Michael J Betenbaugh

List of Publications by Citations

256 papers	10,179 citations	54 h-index	89 g-index
270 ext. papers	11,625 ext. citations	6.4 avg, IF	6.22 L-index

#	Paper	IF	Citations
256	The genomic sequence of the Chinese hamster ovary (CHO)-K1 cell line. *Nature Biotechnology*, **2011**, 29, 735-41	44.5	584
255	A green light for engineered algae: redirecting metabolism to fuel a biotechnology revolution. *Current Opinion in Biotechnology*, **2008**, 19, 430-6	11.4	449
254	Genomic landscapes of Chinese hamster ovary cell lines as revealed by the Cricetulus griseus draft genome. *Nature Biotechnology*, **2013**, 31, 759-65	44.5	289
253	Sex, age, and hospitalization drive antibody responses in a COVID-19 convalescent plasma donor population. *Journal of Clinical Investigation*, **2020**, 130, 6141-6150	15.9	239
252	The effect of mixotrophy on microalgal growth, lipid content, and expression levels of three pathway genes in Chlorella sorokiniana. *Applied Microbiology and Biotechnology*, **2011**, 91, 835-44	5.7	217
251	A critical analysis of paddlewheel-driven raceway ponds for algal biofuel production at commercial scales. *Algal Research*, **2014**, 4, 76-88	5	207
250	Life and death in mammalian cell culture: strategies for apoptosis inhibition. *Trends in Biotechnology*, **2004**, 22, 174-80	15.1	190
249	Determination of nucleotides and sugar nucleotides involved in protein glycosylation by high-performance anion-exchange chromatography: sugar nucleotide contents in cultured insect cells and mammalian cells. *Analytical Biochemistry*, **2001**, 293, 129-37	3.1	176
248	A Consensus Genome-scale Reconstruction of Chinese Hamster Ovary Cell Metabolism. *Cell Systems*, **2016**, 3, 434-443.e8	10.6	145
247	The emerging CHO systems biology era: harnessing the Omics revolution for biotechnology. *Current Opinion in Biotechnology*, **2013**, 24, 1102-7	11.4	138
246	Accelerating genome editing in CHO cells using CRISPR Cas9 and CRISPy, a web-based target finding tool. *Biotechnology and Bioengineering*, **2014**, 111, 1604-16	4.9	137
245	A mathematical model of N-linked glycosylation. *Biotechnology and Bioengineering*, **2005**, 92, 711-28	4.9	136
244	Controlling N-linked glycan site occupancy. *Biochimica Et Biophysica Acta - General Subjects*, **2005**, 1726, 121-37	4	131
243	Proteomic analysis of Chinese hamster ovary cells. *Journal of Proteome Research*, **2012**, 11, 5265-76	5.6	128
242	Transcriptome and proteome analysis of Chinese hamster ovary cells under low temperature and butyrate treatment. *Journal of Biotechnology*, **2010**, 145, 143-59	3.7	124
241	Comparing N-glycan processing in mammalian cell lines to native and engineered lepidopteran insect cell lines. *Glycoconjugate Journal*, **2004**, 21, 343-60	3	107
240	The effects of alternative pretreatment strategies on anaerobic digestion and methane production from different algal strains. *Bioresource Technology*, **2014**, 155, 366-72	11	105

239	Microalgal biomass production and carbon dioxide sequestration from an integrated ethanol biorefinery in Iowa: A technical appraisal and economic feasibility evaluation. *Biomass and Bioenergy*, **2011**, 35, 3865-3876	5.3	105
238	COVID-19 Serology at Population Scale: SARS-CoV-2-Specific Antibody Responses in Saliva. *Journal of Clinical Microbiology*, **2020**, 59,	9.7	94
237	Overcoming apoptosis: new methods for improving protein-expression systems. *Trends in Biotechnology*, **1998**, 16, 88-95	15.1	93
236	Part II. Overexpression of bcl-2 family members enhances survival of mammalian cells in response to various culture insults. *Biotechnology and Bioengineering*, **2000**, 67, 555-64	4.9	93
235	Comparative analyses of three Chlorella species in response to light and sugar reveal distinctive lipid accumulation patterns in the Microalga C. sorokiniana. *PLoS ONE*, **2014**, 9, e92460	3.7	91
234	An in vitro uniaxial stretch model for axonal injury. *Annals of Biomedical Engineering*, **2003**, 31, 589-98	4.7	90
233	Modifying secretion and post-translational processing in insect cells. *Current Opinion in Biotechnology*, **1999**, 10, 142-5	11.4	89
232	Differential N-glycan patterns of secreted and intracellular IgG produced in Trichoplusia ni cells. *Journal of Biological Chemistry*, **1997**, 272, 9062-70	5.4	87
231	Quantification of cell culture factors affecting recombinant protein yields in baculovirus-infected insect cells. *Biotechnology and Bioengineering*, **1992**, 39, 614-8	4.9	85
230	Enhanced cell culture performance using inducible anti-apoptotic genes E1B-19K and Aven in the production of a monoclonal antibody with Chinese hamster ovary cells. *Biotechnology and Bioengineering*, **2007**, 97, 877-92	4.9	82
229	Inhibiting apoptosis in mammalian cell culture using the caspase inhibitor XIAP and deletion mutants. *Biotechnology and Bioengineering*, **2002**, 77, 704-16	4.9	82
228	Part I. Bcl-2 and bcl-xL limit apoptosis upon infection with alphavirus vectors. *Biotechnology and Bioengineering*, **2000**, 67, 544-554	4.9	78
227	Bioprospecting of microalgae for integrated biomass production and phytoremediation of unsterilized wastewater and anaerobic digestion centrate. *Applied Microbiology and Biotechnology*, **2015**, 99, 6139-54	5.7	76
226	N-glycan patterns of human transferrin produced in Trichoplusia ni insect cells: effects of mammalian galactosyltransferase. *Glycobiology*, **2000**, 10, 837-47	5.8	76
225	Expression of anti-apoptosis genes alters lactate metabolism of Chinese Hamster Ovary cells in culture. *Biotechnology and Bioengineering*, **2009**, 103, 592-608	4.9	75
224	Aven and Bcl-xL enhance protection against apoptosis for mammalian cells exposed to various culture conditions. *Biotechnology and Bioengineering*, **2004**, 85, 589-600	4.9	75
223	Molecular chaperones stimulate the functional expression of the cocaine-sensitive serotonin transporter. *Journal of Biological Chemistry*, **1999**, 274, 17551-8	5.4	74
222	Links between metabolism and apoptosis in mammalian cells: applications for anti-apoptosis engineering. *Metabolic Engineering*, **2007**, 9, 317-26	9.7	73

221	Cloning and expression of the human N-acetylneuraminic acid phosphate synthase gene with 2-keto-3-deoxy-D-glycero- D-galacto-nononic acid biosynthetic ability. *Journal of Biological Chemistry*, **2000**, 275, 17869-77	5.4	73
220	A mathematical model to derive N-glycan structures and cellular enzyme activities from mass spectrometric data. *Glycobiology*, **2009**, 19, 1163-75	5.8	72
219	Design and Production of Bispecific Antibodies. *Antibodies*, **2019**, 8,	7	71
218	A novel microRNA mmu-miR-466h affects apoptosis regulation in mammalian cells. *Biotechnology and Bioengineering*, **2011**, 108, 1651-61	4.9	71
217	Glucose depletion activates mmu-miR-466h-5p expression through oxidative stress and inhibition of histone deacetylation. *Nucleic Acids Research*, **2012**, 40, 7291-302	20.1	69
216	Glycoengineering of Chinese hamster ovary cells for enhanced erythropoietin N-glycan branching and sialylation. *Biotechnology and Bioengineering*, **2015**, 112, 2343-51	4.9	68
215	Study of caspase inhibitors for limiting death in mammalian cell culture. *Biotechnology and Bioengineering*, **2003**, 81, 329-40	4.9	65
214	Chinese hamster genome database: an online resource for the CHO community at www.CHOgenome.org. *Biotechnology and Bioengineering*, **2012**, 109, 1353-6	4.9	64
213	Stable inhibition of mmu-miR-466h-5p improves apoptosis resistance and protein production in CHO cells. *Metabolic Engineering*, **2013**, 16, 87-94	9.7	63
212	Coexpression of molecular chaperone BiP improves immunoglobulin solubility and IgG secretion from Trichoplusia ni insect cells. *Biotechnology Progress*, **1997**, 13, 96-104	2.8	63
211	A perspective on microarrays: current applications, pitfalls, and potential uses. *Microbial Cell Factories*, **2007**, 6, 4	6.4	62
210	Genome-Scale Metabolic Model for the Green Alga Chlorella vulgaris UTEX 395 Accurately Predicts Phenotypes under Autotrophic, Heterotrophic, and Mixotrophic Growth Conditions. *Plant Physiology*, **2016**, 172, 589-602	6.6	62
209	Sequencing the CHO DXB11 genome reveals regional variations in genomic stability and haploidy. *BMC Genomics*, **2015**, 16, 160	4.5	61
208	Overexpression of a cytosolic chaperone to improve solubility and secretion of a recombinant IgG protein in insect cells. *Biotechnology and Bioengineering*, **1998**, 58, 196-203	4.9	59
207	Biosynthesis of human-type N-glycans in heterologous systems. *Current Opinion in Structural Biology*, **2004**, 14, 601-6	8.1	59
206	Production and N-glycan analysis of secreted human erythropoietin glycoprotein in stably transfected Drosophila S2 cells. *Biotechnology and Bioengineering*, **2005**, 92, 452-61	4.9	58
205	Structure and synthesis of polyisoprenoids used in N-glycosylation across the three domains of life. *Biochimica Et Biophysica Acta - General Subjects*, **2009**, 1790, 485-94	4	57
204	A reference genome of the Chinese hamster based on a hybrid assembly strategy. *Biotechnology and Bioengineering*, **2018**, 115, 2087-2100	4.9	55

203	Early prediction of instability of Chinese hamster ovary cell lines expressing recombinant antibodies and antibody-fusion proteins. *Biotechnology and Bioengineering*, **2012**, 109, 1016-30	4.9	55
202	QUANTITY: An Isobaric Tag for Quantitative Glycomics. *Scientific Reports*, **2015**, 5, 17585	4.9	54
201	Physiological evaluation of a new Chlorella sorokiniana isolate for its biomass production and lipid accumulation in photoautotrophic and heterotrophic cultures. *Biotechnology and Bioengineering*, **2012**, 109, 1958-64	4.9	54
200	Enhancement of transient gene expression and culture viability using Chinese hamster ovary cells overexpressing Bcl-x(L). *Biotechnology and Bioengineering*, **2008**, 101, 567-78	4.9	54
199	Effects of dissolved oxygen shock on the stability of recombinant Escherichia coli containing plasmid pKN401. *Biotechnology and Bioengineering*, **1987**, 29, 85-91	4.9	54
198	Conversion of MDCK cell line to suspension culture by transfecting with human siat7e gene and its application for influenza virus production. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 14802-7	11.5	53
197	Effects of co-expressing chaperone BiP on functional antibody production in the baculovirus system. *Protein Expression and Purification*, **1994**, 5, 595-603	2	52
196	Anaerobic digestion of lipid-extracted Auxenochlorella protothecoides biomass for methane generation and nutrient recovery. *Bioresource Technology*, **2015**, 183, 229-39	11	51
195	The effect of iron on growth, lipid accumulation, and gene expression profile of the freshwater microalga Chlorella sorokiniana. *Applied Microbiology and Biotechnology*, **2014**, 98, 9473-81	5.7	51
194	Integration of the transcriptome and glycome for identification of glycan cell signatures. *PLoS Computational Biology*, **2013**, 9, e1002813	5	51
193	Antibody glycoengineering strategies in mammalian cells. *Biotechnology and Bioengineering*, **2018**, 115, 1378-1393	4.9	50
192	Combining caspase and mitochondrial dysfunction inhibitors of apoptosis to limit cell death in mammalian cell cultures. *Biotechnology and Bioengineering*, **2006**, 94, 362-72	4.9	50
191	Humanization of lepidopteran insect-cell-produced glycoproteins. *Accounts of Chemical Research*, **2003**, 36, 613-20	24.3	50
190	Expression of a functional Drosophila melanogaster N-acetylneuraminic acid (Neu5Ac) phosphate synthase gene: evidence for endogenous sialic acid biosynthetic ability in insects. *Glycobiology*, **2002**, 12, 73-83	5.8	50
189	Engineering sialic acid synthetic ability into insect cells: identifying metabolic bottlenecks and devising strategies to overcome them. *Biochemistry*, **2003**, 42, 15215-25	3.2	48
188	Comparison of Bcl-2 to a Bcl-2 deletion mutant for mammalian cells exposed to culture insults. *Biotechnology and Bioengineering*, **2001**, 73, 211-22	4.9	48
187	Cloning and expression of human sialic acid pathway genes to generate CMP-sialic acids in insect cells. *Glycoconjugate Journal*, **2001**, 18, 205-13	3	48
186	I. Study of protein aggregation due to heat denaturation: A structural approach using circular dichroism spectroscopy, nuclear magnetic resonance, and static light scattering **1998**, 59, 273-280		47

185	A multi-pronged investigation into the effect of glucose starvation and culture duration on fed-batch CHO cell culture. *Biotechnology and Bioengineering*, **2015**, 112, 2172-84	4.9	46
184	Mcl-1 overexpression leads to higher viabilities and increased production of humanized monoclonal antibody in Chinese hamster ovary cells. *Biotechnology Progress*, **2009**, 25, 1161-8	2.8	46
183	Purification, characterization, and cloning of a Spodoptera frugiperda Sf9 beta-N-acetylhexosaminidase that hydrolyzes terminal N-acetylglucosamine on the N-glycan core. *Journal of Biological Chemistry*, **2006**, 281, 19545-60	5.4	45
182	A comparison of the properties of a Bcl-xL variant to the wild-type anti-apoptosis inhibitor in mammalian cell cultures. *Metabolic Engineering*, **2003**, 5, 230-45	9.7	45
181	Mimicking lichens: incorporation of yeast strains together with sucrose-secreting cyanobacteria improves survival, growth, ROS removal, and lipid production in a stable mutualistic co-culture production platform. *Biotechnology for Biofuels*, **2017**, 10, 55	7.8	44
180	Nucleocapsid- and virus-like particles assemble in cells infected with recombinant baculoviruses or vaccinia viruses expressing the M and the S segments of Hantaan virus. *Virus Research*, **1995**, 38, 111-24	6.4	44
179	Karyotype variation of CHO host cell lines over time in culture characterized by chromosome counting and chromosome painting. *Biotechnology and Bioengineering*, **2018**, 115, 165-173	4.9	43
178	Engineering cells to improve protein expression. *Current Opinion in Structural Biology*, **2014**, 26, 32-8	8.1	43
177	Rescue of immunoglobulins from insolubility is facilitated by PDI in the baculovirus expression system. *Protein Expression and Purification*, **1996**, 7, 281-8	2	42
176	SnapShot: N-Glycosylation Processing Pathways across Kingdoms. *Cell*, **2017**, 171, 258-258.e1	56.2	41
175	Bcl-2 family in inter-organelle modulation of calcium signaling; roles in bioenergetics and cell survival. *Journal of Bioenergetics and Biomembranes*, **2014**, 46, 1-15	3.7	40
174	Cellular trafficking and photochemical internalization of cell penetrating peptide linked cargo proteins: a dual fluorescent labeling study. *Bioconjugate Chemistry*, **2011**, 22, 556-66	6.3	40
173	Phytoremediation of agriculture runoff by filamentous algae poly-culture for biomethane production, and nutrient recovery for secondary cultivation of lipid generating microalgae. *Bioresource Technology*, **2016**, 222, 294-308	11	40
172	Physiologic and pathophysiologic consequences of altered sialylation and glycosylation on ion channel function. *Biochemical and Biophysical Research Communications*, **2014**, 453, 243-53	3.4	39
171	Durable SARS-CoV-2 B cell immunity after mild or severe disease. *Journal of Clinical Investigation*, **2021**, 131,	15.9	39
170	The impact of anti-apoptotic gene Bcl-2 expression on CHO central metabolism. *Metabolic Engineering*, **2014**, 25, 92-102	9.7	37
169	Mixed Trophic State Production Process for Microalgal Biomass with High Lipid Content for Generating Biodiesel and Biogas. *Bioenergy Research*, **2014**, 7, 1174-1185	3.1	37
168	Large-scale screening identifies a novel microRNA, miR-15a-3p, which induces apoptosis in human cancer cell lines. *RNA Biology*, **2013**, 10, 287-300	4.8	37

167	Enhancement of cell proliferation in various mammalian cell lines by gene insertion of a cyclin-dependent kinase homolog. *BMC Biotechnology*, **2007**, 7, 71	3.5	37
166	Antiapoptosis chemicals prolong productive lifetimes of mammalian cells upon Sindbis virus vector infection. *Biotechnology and Bioengineering*, **1999**, 65, 298-305	4.9	37
165	Effects of plasmid amplification and recombinant gene expression on the growth kinetics of recombinant E. coli. *Biotechnology and Bioengineering*, **1989**, 33, 1425-36	4.9	37
164	Genome-scale reconstructions of the mammalian secretory pathway predict metabolic costs and limitations of protein secretion. *Nature Communications*, **2020**, 11, 68	17.4	37
163	Complex-type biantennary N-glycans of recombinant human transferrin from Trichoplusia ni insect cells expressing mammalian [beta]-1,4-galactosyltransferase and [beta]-1,2-N-acetylglucosaminyltransferase II. *Glycobiology*, **2003**, 13, 23-34	5.8	36
162	High-throughput screening and selection of mammalian cells for enhanced protein production. *Biotechnology Journal*, **2016**, 11, 853-65	5.6	36
161	Application of C flux analysis to identify high-productivity CHO metabolic phenotypes. *Metabolic Engineering*, **2017**, 43, 218-225	9.7	35
160	An improved colony PCR procedure for genetic screening of Chlorella and related microalgae. *Biotechnology Letters*, **2011**, 33, 1615-9	3	35
159	Anti-apoptotic genes Aven and E1B-19K enhance performance of BHK cells engineered to express recombinant factor VIII in batch and low perfusion cell culture. *Biotechnology and Bioengineering*, **2007**, 98, 825-41	4.9	35
158	The non-apoptotic action of Bcl-xL: regulating Ca(2+) signaling and bioenergetics at the ER-mitochondrion interface. *Journal of Bioenergetics and Biomembranes*, **2016**, 48, 211-25	3.7	35
157	Predicting Dynamic Metabolic Demands in the Photosynthetic Eukaryote. *Plant Physiology*, **2018**, 176, 450-462	6.6	34
156	Synergistic co-digestion of wastewater grown algae-bacteria polyculture biomass and cellulose to optimize carbon-to-nitrogen ratio and application of kinetic models to predict anaerobic digestion energy balance. *Bioresource Technology*, **2018**, 269, 210-220	11	34
155	False positive reactivity of recombinant, diagnostic, glycoproteins produced in High Five insect cells: effect of glycosylation. *Journal of Immunological Methods*, **2008**, 330, 130-6	2.5	34
154	Environmental stimuli drive a transition from cooperation to competition in synthetic phototrophic communities. *Nature Microbiology*, **2019**, 4, 2184-2191	26.6	33
153	Characterization of N-acetylneuraminic acid synthase isoenzyme 1 from Campylobacter jejuni. *Biochemical Journal*, **2004**, 383, 83-9	3.8	33
152	II. Electrostatic effect in the aggregation of heat-denatured RNase A and implications for protein additive design **1998**, 59, 281-285		32
151	Expression of a functional Drosophila melanogaster CMP-sialic acid synthetase. Differential localization of the Drosophila and human enzymes. *Journal of Biological Chemistry*, **2006**, 281, 15929-40	5.4	32
150	COVID-19 serology at population scale: SARS-CoV-2-specific antibody responses in saliva **2020**,		32

149	Recombinant Antibody Production in CHO and NS0 Cells: Differences and Similarities. *BioDrugs*, **2018**, 32, 571-584	7.9	32
148	Systems Glycobiology: Integrating Glycogenomics, Glycoproteomics, Glycomics, and Other Omics Data Sets to Characterize Cellular Glycosylation Processes. *Journal of Molecular Biology*, **2016**, 428, 3337-3352	6.5	31
147	Improvement of product yields by temperature-shifting of Escherichia coli cultures containing plasmid pOU140. *Biotechnology and Bioengineering*, **1987**, 29, 513-9	4.9	31
146	Assessment of the coordinated role of ST3GAL3, ST3GAL4 and ST3GAL6 on the α2,3 sialylation linkage of mammalian glycoproteins. *Biochemical and Biophysical Research Communications*, **2015**, 463, 211-5	3.4	30
145	E2F-1 overexpression increases viable cell density in batch cultures of Chinese hamster ovary cells. *Journal of Biotechnology*, **2008**, 138, 103-6	3.7	30
144	Elucidation of the CHO Super-Ome (CHO-SO) by Proteoinformatics. *Journal of Proteome Research*, **2015**, 14, 4687-703	5.6	29
143	Feast or famine: autophagy control and engineering in eukaryotic cell culture. *Current Opinion in Biotechnology*, **2008**, 19, 518-26	11.4	29
142	Integrated Genome and Protein Editing Swaps α2,6 Sialylation for α2,3 Sialic Acid on Recombinant Antibodies from CHO. *Biotechnology Journal*, **2017**, 12, 1600502	5.6	28
141	Optimization of tetracycline-responsive recombinant protein production and effect on cell growth and ER stress in mammalian cells. *Biotechnology and Bioengineering*, **2005**, 91, 722-32	4.9	27
140	Inhibiting the apoptosis pathway using MDM2 in mammalian cell cultures. *Biotechnology and Bioengineering*, **2007**, 97, 601-14	4.9	26
139	Comprehensive Glycoproteomic Analysis of Chinese Hamster Ovary Cells. *Analytical Chemistry*, **2018**, 90, 14294-14302	7.8	26
138	Model-based analysis of N-glycosylation in Chinese hamster ovary cells. *PLoS ONE*, **2017**, 12, e0175376	3.7	25
137	Efficient lipid extraction and quantification of fatty acids from algal biomass using accelerated solvent extraction (ASE). *RSC Advances*, **2016**, 6, 29127-29134	3.7	25
136	An HPLC-MALDI MS method for N-glycan analyses using smaller size samples: application to monitor glycan modulation by medium conditions. *Glycoconjugate Journal*, **2009**, 26, 1135-49	3	25
135	A comparison of mathematical model predictions to experimental measurements for growth and recombinant protein production in induced cultures of Escherichia coli. *Biotechnology and Bioengineering*, **1990**, 36, 124-34	4.9	25
134	High-Throughput Lipidomic and Transcriptomic Analysis To Compare SP2/0, CHO, and HEK-293 Mammalian Cell Lines. *Analytical Chemistry*, **2017**, 89, 1477-1485	7.8	24
133	GlycoFly: a database of Drosophila N-linked glycoproteins identified using SPEG--MS techniques. *Journal of Proteome Research*, **2011**, 10, 2777-84	5.6	24
132	A bacterial signal peptidase enhances processing of a recombinant single chain antibody fragment in insect cells. *Biochemical and Biophysical Research Communications*, **1999**, 255, 444-50	3.4	24

131	Mineral and non-carbon nutrient utilization and recovery during sequential phototrophic-heterotrophic growth of lipid-rich algae. *Applied Microbiology and Biotechnology*, **2014**, 98, 5261-73	5.7	23
130	Enhanced transient recombinant protein production in CHO cells through the co-transfection of the product gene with Bcl-xL. *Biotechnology Journal*, **2014**, 9, 1164-74	5.6	23
129	N-glycan structures of human transferrin produced by Lymantria dispar (gypsy moth) cells using the LdMNPV expression system. *Glycobiology*, **2003**, 13, 539-48	5.8	23
128	A novel sugar analog enhances sialic acid production and biotherapeutic sialylation in CHO cells. *Biotechnology and Bioengineering*, **2017**, 114, 1899-1902	4.9	22
127	GlycoFish: a database of zebrafish N-linked glycoproteins identified using SPEG method coupled with LC/MS. *Analytical Chemistry*, **2011**, 83, 5296-303	7.8	22
126	Beta-(1 --> 4)-galactosyltransferase activity in native and engineered insect cells measured with time-resolved europium fluorescence. *Carbohydrate Research*, **2002**, 337, 2181-6	2.9	22
125	Sex Differences in Lung Imaging and SARS-CoV-2 Antibody Responses in a COVID-19 Golden Syrian Hamster Model. *MBio*, **2021**, 12, e0097421	7.8	22
124	Application of microarrays to identify and characterize genes involved in attachment dependence in HeLa cells. *Metabolic Engineering*, **2007**, 9, 241-51	9.7	21
123	Regulating apoptosis in mammalian cell cultures. *Cytotechnology*, **2006**, 50, 77-92	2.2	21
122	Production of recombinant proteins by baculovirus-infected gypsy moth cells. *Biotechnology Progress*, **1991**, 7, 462-7	2.8	21
121	Synthetic microbial communities of heterotrophs and phototrophs facilitate sustainable growth. *Nature Communications*, **2020**, 11, 3803	17.4	21
120	Combining high-throughput screening of caspase activity with anti-apoptosis genes for development of robust CHO production cell lines. *Biotechnology Progress*, **2010**, 26, 1367-81	2.8	20
119	Bcl-2 inhibits apoptosis and extends recombinant protein production in cells infected with Sindbis viral vectors. *Cytotechnology*, **1996**, 22, 169-78	2.2	20
118	Strategies for Engineering Protein N-Glycosylation Pathways in Mammalian Cells. *Methods in Molecular Biology*, **2015**, 1321, 287-305	1.4	19
117	Butyrated ManNAc analog improves protein expression in Chinese hamster ovary cells. *Biotechnology and Bioengineering*, **2018**, 115, 1531-1541	4.9	19
116	A peptide-linked recombinant glucocerebrosidase for targeted neuronal delivery: Design, production, and assessment. *Journal of Biotechnology*, **2016**, 221, 1-12	3.7	19
115	Proliferation and pluripotency of human embryonic stem cells maintained on type I collagen. *Stem Cells and Development*, **2010**, 19, 1923-35	4.4	19
114	Thioredoxin domain non-equivalence and anti-chaperone activity of protein disulfide isomerase mutants in vivo. *Journal of Biological Chemistry*, **1997**, 272, 22556-63	5.4	19

113	Modeling assembly, aggregation, and chaperoning of immunoglobulin G production in insect cells. *Biotechnology and Bioengineering*, **1997**, 56, 106-16	4.9	19
112	Engineering intracellular CMP-sialic acid metabolism into insect cells and methods to enhance its generation. *Biochemistry*, **2005**, 44, 7526-34	3.2	19
111	Growth kinetics of Eschericia coli containing temperature-sensitive plasmid pOU140. *Biotechnology and Bioengineering*, **1987**, 29, 1164-72	4.9	19
110	Glycosylation of IgG and IgG-Like Recombinant Therapeutic Proteins: Why Is It Important and How Can We Control It?. *Annual Review of Chemical and Biomolecular Engineering*, **2020**, 11, 311-338	8.9	18
109	Chemical caspase inhibitors enhance cell culture viabilities and protein titer. *Biotechnology Progress* , **2007**, 23, 506-11	2.8	18
108	Production of lipid-containing algal-bacterial polyculture in wastewater and biomethanation of lipid extracted residues: Enhancing methane yield through hydrothermal pretreatment and relieving solvent toxicity through co-digestion. *Science of the Total Environment*, **2019**, 653, 1377-1394	10.2	18
107	Glycoengineering of CHO Cells to Improve Product Quality. *Methods in Molecular Biology*, **2017**, 1603, 25-44	1.4	17
106	Glycoproteomic and glycomic databases. *Clinical Proteomics*, **2014**, 11, 15	5	17
105	Combinatorial genome and protein engineering yields monoclonal antibodies with hypergalactosylation from CHO cells. *Biotechnology and Bioengineering*, **2017**, 114, 2848-2856	4.9	17
104	Coupling enrichment methods with proteomics for understanding and treating disease. *Proteomics - Clinical Applications*, **2015**, 9, 33-47	3.1	17
103	Ultra-deep next generation mitochondrial genome sequencing reveals widespread heteroplasmy in Chinese hamster ovary cells. *Metabolic Engineering*, **2017**, 41, 11-22	9.7	16
102	Genome Sequence of the Oleaginous Green Alga, UTEX 395. *Frontiers in Bioengineering and Biotechnology*, **2018**, 6, 37	5.8	16
101	An unconventional uptake rate objective function approach enhances applicability of genome-scale models for mammalian cells. *Npj Systems Biology and Applications*, **2019**, 5, 25	5	16
100	MiRNA mimic screen for improved expression of functional neurotensin receptor from HEK293 cells. *Biotechnology and Bioengineering*, **2015**, 112, 1632-43	4.9	16
99	Metabolic engineering II. Eukaryotic systems. *Biotechnology and Bioengineering*, **2002**, 79, 509-31	4.9	16
98	Engineering the assembly pathway of the baculovirus-insect cell expression system. *Annals of the New York Academy of Sciences*, **1994**, 721, 208-17	6.5	16
97	Impact of nucleotide sugar metabolism on protein N-glycosylation in Chinese Hamster Ovary (CHO) cell culture. *Current Opinion in Chemical Engineering*, **2018**, 22, 167-176	5.4	16
96	Redistribution of metabolic fluxes in by variation of media nitrogen concentration. *Metabolic Engineering Communications*, **2015**, 2, 124-131	6.5	15

95	Antigen retrieval to improve the immunocytochemistry detection of sigma-1 receptors and ER chaperones. *Histochemistry and Cell Biology*, **2011**, 135, 627-37	2.4	15
94	Genome-scale RNA interference screen identifies antizyme 1 (OAZ1) as a target for improvement of recombinant protein production in mammalian cells. *Biotechnology and Bioengineering*, **2016**, 113, 2403-15	4.9	15
93	Combining Butyrated ManNAc with Glycoengineered CHO Cells Improves EPO Glycan Quality and Production. *Biotechnology Journal*, **2019**, 14, e1800186	5.6	15
92	Molecular Cloning and Characterization of a Novel -Amylase from Antarctic Sea Ice Bacterium sp. M175 and Its Primary Application in Detergent. *BioMed Research International*, **2018**, 2018, 3258383	3	14
91	Exploiting the proteomics revolution in biotechnology: from disease and antibody targets to optimizing bioprocess development. *Current Opinion in Biotechnology*, **2014**, 30, 80-6	11.4	14
90	Protein and genome evolution in Mammalian cells for biotechnology applications. *Molecular Biotechnology*, **2009**, 42, 216-23	3	14
89	Optimization of One-Step In Situ Transesterification Method for Accurate Quantification of EPA in Nannochloropsis gaditana. *Applied Sciences (Switzerland)*, **2016**, 6, 343	2.6	14
88	DmSAS is required for sialic acid biosynthesis in cultured Drosophila third instar larvae CNS neurons. *ACS Chemical Biology*, **2011**, 6, 1287-95	4.9	13
87	Egr1 and Gas6 facilitate the adaptation of HEK-293 cells to serum-free media by conferring enhanced viability and higher growth rates. *Biotechnology and Bioengineering*, **2008**, 99, 1443-52	4.9	13
86	Proteogenomic Annotation of Chinese Hamsters Reveals Extensive Novel Translation Events and Endogenous Retroviral Elements. *Journal of Proteome Research*, **2019**, 18, 2433-2445	5.6	12
85	The beta-3 adrenergic agonist (CL-316,243) restores the expression of down-regulated fatty acid oxidation genes in type 2 diabetic mice. *Nutrition and Metabolism*, **2015**, 12, 8	4.6	12
84	Microalgae as a Feedstock for Biofuel Precursors and Value-Added Products: Green Fuels and Golden Opportunities. *BioResources*, **2015**, 11,	1.3	12
83	An improved in vitro and in vivo Sindbis virus expression system through host and virus engineering. *Virus Research*, **2009**, 141, 1-12	6.4	12
82	Increased expression of the integral membrane protein ErbB2 in Chinese hamster ovary cells expressing the anti-apoptotic gene Bcl-xL. *Protein Expression and Purification*, **2009**, 67, 41-7	2	12
81	Chaperone and foldase coexpression in the baculovirus-insect cell expression system. *Cytotechnology*, **1996**, 20, 149-59	2.2	12
80	Transient and stable expression of the neurotensin receptor NTS1: a comparison of the baculovirus-insect cell and the T-REx-293 expression systems. *PLoS ONE*, **2013**, 8, e63679	3.7	11
79	Production and antigenic properties of influenza virus from suspension MDCK-siat7e cells in a bench-scale bioreactor. *Vaccine*, **2010**, 28, 7193-201	4.1	11
78	Microfluidic bubbler facilitates near complete mass transfer for sustainable multiphase and microbial processing. *Biotechnology and Bioengineering*, **2016**, 113, 1924-33	4.9	11

77	Utilizing genome-scale models to optimize nutrient supply for sustained algal growth and lipid productivity. *Npj Systems Biology and Applications*, **2019**, 5, 33	5	10
76	Comparison of biomass and lipid production under ambient carbon dioxide vigorous aeration and 3% carbon dioxide condition among the lead candidate Chlorella strains screened by various photobioreactor scales. *Bioresource Technology*, **2015**, 198, 246-55	11	10
75	Glycoengineering of Mammalian Expression Systems on a Cellular Level. *Advances in Biochemical Engineering/Biotechnology*, **2021**, 175, 37-69	1.7	10
74	Multi-tissue computational modeling analyzes pathophysiology of type 2 diabetes in MKR mice. *PLoS ONE*, **2014**, 9, e102319	3.7	10
73	Cells by design: a mini-review of targeting cell engineering using DNA microarrays. *Molecular Biotechnology*, **2008**, 39, 105-11	3	10
72	Investigating the secretory pathway of the baculovirus-insect cell system using a secretory green fluorescent protein. *Biotechnology Progress*, **2000**, 16, 716-23	2.8	10
71	Modeling of nitrogen fixation and polymer production in the heterotrophic diazotroph DJ. *Metabolic Engineering Communications*, **2020**, 11, e00132	6.5	9
70	Identifying HIPK1 as Target of miR-22-3p Enhancing Recombinant Protein Production From HEK 293 Cell by Using Microarray and HTP siRNA Screen. *Biotechnology Journal*, **2018**, 13, 1700342	5.6	9
69	Lessons from the Hamster: Cricetulus griseus Tissue and CHO Cell Line Proteome Comparison. *Journal of Proteome Research*, **2017**, 16, 3672-3687	5.6	9
68	Polyprenyl lipid synthesis in mammalian cells expressing human cis-prenyl transferase. *Biochemical and Biophysical Research Communications*, **2005**, 331, 379-83	3.4	9
67	Implications and applications of apoptosis in cell culture. *Current Opinion in Biotechnology*, **1995**, 6, 198-202	10.4	9
66	Baculovirus expression of gene 6 of the IDIR strain of group B rotavirus (GBR): coding assignment of the major inner capsid protein. *Virology*, **1993**, 193, 367-75	3.6	9
65	Creating a synthetic lichen: Mutualistic co-culture of fungi and extracellular polysaccharide-secreting cyanobacterium Nostoc PCC 7413. *Algal Research*, **2020**, 45, 101755	5	9
64	Anaerobic digestion restricted to phase I for nutrient release and energy production using waste-water grown Chlorella vulgaris. *Chemical Engineering Journal*, **2018**, 352, 756-764	14.7	8
63	Cellular traffic cops: the interplay between lipids and proteins regulates vesicular formation, trafficking, and signaling in mammalian cells. *Current Opinion in Biotechnology*, **2015**, 36, 215-21	11.4	8
62	Directed evolution of mammalian anti-apoptosis proteins by somatic hypermutation. *Protein Engineering, Design and Selection*, **2012**, 25, 27-38	1.9	8
61	Characterization of intact glycopeptides reveals the impact of culture media on site-specific glycosylation of EPO-Fc fusion protein generated by CHO-GS cells. *Biotechnology and Bioengineering*, **2019**, 116, 2303-2315	4.9	7
60	The importance and future of biochemical engineering. *Biotechnology and Bioengineering*, **2020**, 117, 2305-2318	4.9	7

59	One-Step Enrichment of Intact Glycopeptides From Glycoengineered Chinese Hamster Ovary Cells. *Frontiers in Chemistry*, **2020**, 8, 240	5	7
58	Methods for Using Small Non-Coding RNAs to Improve Recombinant Protein Expression in Mammalian Cells. *Genes*, **2018**, 9,	4.2	7
57	Increased expression of the integral membrane proteins EGFR and FGFR3 in anti-apoptotic Chinese hamster ovary cell lines. *Biotechnology and Applied Biochemistry*, **2012**, 59, 155-62	2.8	7
56	Partners for life: building microbial consortia for the future. *Current Opinion in Biotechnology*, **2020**, 66, 292-300	11.4	7
55	Application of the CRISPR/Cas9 Gene Editing Method for Modulating Antibody Fucosylation in CHO Cells. *Methods in Molecular Biology*, **2018**, 1850, 237-257	1.4	7
54	Pac-Man for biotechnology: co-opting degrons for targeted protein degradation to control and alter cell function. *Current Opinion in Biotechnology*, **2015**, 36, 199-204	11.4	6
53	Proline-Rich Chaperones Are Compared Computationally and Experimentally for Their Abilities to Facilitate Recombinant Butyrylcholinesterase Tetramerization in CHO Cells. *Biotechnology Journal*, **2018**, 13, e1700479	5.6	6
52	Tat-tetanus toxin fragment C: a novel protein delivery vector and its use with photochemical internalization. *Journal of Drug Targeting*, **2013**, 21, 662-74	5.4	6
51	Evidence for a mutualistic relationship between the cyanobacteria Nostoc and fungi Aspergilli in different environments. *Applied Microbiology and Biotechnology*, **2020**, 104, 6413-6426	5.7	5
50	Analysis and metabolic engineering of lipid-linked oligosaccharides in glycosylation-deficient CHO cells. *Biochemical and Biophysical Research Communications*, **2010**, 395, 36-41	3.4	5
49	Durable SARS-CoV-2 B cell immunity after mild or severe disease **2020**,		5
48	A Linkage-specific Sialic Acid Labeling Strategy Reveals Different Site-specific Glycosylation Patterns in SARS-CoV-2 Spike Protein Produced in CHO and HEK Cell Substrates. *Frontiers in Chemistry*, **2021**, 9, 735558	5	5
47	Effects of promoter induction and copy number amplification on cloned gene expression and growth of recombinant cell cultures. *Annals of the New York Academy of Sciences*, **1990**, 589, 111-20	6.5	4
46	Apoptosis in Biotechnology: Its Role in Mammalian Cell Culture and Methods of Inhibition. *BioProcessing: Advances and Trends in Biological Product Development*, **2002**, 1, 61-68		4
45	Expanded Chinese hamster organ and cell line proteomics profiling reveals tissue-specific functionalities. *Scientific Reports*, **2020**, 10, 15841	4.9	4
44	Improved protein expression in HEK293 cells by over-expressing miR-22 and knocking-out its target gene, HIPK1. *New Biotechnology*, **2020**, 54, 28-33	6.4	4
43	Progressing from transient to stable packaging cell lines for continuous production of lentiviral and gammaretroviral vectors. *Current Opinion in Chemical Engineering*, **2018**, 22, 128-137	5.4	4
42	Harnessing Chinese hamster ovary cell proteomics for biopharmaceutical processing. *Pharmaceutical Bioprocessing*, **2014**, 2, 421-435		3

41	Prospects of Multiproduct Algal Biorefineries Involving Cascading Processing of the Biomass Employing a Zero-Waste Approach. *Current Pollution Reports*,1	7.6	3
40	Stable Ectopic Expression of ST6GALNAC5 Induces Autocrine MET Activation and Anchorage-Independence in MDCK Cells. *PLoS ONE*, **2016**, 11, e0148075	3.7	3
39	Genome-scale reconstructions of the mammalian secretory pathway predict metabolic costs and limitations of protein secretion		3
38	Metabolic engineering challenges of extending N-glycan pathways in Chinese hamster ovary cells. *Metabolic Engineering*, **2020**, 61, 301-314	9.7	3
37	Genome-Wide High-Throughput RNAi Screening for Identification of Genes Involved in Protein Production. *Methods in Molecular Biology*, **2018**, 1850, 209-219	1.4	3
36	Achieving high throughput sequencing of a cDNA library utilizing an alternative protocol for the bench top next-generation sequencing system. *Journal of Microbiological Methods*, **2013**, 92, 122-6	2.8	2
35	The interplay of protein engineering and glycoengineering to fine-tune antibody glycosylation and its impact on effector functions. *Biotechnology and Bioengineering*, **2022**, 119, 102-117	4.9	2
34	Proteomics in Cell Culture: From Genomics to Combined Omics for Cell Line Engineering and Bioprocess Development. *Cell Engineering*, **2015**, 591-614		2
33	Mechanistic and data-driven modeling of protein glycosylation. *Current Opinion in Chemical Engineering*, **2021**, 32, 100690	5.4	2
32	The impact of sialylation linkage-type on the pharmacokinetics of recombinant butyrylcholinesterases. *Biotechnology and Bioengineering*, **2020**, 117, 157-166	4.9	2
31	Metabolic engineering of CHO cells to prepare glycoproteins. *Emerging Topics in Life Sciences*, **2018**, 2, 433-442	3.5	2
30	Glycoengineering of Aspergillus nidulans to produce precursors for humanized N-glycan structures. *Metabolic Engineering*, **2021**, 67, 153-163	9.7	2
29	Kinetic, metabolic, and statistical analytics: addressing metabolic transport limitations among organelles and microbial communities. *Current Opinion in Biotechnology*, **2021**, 71, 91-97	11.4	2
28	I. Study of protein aggregation due to heat denaturation: A structural approach using circular dichroism spectroscopy, nuclear magnetic resonance, and static light scattering **1998**, 59, 273		2
27	Exploiting the Molecular Genetics of Microalgae **2015**, 331-352		1
26	Genetically engineered viral antigens from insect cell culture. *Annals of the New York Academy of Sciences*, **1992**, 665, 210-8	6.5	1
25	Epigenetic comparison of CHO hosts and clones reveals divergent methylation and transcription patterns across lineages.. *Biotechnology and Bioengineering*, **2022**,	4.9	1
24	Metabolic Analysis of the Asparagine and Glutamine Dynamics in an Industrial CHO Fed-Batch Process. *Biotechnology and Bioengineering*, **2021**,	4.9	1

23	Glycoproteomic Characterization of FUT8 Knock-Out CHO Cells Reveals Roles of FUT8 in the Glycosylation. *Frontiers in Chemistry*, **2021**, 9, 755238	5	1
22	Controlling apoptosis to optimize yields of proteins from mammalian cells. *Methods in Molecular Biology*, **2012**, 801, 111-23	1.4	1
21	Elucidating the impact of cottonseed hydrolysates on CHO cell culture performance through transcriptomic analysis. *Applied Microbiology and Biotechnology*, **2021**, 105, 271-285	5.7	1
20	Taking the pulse of bioprocesses: at-line and in-line monitoring of mammalian cell cultures. *Current Opinion in Biotechnology*, **2021**, 71, 191-197	11.4	1
19	Identification of novel inhibitory metabolites and impact verification on growth and protein synthesis in mammalian cells. *Metabolic Engineering Communications*, **2021**, 13, e00182	6.5	1
18	II. Electrostatic effect in the aggregation of heat-denatured RNase A and implications for protein additive design **1998**, 59, 281		1
17	Comparative systeomics to elucidate physiological differences between CHO and SP2/0 cell lines.. *Scientific Reports*, **2022**, 12, 3280	4.9	1
16	Chromosomal instability drives convergent and divergent evolution toward advantageous inherited traits in mammalian CHO bioproduction lineages.. *IScience*, **2022**, 25, 104074	6.1	1
15	Chemical speciation of trace metals in mammalian cell culture media: looking under the hood to boost cellular performance and product quality. *Current Opinion in Biotechnology*, **2021**, 71, 216-224	11.4	0
14	Redox as a bioprocess parameter: analytical redox quantification in biological therapeutic production. *Current Opinion in Biotechnology*, **2021**, 71, 49-54	11.4	0
13	Examining the impact of carbon dioxide levels and modulation of resulting hydrogen peroxide in Chlorella vulgaris. *Algal Research*, **2021**, 60, 102492	5	0
12	4.1 Control of Biotheraputics Glycosylation **2014**, 247-279		
11	Membrane Protein Expression in Mammalian Cells **2011**, 139-165		
10	Measurement of sialic acid content on recombinant membrane proteins. *BMC Proceedings*, **2011**, 5 Suppl 8, P59	2.3	
9	Glycoengineering and Modeling of Protein N-Glycosylation. *Cell Engineering*, **2009**, 217-231		
8	Chaperone and foldase coexpression in the baculovirus-insect cell expression system. *Current Applications of Cell Culture Engineering*, **1996**, 149-159		
7	Identification and expression of the outer capsid protein (VP4) of the IDIR strain of group B rotavirus. *Virology*, **1993**, 194, 724-33	3.6	
6	Inhibiting Apoptosis in Cell Culture Using Multiple Inhibitors **2005**, 59-65		

5	A genome-scale nutrient minimization forecast algorithm for controlling essential amino acid levels in CHO cell cultures. *Biotechnology and Bioengineering*, **2021**, 119, 435	4.9
4	Mapping the path forward to next generation algal technologies: Workshop on understanding the rules of life and complexity in algal systems. *Algal Research*, **2021**, 60, 102520	5
3	Insect Cells and Larvae, Gene Expression Systems1	
2	MicroRNAs as Engineering Targets: Pathway Manipulation to Impact Bioprocess Phenotypes **2012**, 65-85	
1	N-Acetylneuraminic Acid Synthase (NANS) **2014**, 1523-1536	