David B Wilson

List of Publications by Year in Descending Order

140 papers	7,578 citations	50 h-index	82 g-index
140 ext. papers	8,019 ext. citations	4.5 avg, IF	6.17 L-index

#	Paper	IF	Citations
140	Characterization of cellulose crystallinity after enzymatic treatment using Fourier transform infrared spectroscopy (FTIR). *Cellulose*, **2018**, 25, 37-48	5.5	55
139	Structure of a lytic polysaccharide monooxygenase and mutagenesis of key residues. *Biotechnology for Biofuels*, **2017**, 10, 243	7.8	29
138	Natural diversity of glycoside hydrolase family 48 exoglucanases: insights from structure. *Biotechnology for Biofuels*, **2017**, 10, 274	7.8	6
137	Functional characterization and crystal structure of thermostable amylase from Thermotoga petrophila, reveals high thermostability and an unusual form of dimerization. *Biochimica Et Biophysica Acta - Proteins and Proteomics*, **2017**, 1865, 1237-1245	4	6
136	Simulation studies of substrate recognition by the exocellulase CelF from Clostridium cellulolyticum. *Biotechnology and Bioengineering*, **2016**, 113, 1433-40	4.9	2
135	Periplasmic Cytophaga hutchinsonii Endoglucanases Are Required for Use of Crystalline Cellulose as the Sole Source of Carbon and Energy. *Applied and Environmental Microbiology*, **2016**, 82, 4835-4845	4.8	31
134	Microbial Diversity and Cellulase Production **2016**, 43-48		
133	Processive Cellulases **2015**, 83-89		3
132	Bacterial AA10 Lytic Polysaccharide Monooxygenases Enhance the Hydrolytic Degradation of Recalcitrant Substrates **2015**, 91-110		
131	Cel48A from Thermobifida fusca: structure and site directed mutagenesis of key residues. *Biotechnology and Bioengineering*, **2014**, 111, 664-73	4.9	34
130	Experimental and modeling studies of an unusual water-filled pore structure with possible mechanistic implications in family 48 cellulases. *Journal of Physical Chemistry B*, **2014**, 118, 2306-15	3.4	6
129	Mutation of Tryptophan 231 inThermobifida fuscaCel6A Causes Major Activity Changes. *Industrial Biotechnology*, **2014**, 10, 299-304	1.3	
128	Loop motions important to product expulsion in the Thermobifida fusca glycoside hydrolase family 6 cellobiohydrolase from structural and computational studies. *Journal of Biological Chemistry*, **2013**, 288, 33107-17	5.4	23
127	Determination of the molecular states of the processive endocellulase Thermobifida fusca Cel9A during crystalline cellulose depolymerization. *Biotechnology and Bioengineering*, **2012**, 109, 295-9	4.9	26
126	Processive and nonprocessive cellulases for biofuel production--lessons from bacterial genomes and structural analysis. *Applied Microbiology and Biotechnology*, **2012**, 93, 497-502	5.7	50
125	Paradigmatic status of an endo- and exoglucanase and its effect on crystalline cellulose degradation. *Biotechnology for Biofuels*, **2012**, 5, 78	7.8	19
124	Cellulase processivity. *Methods in Molecular Biology*, **2012**, 908, 93-9	1.4	31

123	Functional association of catalytic and ancillary modules dictates enzymatic activity in glycoside hydrolase family 43 β-xylosidase. *Journal of Biological Chemistry*, **2012**, 287, 9213-21	5.4	22
122	Deconstruction of lignocellulose into soluble sugars by native and designer cellulosomes. *MBio*, **2012**, 3,	7.8	84
121	Microbial diversity of cellulose hydrolysis. *Current Opinion in Microbiology*, **2011**, 14, 259-63	7.9	235
120	Assembly of xylanases into designer cellulosomes promotes efficient hydrolysis of the xylan component of a natural recalcitrant cellulosic substrate. *MBio*, **2011**, 2,	7.8	51
119	Determination of the catalytic base in family 48 glycosyl hydrolases. *Applied and Environmental Microbiology*, **2011**, 77, 6274-6	4.8	15
118	Increased crystalline cellulose activity via combinations of amino acid changes in the family 9 catalytic domain and family 3c cellulose binding module of Thermobifida fusca Cel9A. *Applied and Environmental Microbiology*, **2010**, 76, 2582-8	4.8	36
117	Cellulase-xylanase synergy in designer cellulosomes for enhanced degradation of a complex cellulosic substrate. *MBio*, **2010**, 1,	7.8	90
116	Demonstration of the importance for cellulose hydrolysis of CelS, the most abundant cellulosomal cellulase in Clostridium thermocellum [corrected]. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 17855-6	11.5	5
115	Contribution of a xylan-binding module to the degradation of a complex cellulosic substrate by designer cellulosomes. *Applied and Environmental Microbiology*, **2010**, 76, 3787-96	4.8	46
114	Thermobifida fusca exoglucanase Cel6B is incompatible with the cellulosomal mode in contrast to endoglucanase Cel6A. *Systems and Synthetic Biology*, **2010**, 4, 193-201		30
113	Glycoside hydrolases: catalytic base/nucleophile diversity. *Biotechnology and Bioengineering*, **2010**, 107, 195-205	4.9	66
112	Enhanced cellulose degradation by nano-complexed enzymes: Synergism between a scaffold-linked exoglucanase and a free endoglucanase. *Journal of Biotechnology*, **2010**, 147, 205-11	3.7	61
111	Processivity, synergism, and substrate specificity of Thermobifida fusca Cel6B. *Applied and Environmental Microbiology*, **2009**, 75, 6655-61	4.8	62
110	Site-directed mutagenesis to probe catalysis by a Thermobifida fusca beta-1,3-glucanase (Lam81A). *Protein Engineering, Design and Selection*, **2009**, 22, 375-82	1.9	8
109	Effect of linker length and dockerin position on conversion of a Thermobifida fusca endoglucanase to the cellulosomal mode. *Applied and Environmental Microbiology*, **2009**, 75, 7335-42	4.8	63
108	Evidence for a novel mechanism of microbial cellulose degradation. *Cellulose*, **2009**, 16, 723-727	5.5	51
107	The first evidence that a single cellulase can be essential for cellulose degradation in a cellulolytic microorganism. *Molecular Microbiology*, **2009**, 74, 1287-8	4.1	14
106	The absence of an identifiable single catalytic base residue in Thermobifida fusca exocellulase Cel6B. *FEBS Journal*, **2009**, 276, 3837-45	5.7	19

105	Cellulases and biofuels. *Current Opinion in Biotechnology*, **2009**, 20, 295-9	11.4	351
104	Conversion of Thermobifida fusca free exoglucanases into cellulosomal components: comparative impact on cellulose-degrading activity. *Journal of Biotechnology*, **2008**, 135, 351-7	3.7	59
103	Comparative NMR analysis of cellooligosaccharide hydrolysis by GH9 bacterial and plant endo-1,4-beta-glucanases. *Biochemistry*, **2008**, 47, 5235-41	3.2	13
102	ORIGINAL RESEARCH: Endocellulolytic activity of theClostridium thermocellumCel9C (formerly CbhA) catalytic domain. *Industrial Biotechnology*, **2008**, 4, 99-104	1.3	6
101	Effect of sodium hydroxide treatment of bacterial cellulose on cellulase activity. *Cellulose*, **2008**, 15, 465-471	5.5	19
100	Chitin binding by Thermobifida fusca cellulase catalytic domains. *Biotechnology and Bioengineering*, **2008**, 100, 644-52	4.9	9
99	Regulation and characterization of Thermobifida fusca carbohydrate-binding module proteins E7 and E8. *Biotechnology and Bioengineering*, **2008**, 100, 1066-77	4.9	81
98	Three microbial strategies for plant cell wall degradation. *Annals of the New York Academy of Sciences*, **2008**, 1125, 289-97	6.5	142
97	Effect of digestion by pure cellulases on crystallinity and average chain length for bacterial and microcrystalline celluloses. *Cellulose*, **2007**, 14, 283-293	5.5	68
96	Genome sequence and analysis of the soil cellulolytic actinomycete Thermobifida fusca YX. *Journal of Bacteriology*, **2007**, 189, 2477-86	3.5	167
95	A tomato endo-beta-1,4-glucanase, SlCel9C1, represents a distinct subclass with a new family of carbohydrate binding modules (CBM49). *Journal of Biological Chemistry*, **2007**, 282, 12066-74	5.4	48
94	Genome sequence of the cellulolytic gliding bacterium Cytophaga hutchinsonii. *Applied and Environmental Microbiology*, **2007**, 73, 3536-46	4.8	170
93	Processivity, substrate binding, and mechanism of cellulose hydrolysis by Thermobifida fusca Cel9A. *Applied and Environmental Microbiology*, **2007**, 73, 3165-72	4.8	121
92	Proteomic and transcriptomic analysis of extracellular proteins and mRNA levels in Thermobifida fusca grown on cellobiose and glucose. *Journal of Bacteriology*, **2007**, 189, 6260-5	3.5	35
91	Expression of thermostable microbial cellulases in the chloroplasts of nicotine-free tobacco. *Journal of Biotechnology*, **2007**, 131, 362-9	3.7	65
90	A comparison of nLC-ESI-MS/MS and nLC-MALDI-MS/MS for GeLC-based protein identification and iTRAQ-based shotgun quantitative proteomics. *Journal of Biomolecular Techniques*, **2007**, 18, 226-37	1.1	59
89	Effect of cellulase mole fraction and cellulose recalcitrance on synergism in cellulose hydrolysis and binding. *Biotechnology Progress*, **2006**, 22, 270-7	2.8	54
88	Thermobifida fusca family-6 cellulases as potential designer cellulosome components. *Biocatalysis and Biotransformation*, **2006**, 24, 3-12	2.5	45

87	Characterization of a Thermobifida fusca beta-1,3-glucanase (Lam81A) with a potential role in plant biomass degradation. *Biochemistry*, **2006**, 45, 14094-100	3.2	29
86	Selective cadmium accumulation using recombinant Escherichia coli. *Journal of Bioscience and Bioengineering*, **2005**, 99, 109-14	3.3	35
85	Phenolic extraction from apple peel by cellulases from Thermobifida fusca. *Journal of Agricultural and Food Chemistry*, **2005**, 53, 9560-5	5.7	44
84	Crystal structure of Thermobifida fusca endoglucanase Cel6A in complex with substrate and inhibitor: the role of tyrosine Y73 in substrate ring distortion. *Biochemistry*, **2005**, 44, 12915-22	3.2	42
83	Quantifying bacterial population dynamics in compost using 16S rRNA gene probes. *Applied Microbiology and Biotechnology*, **2005**, 66, 457-63	5.7	28
82	Characterization and comparison of metal accumulation in two Escherichia coli strains expressing either CopA or MntA, heavy metal-transporting bacterial P-type adenosine triphosphatases. *Applied Biochemistry and Biotechnology*, **2004**, 117, 33-48	3.2	8
81	Studies of Thermobifida fusca plant cell wall degrading enzymes. *Chemical Record*, **2004**, 4, 72-82	6.6	131
80	Synergistic activity of Paenibacillus sp. BP-23 cellobiohydrolase Cel48C in association with the contiguous endoglucanase Cel9B and with endo- or exo-acting glucanases from Thermobifida fusca. *Biotechnology and Bioengineering*, **2004**, 87, 161-9	4.9	14
79	Cloning, characterization and phylogenetic relationships of cel5B, a new endoglucanase encoding gene from Thermobifida fusca. *Journal of Basic Microbiology*, **2004**, 44, 383-99	2.7	29
78	Purification and characterization of Thermobifida fusca xylanase 10B. *Canadian Journal of Microbiology*, **2004**, 50, 835-43	3.2	30
77	Recombinant expression and enzymatic characterization of PttCel9A, a KOR homologue from Populus tremula x tremuloides. *Biochemistry*, **2004**, 43, 10080-9	3.2	53
76	Kinetic studies of Thermobifida fusca Cel9A active site mutant enzymes. *Biochemistry*, **2004**, 43, 9655-63	3.2	89
75	Binding and reversibility of Thermobifida fusca Cel5A, Cel6B, and Cel48A and their respective catalytic domains to bacterial microcrystalline cellulose. *Biotechnology and Bioengineering*, **2003**, 84, 151-9	4.9	34
74	Positional expression effects of cysteine mutations in the Thermobifida fusca cellulase Cel6A and Cel6B catalytic domains. *Enzyme and Microbial Technology*, **2003**, 32, 331-336	3.8	6
73	Tracking temporal changes of bacterial community fingerprints during the initial stages of composting. *FEMS Microbiology Ecology*, **2003**, 46, 1-9	4.3	61
72	An engineered chorismate mutase with allosteric regulation. *Bioorganic and Medicinal Chemistry*, **2003**, 11, 3109-14	3.4	6
71	Mapping of chorismate mutase and prephenate dehydrogenase domains in the Escherichia coli T-protein. *FEBS Journal*, **2003**, 270, 757-63		24
70	Cloning, expression and characterization of a family-74 xyloglucanase from Thermobifida fusca. *FEBS Journal*, **2003**, 270, 3083-91		56

69	Quantitative determination of noncovalent binding interactions using automated nanoelectrospray mass spectrometry. *Analytical Chemistry*, **2003**, 75, 3010-8	7.8	141
68	Binding mechanisms for Thermobifida fusca Cel5A, Cel6B, and Cel48A cellulose-binding modules on bacterial microcrystalline cellulose. *Biotechnology and Bioengineering*, **2002**, 80, 380-92	4.9	22
67	Mutation and expression of N233C-D506C of cellulase Cel6B from Thermobifida fusca in Escherichia coli. *Enzyme and Microbial Technology*, **2002**, 30, 804-808	3.8	7
66	Binding of Thermobifida fusca CDCel5A, CDCel6B and CDCel48A to easily hydrolysable and recalcitrant cellulose fractions on BMCC. *Enzyme and Microbial Technology*, **2002**, 31, 941-948	3.8	11
65	Cooperative and competitive binding in synergistic mixtures of Thermobifida fusca cellulases Cel5A, Cel6B, and Cel9A. *Biotechnology Progress*, **2002**, 18, 760-9	2.8	60
64	Synergism in binary mixtures of Thermobifida fusca cellulases Cel6B, Cel9A, and Cel5A on BMCC and Avicel. *Applied Biochemistry and Biotechnology*, **2002**, 101, 97-111	3.2	36
63	Cloning and biochemical characterization of BglC, a beta-glucosidase from the cellulolytic actinomycete Thermobifida fusca. *Current Microbiology*, **2001**, 42, 295-301	2.4	68
62	A selective inhibitor of Escherichia coli prephenate dehydratase. *Bioorganic and Medicinal Chemistry Letters*, **2001**, 11, 2485-8	2.9	3
61	. *Current Microbiology*, **2001**, 42, 295	2.4	30
60	Effects of noncatalytic residue mutations on substrate specificity and ligand binding of Thermobifida fusca endocellulase cel6A. *FEBS Journal*, **2000**, 267, 244-52		43
59	Site-directed mutation of noncatalytic residues of Thermobifida fusca exocellulase Cel6B. *FEBS Journal*, **2000**, 267, 3101-15		72
58	Cloning, expression and characterization of a family 48 exocellulase, Cel48A, from Thermobifida fusca. *FEBS Journal*, **2000**, 267, 4988-97		109
57	Role of Four Conserved Active-Site Aspartic Acid Residues in Thermobifida fusca Endoglucanase Cel6A. *ACS Symposium Series*, **2000**, 28-38	0.4	
56	Construction and characterization of an Escherichia coli strain genetically engineered for Ni(II) bioaccumulation. *Applied and Environmental Microbiology*, **2000**, 66, 5383-6	4.8	54
55	Probing the catalytic mechanism of prephenate dehydratase by site-directed mutagenesis of the Escherichia coli P-protein dehydratase domain. *Biochemistry*, **2000**, 39, 4722-8	3.2	33
54	A celR mutation affecting transcription of cellulase genes in Thermobifida fusca. *Journal of Bacteriology*, **2000**, 182, 252-5	3.5	24
53	Characterization and cloning of celR, a transcriptional regulator of cellulase genes from Thermomonospora fusca. *Journal of Biological Chemistry*, **1999**, 274, 13127-32	5.4	47
52	Substrate heterogeneity causes the nonlinear kinetics of insoluble cellulose hydrolysis. *Biotechnology and Bioengineering*, **1999**, 66, 35-41	4.9	75

51	Comparing the thermodynamic stabilities of a related thermophilic and mesophilic enzyme. *Biochemistry*, **1999**, 38, 2570-6	3.2	74
50	Genetics and Properties of Cellulases. *Advances in Biochemical Engineering/Biotechnology*, **1999**, 1-21	1.7	20
49	Mechanistic studies of active site mutants of Thermomonospora fusca endocellulase E2. *Biochemistry*, **1999**, 38, 9746-51	3.2	44
48	Regulation of phenylalanine biosynthesis. Studies on the mechanism of phenylalanine binding and feedback inhibition in the Escherichia coli P-protein. *Biochemistry*, **1999**, 38, 12212-7	3.2	42
47	Characterization of cadmium uptake in Lactobacillus plantarum and isolation of cadmium and manganese uptake mutants. *Applied and Environmental Microbiology*, **1999**, 65, 4741-5	4.8	35
46	Cloning, expression, and characterization of cadmium and manganese uptake genes from Lactobacillus plantarum. *Applied and Environmental Microbiology*, **1999**, 65, 4746-52	4.8	55
45	Expression of an Aspergillus niger phytase gene (phyA) in Saccharomyces cerevisiae. *Applied and Environmental Microbiology*, **1999**, 65, 1915-8	4.8	99
44	Hg2+ removal by genetically engineered Escherichia coli in a hollow fiber bioreactor. *Biotechnology Progress*, **1998**, 14, 667-71	2.8	46
43	Factorial optimization of a six-cellulase mixture. *Biotechnology and Bioengineering*, **1998**, 58, 494-501	4.9	35
42	Fed-batch production of thermomonospora fusca endoglucanase by recombinant streptomyces lividans. *Biotechnology and Bioengineering*, **1998**, 60, 70-6	4.9	7
41	Active-site binding of glycosides by Thermomonospora fusca endocellulase E2. *Biochemistry*, **1998**, 37, 9220-9	3.2	33
40	Chorismate mutase-prephenate dehydratase from Escherichia coli. Study of catalytic and regulatory domains using genetically engineered proteins. *Journal of Biological Chemistry*, **1998**, 273, 6248-53	5.4	66
39	Regulation of biosynthesis of individual cellulases in Thermomonospora fusca. *Journal of Bacteriology*, **1998**, 180, 3529-32	3.5	46
38	Roles of the catalytic domain and two cellulose binding domains of Thermomonospora fusca E4 in cellulose hydrolysis. *Journal of Bacteriology*, **1998**, 180, 1709-14	3.5	172
37	Surface residue mutations which change the substrate specificity of Thermomonospora fusca endoglucanase E2. *Journal of Biotechnology*, **1997**, 57, 101-13	3.7	47
36	Structure and mechanism of endo/exocellulase E4 from Thermomonospora fusca. *Nature Structural Biology*, **1997**, 4, 810-8		309
35	Genetic engineering of bacteria and their potential for Hg2+ bioremediation. *Biodegradation*, **1997**, 8, 97-103	4.1	77
34	A Prevotella ruminicola B(1)4 operon encoding extracellular polysaccharide hydrolases. *Current Microbiology*, **1997**, 35, 274-7	2.4	19

33	Identification of two functionally different classes of exocellulases. *Biochemistry*, **1996**, 35, 586-92	3.2	220
32	Why are ruminal cellulolytic bacteria unable to digest cellulose at low pH?. *Journal of Dairy Science*, **1996**, 79, 1503-9	4	339
31	Comparison of Enzymes Catalyzing the Hydrolysis of Insoluble Polysaccharides. *ACS Symposium Series*, **1996**, 1-12	0.4	1
30	Site-directed mutagenesis of monofunctional chorismate mutase engineered from the E. coli P-protein. *Bioorganic and Medicinal Chemistry*, **1996**, 4, 1015-20	3.4	37
29	Characterization of a Thermomonospora fusca exocellulase. *Biochemistry*, **1995**, 34, 3386-95	3.2	83
28	[19] Cloning of Thermomonospora fusca Cellulase Genes in Escherichia coli and Streptomyces lividans. *Methods in Molecular Genetics*, **1995**, 367-374		1
27	Structure□unction Studies of Endo-l,4-□D-glucanase E2 from Thermomonospora fusca. *ACS Symposium Series*, **1994**, 66-74	0.4	
26	A new thermostable endoglucanase,Acidothermus cellulolyticus E1. *Applied Biochemistry and Biotechnology*, **1994**, 45-46, 245-256	3.2	43
25	Dimerization of Thermomonospora fusca beta-1,4-endoglucanase E2. *Biochemistry*, **1993**, 32, 8146-50	3.2	7
24	Crystal structure of the catalytic domain of a thermophilic endocellulase. *Biochemistry*, **1993**, 32, 9906-16	3.2	202
23	Disulfide arrangement and chemical modification of beta-1,4-endoglucanase E2 from Thermomonospora fusca. *Biochemistry*, **1993**, 32, 8151-6	3.2	10
22	Disulfide arrangement and functional domains of beta-1,4-endoglucanse E5 from Thermomonospora fusca. *Biochemistry*, **1993**, 32, 8157-61	3.2	14
21	Structure□unction Relationships in Cellulase Genes. *ACS Symposium Series*, **1993**, 243-250	0.4	1
20	Continuous, high level production and excretion of a plasmid-encoded protein by Escherichia coli in a two-stage chemostat. *Biotechnology and Bioengineering*, **1993**, 41, 937-46	4.9	20
19	Activity studies of eight purified cellulases: Specificity, synergism, and binding domain effects. *Biotechnology and Bioengineering*, **1993**, 42, 1002-13	4.9	306
18	Effects of plasmid copy number and runaway plasmid replication on overproduction and excretion of beta-lactamase from Escherichia coli. *Biotechnology Progress*, **1993**, 9, 31-9	2.8	34
17	Biochemistry and genetics of actinomycete cellulases. *Critical Reviews in Biotechnology*, **1992**, 12, 45-63	9.4	98
16	Expression of human epidermal growth factor byEscherichia coli in continuous culture. *Biotechnology Letters*, **1992**, 14, 339-344	3	5

15	Escherichia coli host cell modifications in continuous culture affecting heterologous protein overproduction: a population dynamics study. *Biotechnology Progress*, **1992**, 8, 340-6	2.8	9
14	Chorismate mutase/prephenate dehydratase from escherichia coli: Subcloning, overproduction and purification. *Tetrahedron*, **1991**, 47, 2573-2577	2.4	7
13	A new class of endoglycosidase inhibitors. Studies on endocellulases. *Journal of the American Chemical Society*, **1989**, 111, 783-785	16.4	32
12	Release of periplasmic enzymes and other physiological effects of beta-lactamase overproduction in Escherichia coli. *Biotechnology and Bioengineering*, **1988**, 32, 741-8	4.9	71
11	Effect of alkaline medium on the production and excretion of B-lactamase byEscherichia coli. *Biotechnology Letters*, **1988**, 10, 377-382	3	12
10	Cloning of Thermomonospora fusca genes coding for beta 1-4 endoglucanases E1, E2 and E5. *Gene*, **1988**, 71, 331-7	3.8	26
9	Cellulases of Thermomonospora fusca. *Methods in Enzymology*, **1988**, 160, 314-323	1.7	50
8	Cloning of the Thermomonospora fusca Endoglucanase E2 Gene in Streptomyces lividans: Affinity Purification and Functional Domains of the Cloned Gene Product. *Applied and Environmental Microbiology*, **1988**, 54, 2521-6	4.8	83
7	Regulation of beta-1,4-Endoglucanase Synthesis in Thermomonospora fusca. *Applied and Environmental Microbiology*, **1987**, 53, 1352-7	4.8	46
6	Expression of a Thermomonospora fusca Cellulase Gene in Streptomyces lividans and Bacillus subtilis. *Applied and Environmental Microbiology*, **1987**, 53, 1470-5	4.8	39
5	Purification and characterization of two .beta.-1,4-endoglucanases from Thermomonospora fusca. *Biochemistry*, **1985**, 24, 7797-7804	3.2	124
4	Cloning and Expression of a Thermomonospora YX Endocellulase Gene in E. coli. *Nature Biotechnology*, **1983**, 1, 594-601	44.5	34
3	Sugar□lipid Intermediates Related to Colanic Acid Produced in vitro by Mucoid Mutants of Escherichia coli. *Biochemical Society Transactions*, **1975**, 3, 1095-1096	5.1	
2	Source of energy for the Escherichia coli galactose transport systems induced by galactose. *Journal of Bacteriology*, **1974**, 120, 866-71	3.5	42
1	Aerobic Microbial Cellulase Systems374-392		11