia Lipman, M.Sc. 2006. Structural elements in lipase T-6 that affect hydrolysis of triglycerides at the sn-2 position.
28. Yael Langut, M.Sc. 2006. Characterization of the repressor XylR from *Geobacillus stearothermophilus*.
29. Yael Grimpel, M.Sc. 2006. Cloning, expression and biochemical characterization of acetyl esterases from *Geobacillus stearothermophilus* T-6.
30. Ram Nechooshtan, M.Sc. 2006. Characterization of regulatory elements of the cellulase system in *Clostridium thermocellum*.
31. Maya Leon, M.Sc., 2006. Biochemical characterization of a XynB3, a beta- xylosidase from *Gebacillus stearthermophilus*.
32. Margarita Volkinshtein, M.Sc. 2008. Biochemical characterization of acetyl esterases from *Geobacillus stearothermophilus* T-6.
34. Eran Ivanir, M.Sc., 2010. Site-specific labeling of proteins.
35. Itzhak Shner, M.Sc. 2010. Identifying regulatory elements in *Geobacillus stearothermophilus*.
36. Arik Zehavi, M.Sc. 2011. Developing genetic tools for *G. stearothermophilus*.
37. Andy Sand, M.Sc. 2013. Aleternative sigma factors in *C. thermocellum*
38. Rachel Salama, M.Sc. 2013. Structure function studies on arabinopyranosidase

### **Theses in Progress**

#### **PHD**

21. Onit Sikari, Ph.D., 2013. The catalytic mechanism of xylan-acetyl esterases from *Geobacillus stearothermophilus* T-6
22. Arik Zehavi, Ph.D. 2015. Quorum sensing in *Geobacillus stearothermophilus*.
23. Noam Grimberg, Ph.D. Glycoside hydrolases from metagenimocs
24. Tal Zeltzer, Ph.D., 2015. Growth rate regulation in *Clostridium thermocellum*.

25. Andy Sand, Ph.D., 2016. The regulation of cellulosomal genes by alternative sigma factors in *C. thermocellum*.
26. Rachel Salama, Ph.D. 2016. Structure function studies on arabinopyranosidase

#### POST DOCTORATE FELLOWS

1. Aviva Lapidot, (Levi Eshkol Post Doc. Scholarship) 1992-1994. Heterologous Expression of the xylanase gene in *B. subtilis* and *E. coli*.
2. Orit Gat, 1996-1997. Heterologous expression of the cellulosome complex from *Clostridium thermocellum*.
3. Sarah Gilead-Gropper, 1999-2000. Structure-function relationship of KDO8P.
4. Smadar Shulami, 2000-2003. Structure-function relationship of KDO8P: Rational design of novel antibacterial drugs.
5. Noa Lavid, 2001-2004. Isolation of novel lipases for organic synthesis.
6. Tali Dror. 2002-2003. The regulation of the cellulosome complex in *Clostridium thermocellum*
7. Tsafir Bravman, 2004. Organic synthesis with glycosynthases
8. Gennady Zolotnitsky, 2004-2005. The binding thermodynamic of CBD to cellulose.
9. Dan Goldman, 2011-2012,
10. Orly Tabachnikov, 2012-2013

#### RESEARCH ASSISTANT FELLOW

- Iris Alchanati, M.Sc. 1989-1995.  
 Smadar Shulami, Ph.D, 2004-  
 Noa Lavid, Ph.D., 2005 -

#### PUBLICATIONS

##### Theses

- M.Sc. Emulsan Depolymerase, 1982. Tel Aviv University  
 Ph.D. Studies on the Stability of Plasmids in *Bacillus subtilis*, 1988. M.I.T.

##### Refereed papers in professional journals

##### A. Published papers

1. **Shoham, Y.**, M. Rosenberg, and E. Rosenberg. Bacterial degradation of emulsan. *Appl. Environ. Microbiol.* **46**:573-579, 1983.
2. **Shoham, Y.**, and E. Rosenberg. Enzymatic depolymerization of emulsan. *J. Bacteriol.* **156**:161-167, 1983.
3. Pinas, O., **Y. Shoham**, E. Rosenberg, and D. Gutnick. Unmasking of surface components by removal of cell-associated emulsan from *Acinetobacter calcoaceticus* RAG-1. *Appl. Microbiol. Biotechnol.* **28**:93-99, 1988.
4. **Shoham, Y.**, and A.L. Demain. Effect of medium composition on the maintenance of a recombinant plasmid in *Bacillus subtilis*. *Enzyme Microb. Technol.* **12**:330-336, 1990.
5. **Shoham, Y.**, and A.L. Demain. Stabilization of a plasmid-encoded LacZ phenotype in *Bacillus subtilis*. *Curr. Microbiol.* **20**:373-379, 1990.

6. **Shoham, Y.**, and A.L. Demain. Kinetics of loss of a recombinant plasmid in *Bacillus subtilis*. *Biotechnol. Bioeng.* **37**:927-935, 1991.
7. **Shoham, Y.**, E. Israeli, A.L. Sonenshein, and A.L. Demain. Inhibition of growth of *Bacillus subtilis* by recombinant plasmid pCED3. *Arch. Microbiol.* **156**:204-212, 1991.
8. **Shoham, Y.**, G. Stephanopoulos, and A.L. Demain. Effects of the  $\beta$ -lactamase gene orientation of the kanamycin-resistance gene in plasmid pCED3 on the growth of *Bacillus subtilis*. *J. Ferment. Bioeng.* **72**:244-248, 1991.
9. Neutra R., B-Z. Levi and **Y. Shoham**. Optimization of protein-production by the baculovirus expression vector system in shake flasks. *Appl. Microbiol. Biotechnol.* **37**:74-78, 1992.
10. **Shoham, Y.**, Z. Schwartz, A. Khasin, O. Gat, Z. Zosim and E. Rosenberg. Delignification of wood pulp by a thermostable xylanase from *Bacillus stearothersophilus* strain T-6. *Biodegradation.* **3**:207-218, 1992.
11. Khasin, A., I. Alchanati and **Y. Shoham**. Purification and characterization of xylanase from *Bacillus stearothersophilus* T-6. *Appl. Environ. Microbiol.* **59**:1725-1730, 1993.
12. Lundgren, K. R., L. Bergkvist, S. Hogman, H. Joves, G. Eriksson, T. Bartfai, J. van der Laan, E. Rosenberg and **Y. Shoham**. Bleaching softwood pulp with Korsnas thermostable and alkaline stable xylanase T6 and lignox. *Svensk Papperstidning/nordisk cellulosa* **7**:40-42, 1993.
13. **Shoham, Y.**, Z. Zosim and E. Rosenberg. Partial decolorization of Kraft pulp at high temperature and at high pH values with an extracellular xylanase from *Bacillus stearothersophilus*. *J. Biotechnol.* **30**:123-131, 1993.
14. Bezalel, L., **Y. Shoham** and E. Rosenberg. Characterization and delignification activity of a thermostable  $\alpha$ -L-arabinofuranosidase from *Bacillus stearothersophilus*. *Appl. Microbiol. Biotechnol.* **40**:57-62, 1993.
15. Lundgren, K. R., L. Bergkvist, S. Hogman, H. Joves, G. Eriksson, T. Bartfai, J. van der Laan, E. Rosenberg and **Y. Shoham**. TCF mill trial on softwood pulp with Korsnas thermostable and alkaline stable xylanase T-6. *FEMS Microbiol. Rev.* **13**:365-368, 1994.
16. Gat O., A. Lapidot, I. Alchanati, C. Regueros and **Y. Shoham**. Cloning and DNA sequence of the gene coding for *Bacillus stearothersophilus* T-6 xylanase. *Appl. Environ. Microbiol.* **60**:1889-1896, 1994.
17. Handelsman, T., and **Y. Shoham**. Production and characterization of an extracellular thermostable lipase from a *Bacillus* sp. *J. Gen. Appl. Microbiol.* **40**:435-443, 1994.
18. Gilead S. and **Y. Shoham**. Purification and characterization of a  $\alpha$ -L arabinofuranosidase from *Bacillus stearothersophilus* T-6. *Appl. Environ. Microbiol.* **61**:170-174, 1995.
19. Yaron, S., E. Morag, E.A. Bayer, R. Lamed and **Y. Shoham**. Expression, purification and subunit-binding properties of cohesins 2 and 3 of the *Clostridium thermocellum* cellulosome. *FEBS* **360**:121-124, 1995.
20. Morag E., A. Lapidot, D. Govorko, R. Lamed, M. Wilchek, E. A. Bayer and **Y. Shoham**. Expression, purification and characterization of the cellulose-binding domain of the scaffoldin subunit from the cellulosome of *Clostridium thermocellum*. *Appl. Environ. Microbiol.* **61**:1980-1986, 1995.
21. Fishman A., Z. Berk, and **Y. Shoham**. Large scale purification of xylanase T-6. *Appl. Microbiol. Biotechnol.* **44**: 88-93, 1995.

22. Tormo, J., R. Lamed, A. J. Chirino, E. Morag, E. A. Bayer, **Y. Shoham**, and T. A. Steitz. Crystal structure of a bacterial family-III cellulose-binding domain: a general mechanism for attachment to cellulose. *EMBO J.* **15**: 5739-5751, 1996.
23. Lapidot, A., A. Mechaly, and **Y. Shoham**. Overexpression and single step purification of a thermostable xylanase from *Bacillus stearothermophilus* T-6. *J. Biotechnol.* **51**:259-264, 1996.
24. Morag, E., S. Yaron, R. Lamed, **Y. Shoham**, and E. A. Bayer. Dissociation of the cellulosome of *Clostridium thermocellum* under nondenaturing conditions. *J. Biotechnol.* **51**:235-242, 1996.
25. Yaron, S., L. J. W. Shimon, F. Frolow, R. Lamed, E. Morag, **Y. Shoham**, and E. A. Bayer. Expression, purification, and crystallization of a cohesin domain from the cellulosome of *Clostridium thermocellum*. *J. Biotechnol.* **51**:243-249, 1996.
26. Shimon, L. J.W., F. Frolow, S. Yaron, R. Lamed, E. Morag, E. A. Bayer, and **Y. Shoham**. Crystallization and preliminary X-ray analysis of a cohesin domain of the cellulosome from *Clostridium thermocellum*. *Acta Crystallogr. D.* **53**:114-115, 1997.
27. Shimon, L. J.W., E. A. Bayer, E. Morag, R. Lamed, S. Yaron, **Y. Shoham**, and F. Frolow. Three-dimensional crystal structure of a cohesin domain of the cellulosome from *Clostridium thermocellum*. *Structure* **5**:381-390, 1997.
28. Teplitsky, A., H. Feinberg, R. Gilboa, A. Lapidot, A. Mechaly, V. Stojanoff, M. Capel, **Y. Shoham**, and G. Shoham. Crystallization and preliminary crystallographic analysis of the thermostable, alkaline tolerant xylanase from *Bacillus stearothermophilus* T-6. *Acta Crystallogr. D.* **53**:608-611, 1997.
29. Pages, S., A. Belaich, J.P. Beleich, E. Morag, R. Lamed, **Y. Shoham**, and E. A. Bayer. Species-specificity of the cohesin-dockerin interaction between *Clostridium thermocellum* and *Clostridium cellulolyticum*: predication of specificity determinants of the dockerin domain. *Proteins* **29**:517-527, 1997.
30. Mechaly, A., V. Belakhov, **Y. Shoham**, and T. Baasov. An efficient chemical-enzymatic synthesis of 4-nitrophenyl  $\beta$ -xylobioside: a chromogenic substrate for xylanases. *Carbohydr. Res.* **304**:111-115, 1997.
31. Bayer, E. A., H. Chanzy, R. Lamed, and **Y. Shoham**. Cellulose, cellulases and cellulosomes. *Curr. Opin. Struct. Biol.* **8**:548-557, 1998.
32. Bayer, E. A., L.J.W. Shimon, **Y. Shoham**, and R. Lamed. Cellulosomes-structure and ultrastructure. *J. Structural Biology* **124**:221-234, 1998.
33. Teplitsky, A., S. Shulami, S. Moryles, G. Zaide, **Y. Shoham**, and G. Shoham. Crystallization and preliminary X-ray analysis of  $\alpha$ -D-glucuronidase from *Bacillus stearothermophilus* T-6. *Acta Crystallogr. D* **55**:869-872, 1999.
34. Boisset, C., Chanzy, H., Henrissat, B., Lamed, R., **Shoham, Y.** and Bayer, E. A. Digestion of crystalline cellulose substrates by the *Clostridium thermocellum* cellulosome: Structural and morphological aspects. *Biochem. J.* **340**:829-835, 1999.
35. **Shoham, Y.**, R. Lamed, and E.A. Bayer. The cellulosome concept as an efficient microbial strategy for the degradation of insoluble polysaccharides. *Trends in Microbiol.* **7**:275-281, 1999.
36. Ding, S-Y., E.A. Bayer, D. Steiner, **Y. Shoham**, and R. Lamed. A novel cellulosomal scaffoldin from *Acetivibrio cellulolyticus* which contain a Family 9 glycosyl hydrolase. *J. Bacteriol.* **181**:6720-6729, 1999.

37. Berdichevsky, Y., R. Lamed, D. Frenkel, U. Gophna, E. A. Bayer, S. Yaron, **Y. Shoham**, and I. Benhar. Matrix-assisted refolding of single-chain F<sub>v</sub>-cellulose binding domain fusion proteins. *Protein Express. Purif.* **17**:249-259, 1999.
38. Shulami, S., O. Gat, A.L. Sonenshein, and **Y. Shoham**. The glucuronic acid utilization gene cluster from *Bacillus stearothermophilus* T-6. *J. Bacteriol.* **181**:3695-3704, 1999
39. Teplitsky, A., S. Shulami, S. Moryles, **Y. Shoham**, and G. Shoham. Crystallization and preliminary X-ray analysis of an intracellular xylanase from *Bacillus stearothermophilus* T-6. *Acta Crystallogr.* **D56**, 181-184, 2000.
40. Kaustov, L., S. Kababya, D. Schoucheng, T. Baasov, S. Gropper, **Y. Shoham**, and A. Schmidt. Direct identification of enzyme active site residues by solid phase REDOR NMR: Application to KDO8P syntase. *J. Am. Chem. Soc* **122**:2649-2650, 2000.
41. Mechaly, A., S. Yaron, H-P. Fierobe, A. Belaich, J-P. Belaich, R. Lamed, **Y. Shoham**, and E. A. Bayer. Cohesin-dockerin recognition in cellulosome assembly: experiment versus hypothesis. *Proteins* **39**:170-177, 2000.
42. Kauffmann, C., O. Shoseyov, E. A. Bayer, R. Lamed, **Y. Shoham**, and R. T. Mandelbaum. A novel methodology for enzymatic removal of atrazine from water by CBD-fusion protein immobilized on cellulose. *Environ. Sci. Technol.* **34**:1292-1296, 2000
43. Ding, S-Y., E.A. Bayer, D. Steiner, **Y. Shoham**, and R. Lamed. A scaffoldin of the *Bacteroides cellulosolvens* cellulosome that contains eleven type-II cohesins. *J. Bacteriol.* **182**:4915-4925, 2000.
44. Shimoni, E., U. Ravid, and **Y. Shoham**. Isolation of a *Bacillus* sp. capable of transforming isoeugenol to vanillin. *J. Biotechnol* **78**:1-9, 2000.
45. Mechaly, A., A. Teplitsky, V. Belakhov, T. Baasov, G. Shoham and **Y. Shoham**. Overproduction and characterization of seleno-methionine xylanase T-6. *J. Biotechnol.* **78**:83-86, 2000
46. Linda J.W. Shimon, Sandrine Pagès, Anne Belaich, Jean-Pierre Belaich, Edward A. Bayer, Raphael Lamed, **Yuval Shoham**, and Felix Frolov. Crystal structure of a Family-IIIa scaffoldin CBD from the cellulosome of *Clostridium cellulolyticum* at 2.2 Å resolution. *Acta Cryst D56*:1560-1568, 2000.
47. Kaustov, L., Kababya, S., Du, S., Baasov, T., Gropper, S., **Shoham, Y.**, and Schmidt, A. Structural and mechanistic investigation of 3-deoxy-D-manno-octulosonate-8-phosphate syntase by solid-state REDOR NMR. *Biochemistry* **39**:14865-14876, 2000.
48. Lewinson, E., I. Ziv-Raz, N. Dudai, Y. Tadmor, E. Lastochkin, O. Larkov, D. Chaimovitch, U. Ravid, E. Putievsky, E. Pichersky, and **Y. Shoham**. Biosynthesis of estragole and methyl-eugenol in sweet basil (*Ocimum basilicum* L): Developmental and cghemotypic association of allylphenol O-methyltransferase activities. *Plant Science* **160**:27-35, 2000
49. Lamed, R., Kenig, R., Morag, E., Yaron, S., **Shoham, Y.** and Bayer, E. A. Nonproteolytic cleavage of aspartyl proline bonds in the cellulosomal scaffoldin subunit from *Clostridium thermocellum*. *Appl. Biochem. Biotechnol.* **90**:67-74, 2001.
50. Shi-You Ding, Marco T. Rincon, Raphael Lamed, Jennifer C. Martin, Sheila I. McCrae, Vincenzo Aurilia, **Yuval Shoham**, Edward A. Bayer, and Harry J. Flint. Cellulosomal scaffoldin-like proteins from *Ruminococcus flavefaciens*. *J. Bacteriol.* **183**:1945-1953, 2001



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