Nicole Borth

List of Publications by Year
in descending order

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127 papers	5,345 citations	81900 39 h-index	98798 67 g-index
134 all docs	134 docs citations	134 times ranked	5237 citing authors

#	Article	IF	Citations
1	Improvement of Lactic Acid Production in <i>Saccharomyces cerevisiae</i> by Cell Sorting for High Intracellular pH. Applied and Environmental Microbiology, 2006, 72, 5492-5499.	3.1	351
2	Effects of gene dosage, promoters, and substrates on unfolded protein stress of recombinantPichia pastoris. Biotechnology and Bioengineering, 2004, 85, 367-375.	3.3	243
3	Recon 2.2: from reconstruction to model of human metabolism. Metabolomics, 2016, 12, 109.	3.0	243
4	A Consensus Genome-scale Reconstruction of Chinese Hamster Ovary Cell Metabolism. Cell Systems, 2016, 3, 434-443.e8.	6.2	205
5	Process parameter shifting: Part I. Effect of DOT, pH, and temperature on the performance of Epo-Fc expressing CHO cells cultivated in controlled batch bioreactors. Biotechnology and Bioengineering, 2006, 94, 1033-1044.	3.3	186
6	Effect of Increased Expression of Protein Disulfide Isomerase and Heavy Chain Binding Protein on Antibody Secretion in a Recombinant CHO Cell Line. Biotechnology Progress, 2008, 21, 106-111.	2.6	164
7	Chinese hamster genome sequenced from sorted chromosomes. Nature Biotechnology, 2013, 31, 694-695.	17.5	160
8	Applications of cell sorting in biotechnology. Microbial Cell Factories, 2006, 5, 12.	4.0	125
9	Genetically different wine yeasts isolated from Austrian vine-growing regions influence wine aroma differently and contain putative hybrids betweenSaccharomyces cerevisiaeandSaccharomyces kudriavzevii. FEMS Yeast Research, 2007, 7, 953-965.	2.3	121
10	Nucleotide and Nucleotide Sugar Analysis by Liquid Chromatography-Electrospray Ionization-Mass Spectrometry on Surface-Conditioned Porous Graphitic Carbon. Analytical Chemistry, 2010, 82, 9782-9788.	6.5	117
11	Comprehensive genome and epigenome characterization of CHO cells in response to evolutionary pressures and over time. Biotechnology and Bioengineering, 2016, 113, 2241-2253.	3.3	112
12	Next-generation sequencing of the Chinese hamster ovary microRNA transcriptome: Identification, annotation and profiling of microRNAs as targets for cellular engineering. Journal of Biotechnology, 2011, 153, 62-75.	3.8	102
13	Assessing viability and cell-associated product of recombinant protein producing Pichia pastoris with flow cytometry. Journal of Biotechnology, 2003, 102, 281-290.	3.8	96
14	Unraveling the Chinese hamster ovary cell line transcriptome by next-generation sequencing. Journal of Biotechnology, 2011, 156, 227-235.	3.8	96
15	A reference genome of the Chinese hamster based on a hybrid assembly strategy. Biotechnology and Bioengineering, 2018, 115, 2087-2100.	3.3	95
16	Intracellular pH Distribution in Saccharomyces cerevisiae Cell Populations, Analyzed by Flow Cytometry. Applied and Environmental Microbiology, 2005, 71, 1515-1521.	3.1	94
17	Efficient selection of high-producing subclones during gene amplification of recombinant Chinese hamster ovary cells by flow cytometry and cell sorting. Biotechnology and Bioengineering, 2000, 71, 266-273.	3.3	84
18	Dynamic mRNA and miRNA profiling of CHOâ€K1 suspension cell cultures. Biotechnology Journal, 2012, 7, 500-515.	3.5	83

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19	Chitosan hydrogel formation using laccase activated phenolics as cross-linkers. Carbohydrate Polymers, 2017, 157, 814-822.	10.2	78
20	CHO microRNA engineering is growing up: Recent successes and future challenges. Biotechnology Advances, 2013, 31, 1501-1513.	11.7	77
21	Chinese hamster genome database: An online resource for the CHO community at www.CHOgenome.org. Biotechnology and Bioengineering, 2012, 109, 1353-1356.	3.3	74
22	Process parameter shifting: Part II. Biphasic cultivationâ€"A tool for enhancing the volumetric productivity of batch processes using Epo-Fc expressing CHO cells. Biotechnology and Bioengineering, 2006, 94, 1045-1052.	3.3	72
23	Stable overexpression of miR-17 enhances recombinant protein production of CHO cells. Journal of Biotechnology, 2014, 175, 38-44.	3.8	67
24	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.	3.3	67
25	Changes during subclone development and ageing of human antibody-producing recombinant CHO cells. Journal of Biotechnology, 1999, 69, 215-226.	3.8	63
26	Construction of a Public CHO Cell Line Transcript Database Using Versatile Bioinformatics Analysis Pipelines. PLoS ONE, 2014, 9, e85568.	2.5	57
27	Reducing Recon 2 for steady-state flux analysis of HEK cell culture. Journal of Biotechnology, 2014, 184, 172-178.	3.8	54
28	Immunoglobulin G specifically binding plant N-glycans with high affinity could be generated in rabbits but not in mice. Glycobiology, 2006, 16, 349-357.	2.5	52
29	miRNAs â€" pathway engineering of CHO cell factories that avoids translational burdening. Trends in Biotechnology, 2012, 30, 405-406.	9.3	50
30	CRISPRâ€Based Targeted Epigenetic Editing Enables Gene Expression Modulation of the Silenced Betaâ€Galactoside Alphaâ€2,6â€Sialyltransferase 1 in CHO Cells. Biotechnology Journal, 2018, 13, e1700217.	3.5	50
31	Construction of a Stability Landscape of the CH3 Domain of Human IgG1 by Combining Directed Evolution with High Throughput Sequencing. Journal of Molecular Biology, 2012, 423, 397-412.	4.2	48
32	Selection of CHO host cell subclones with increased specific antibody production rates by repeated cycles of transient transfection and cell sorting. Biotechnology and Bioengineering, 2011, 108, 386-394.	3.3	46
33	Computational identification of microRNA gene loci and precursor microRNA sequences in CHO cell lines. Journal of Biotechnology, 2012, 158, 151-155.	3.8	46
34	Utilization and evaluation of CHOâ€specific sequence databases for mass spectrometry based proteomics. Biotechnology and Bioengineering, 2012, 109, 1386-1394.	3.3	46
35	What CHO is made of: Variations in the biomass composition of Chinese hamster ovary cell lines. Metabolic Engineering, 2020, 61, 288-300.	7.0	46
36	Growth, productivity and protein glycosylation in a CHO EpoFc producer cell line adapted to glutamine-free growth. Journal of Biotechnology, 2012, 157, 295-303.	3.8	45

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37	A screening method to assess biological effects of microRNA overexpression in Chinese hamster ovary cells. Biotechnology and Bioengineering, 2012, 109, 1376-1385.	3.3	45
38	Highâ€throughput screening and selection of mammalian cells for enhanced protein production. Biotechnology Journal, 2016, 11, 853-865.	3.5	45
39	Modulation of Neural Carbohydrate Epitope Expression in Drosophila melanogaster Cells. Journal of Biological Chemistry, 2006, 281, 3343-3353.	3.4	44
40	What can mathematical modelling say about CHO metabolism and protein glycosylation?. Computational and Structural Biotechnology Journal, 2017, 15, 212-221.	4.1	44
41	A Dual-Enzyme Hydrogen Peroxide Generation Machinery in Hydrogels Supports Antimicrobial Wound Treatment. ACS Applied Materials & Interfaces, 2017, 9, 15307-15316.	8.0	44
42	Changes in Chromosome Counts and Patterns in CHO Cell Lines upon Generation of Recombinant Cell Lines and Subcloning. Biotechnology Journal, 2018, 13, e1700495.	3.5	40
43	Screening for improved cell performance: Selection of subclones with altered production kinetics or improved stability by cell sorting. Biotechnology and Bioengineering, 2004, 88, 699-706.	3.3	39
44	Analysis of changes during subclone development and ageing of human antibody-producing heterohybridoma cells by Northern blot and flow cytometry1This paper was presented at the American Chemical Society Spring National Meeting in San Francisco, April 1997.1. Journal of Biotechnology, 1999, 67, 57-66.	3.8	38
45	Anti-inflammatory and anti-oxidant properties of laccase-synthesized phenolic-O-carboxymethyl chitosan hydrogels. New Biotechnology, 2018, 40, 236-244.	4.4	38
46	Epigenetic regulation of gene expression in Chinese Hamster Ovary cells in response to the changing environment of a batch culture. Biotechnology and Bioengineering, 2019, 116, 677-692.	3.3	37
47	Optimization of Sorting Conditions for the Selection of Stable, High-Producing Mammalian Cell Lines. Biotechnology Progress, 1999, 15, 953-957.	2.6	36
48	CHOâ€K1 host cells adapted to growth in glutamineâ€free medium by FACSâ€assisted evolution. Biotechnology Journal, 2010, 5, 1090-1097.	3.5	36
49	CRISPR/Cas9â€Mediated Knockout of MicroRNAâ€744 Improves Antibody Titer of CHO Production Cell Lines. Biotechnology Journal, 2019, 14, e1800477.	3.5	35
50	A study on the temperature dependency and time course of the cold capture antibody secretion assay. Journal of Biotechnology, 2009, 141, 80-83.	3.8	34
51	Enhanced Genome Editing Tools For Multiâ€Gene Deletion Knockâ€Out Approaches Using Paired CRISPR sgRNAs in CHO Cells. Biotechnology Journal, 2018, 13, e1700211.	3.5	34
52	Genetic engineering approaches to improve posttranslational modification of biopharmaceuticals in different production platforms. Biotechnology and Bioengineering, 2019, 116, 2778-2796.	3.3	34
53	A comprehensive antigen production and characterisation study for easy-to-implement, specific and quantitative SARS-CoV-2 serotests. EBioMedicine, 2021, 67, 103348.	6.1	34
54	The contributions of individual galactosyltransferases to protein specific N-glycan processing in Chinese Hamster Ovary cells. Journal of Biotechnology, 2018, 282, 101-110.	3.8	32

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55	Identification of microRNAs specific for high producer CHO cell lines using steady-state cultivation. Applied Microbiology and Biotechnology, 2014, 98, 7535-7548.	3.6	29
56	Quantification of human diamine oxidase. Clinical Biochemistry, 2017, 50, 444-451.	1.9	29
57	Improvement of the energy metabolism of recombinant CHO cells by cell sorting for reduced mitochondrial membrane potential. Journal of Biotechnology, 2007, 129, 651-657.	3.8	27
58	Preselection of recombinant gene integration sites enabling high transcription rates in CHO cells using alternate start codons and recombinase mediated cassette exchange. Biotechnology and Bioengineering, 2017, 114, 2616-2627.	3.3	27
59	Modulation of mammalian translation by a ribosome-associated tRNA half. RNA Biology, 2020, 17, 1125-1136.	3.1	27
60	Characterization of a novel cell penetrating peptide derived from human Oct4. Cell Regeneration, 2014, 3, 3:2.	2.6	26
61	Transcriptomic changes in CHO cells after adaptation to suspension growth in protein-free medium analysed by a species-specific microarray. Journal of Biotechnology, 2017, 257, 13-21.	3.8	25
62	Novel Promoters Derived from Chinese Hamster Ovary Cells via In Silico and In Vitro Analysis. Biotechnology Journal, 2019, 14, e1900125.	3.5	24
63	Growth and production kinetics of human Ã— mouse and mouse hybridoma cells at reduced temperature and serum content. Journal of Biotechnology, 1992, 25, 319-331.	3.8	23
64	Flow-cytometry and cell sorting: An efficient approach to investigate productivity and cell physiology in mammalian cell factories. Methods, 2012, 56, 366-374.	3.8	23
65	Labelâ€free live cell imaging by Confocal Raman Microscopy identifies CHO host and producer cell lines. Biotechnology Journal, 2017, 12, 1600037.	3.5	23
66	OPP Labeling Enables Total Protein Synthesis Quantification in CHO Production Cell Lines at the Singleâ€Cell Level. Biotechnology Journal, 2018, 13, e1700492.	3.5	23
67	Microarray profiling of preselected CHO host cell subclones identifies gene expression patterns associated with inâ€creased production capacity. Biotechnology Journal, 2015, 10, 1625-1638.	3.5	22
68	Ultra-deep next generation mitochondrial genome sequencing reveals widespread heteroplasmy in Chinese hamster ovary cells. Metabolic Engineering, 2017, 41, 11-22.	7.0	22
69	Prediction of transcribed PIWI-interacting RNAs from CHO RNAseq data. Journal of Biotechnology, 2013, 166, 51-57.	3.8	21
70	Characterization of recombinant human diamine oxidase (rhDAO) produced in Chinese Hamster Ovary (CHO) cells. Journal of Biotechnology, 2016, 227, 120-130.	3.8	21
71	A cross-species whole genome siRNA screen in suspension-cultured Chinese hamster ovary cells identifies novel engineering targets. Scientific Reports, 2019, 9, 8689.	3.3	21
72	Endogenous microRNA clusters outperform chimeric sequence clusters in Chinese hamster ovary cells. Biotechnology Journal, 2014, 9, 538-544.	3.5	20

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73	Systematic use of synthetic 5â€²-UTR RNA structures to tune protein translation improves yield and quality of complex proteins in mammalian cell factories. Nucleic Acids Research, 2020, 48, e119-e119.	14.5	20
74	Exo70, a subunit of the exocyst complex, interacts with SNEVhPrp19/hPso4 and is involved in pre-mRNA splicing. Biochemical Journal, 2011, 438, 81-91.	3.7	19
75	Predicting favorable landing pads for targeted integrations in Chinese hamster ovary cell lines by learning stability characteristics from random transgene integrations. Computational and Structural Biotechnology Journal, 2020, 18, 3632-3648.	4.1	18
76	Rhodamine 123 fluorescence of immortal hybridoma cell lines as a function of glucose concentration. Cytometry, 1993, 14, 70-73.	1.8	17
77	Optimization of recombinant protein expression level inEscherichia coli by flow cytometry and cell sorting. Biotechnology and Bioengineering, 2002, 80, 93-99.	3.3	17
78	A metabolic CRISPR-Cas9 screen in Chinese hamster ovary cells identifies glutamine-sensitive genes. Metabolic Engineering, 2021, 66, 114-122.	7.0	17
79	Enhanced targeted DNA methylation of the CMV and endogenous promoters with dCas9-DNMT3A3L entails distinct subsequent histone modification changes in CHO cells. Metabolic Engineering, 2021, 66, 268-282.	7.0	17
80	Nuclear Flow FISH: Isolation of cell nuclei improves the determination of telomere lengths. Experimental Gerontology, 2006, 41, 230-235.	2.8	16
81	A signature of 12 microRNAs is robustly associated with growth rate in a variety of CHO cell lines. Journal of Biotechnology, 2016, 235, 150-161.	3.8	16
82	Using Titer and Titer Normalized to Confluence Are Complementary Strategies for Obtaining Chinese Hamster Ovary Cell Lines with High Volumetric Productivity of Etanercept. Biotechnology Journal, 2018, 13, e1700216.	3.5	16
83	A CRISPR/Cas9 based engineering strategy for overexpression of multiple genes in Chinese hamster ovary cells. Metabolic Engineering, 2018, 48, 72-81.	7.0	16
84	Flow Cytometric Analysis of Metabolic Stress Effects Due to Recombinant Plasmids and Proteins in Escherichia coli Production Strains. Metabolic Engineering, 1999, 1, 270-274.	7.0	15
85	Reduced quenching and extraction time for mammalian cells using filtration and syringe extraction. Journal of Biotechnology, 2014, 182-183, 97-103.	3.8	15
86	Noncoding RNAs, post-transcriptional RNA operons and Chinese hamster ovary cells. Pharmaceutical Bioprocessing, 2015, 3, 227-247.	0.8	15
87	Random epigenetic modulation of CHO cells by repeated knockdown of DNA methyltransferases increases population diversity and enables sorting of cells with higher production capacities. Biotechnology and Bioengineering, 2020, 117, 3435-3447.	3.3	15
88	Directed evolution approach to enhance efficiency and speed of outgrowth during single cell subcloning of Chinese Hamster Ovary cells. Computational and Structural Biotechnology Journal, 2020, 18, 1320-1329.	4.1	15
89	Analysis of microRNA transcription and post-transcriptional processing by Dicer in the context of CHO cell proliferation. Journal of Biotechnology, 2014, 190, 76-84.	3.8	14
90	Bioinformatic Identification of Chinese Hamster Ovary (CHO) Coldâ€Shock Genes and Biological Evidence of their Coldâ€Inducible Promoters. Biotechnology Journal, 2020, 15, e1900359.	3.5	14

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91	Annotation of additional evolutionary conserved microRNAs in CHO cells from updated genomic data. Biotechnology and Bioengineering, 2015, 112, 1488-1493.	3.3	13
92	Genetic and Epigenetic Variation across Genes Involved in Energy Metabolism and Mitochondria of Chinese Hamster Ovary Cell Lines. Biotechnology Journal, 2019, 14, e1800681.	3.5	13
93	Next-generation sequencing of the CHO cell transcriptome. BMC Proceedings, 2011, 5, P6.	1.6	11
94	Subcloning induces changes in the DNAâ€methylation pattern of outgrowing Chinese hamster ovary cell colonies. Biotechnology Journal, 2021, 16, e2000350.	3.5	11
95	Comparison of the production of a human monoclonal antibody against HIV-1 by heterohybridoma cells and recombinant CHO cells: A flow cytometric study. Cytotechnology, 1996, 22, 129-138.	1.6	9
96	Oligomannosidic glycans at Asn-110 are essential for secretion of human diamine oxidase. Journal of Biological Chemistry, 2018, 293, 1070-1087.	3.4	9
97	mRNA Transfection into CHOâ€Cells Reveals Production Bottlenecks. Biotechnology Journal, 2020, 15, 1900198.	3.5	9
98	Key Challenges in Designing CHO Chassis Platforms. Processes, 2020, 8, 643.	2.8	9
99	Towards rational glyco-engineering in CHO: from data to predictive models. Current Opinion in Biotechnology, 2021, 71, 9-17.	6.6	9
100	How to train your cell - Towards controlling phenotypes by harnessing the epigenome of Chinese hamster ovary production cell lines. Biotechnology Advances, 2022, 56, 107924.	11.7	9
101	Opening the black box: Chinese hamster ovary research goes genome scale. Pharmaceutical Bioprocessing, 2014, 2, 367-369.	0.8	8
102	Recombinant human diamine oxidase activity is not inhibited by ethanol, acetaldehyde, disulfiram, diethyldithiocarbamate or cyanamide. Alcohol, 2016, 54, 51-59.	1.7	8
103	Establishment of a strategy for the rapid generation of a monoclonal antibody against the human protein SNEV (hNMP200) by flow-cytometric cell sorting. Journal of Immunological Methods, 2005, 307, 13-23.	1.4	7
104	ChromaWizard: An open source image analysis software for multicolor fluorescence in situ hybridization analysis. Cytometry Part A: the Journal of the International Society for Analytical Cytology, 2018, 93, 749-754.	1.5	7
105	Heparin-binding motif mutations of human diamine oxidase allow the development of a first-in-class histamine-degrading biopharmaceutical. ELife, 2021, 10, .	6.0	7
106	Robust Analytical Methods for the Accurate Quantification of the Total Biomass Composition of Mammalian Cells. Methods in Molecular Biology, 2020, 2088, 119-160.	0.9	7
107	Simple, sensitive and specific quantification of diamine oxidase activity in complex matrices using newly discovered fluorophores derived from natural substrates. Inflammation Research, 2020, 69, 937-950.	4.0	6
108	Codon and signal peptide optimization for therapeutic antibody production from Chinese hamster ovary (CHO) cell. Biochemical and Biophysical Research Communications, 2022, 622, 157-162.	2.1	6

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109	Inclusion of maintenance energy improves the intracellular flux predictions of CHO. PLoS Computational Biology, 2021, 17, e1009022.	3.2	5
110	A pooled CRISPR/AsCpf1 screen using paired gRNAs to induce genomic deletions in Chinese hamster ovary cells. Biotechnology Reports (Amsterdam, Netherlands), 2021, 31, e00649.	4.4	5
111	Editorial: On the cusp of rational CHO cell engineering. Biotechnology Journal, 2015, 10, 929-930.	3.5	4
112	Transfection of glycoprotein encoding mRNA for swift evaluation of Nâ€glycan engineering strategies. Biotechnology Progress, 2020, 36, e2990.	2.6	4
113	Error propagation in constraintâ€based modeling of Chinese hamster ovary cells. Biotechnology Journal, 2021, 16, e2000320.	3.5	4
114	A continuous multistage roller reactor for animal cell culture: 1. Patterns of growth, production and catabolism of a murine hybridoma. Cytotechnology, 1990, 3, 253-258.	1.6	3
115	PTSelectâ„¢: A post-transcriptional technology that enables rapid establishment of stable CHO cell lines and surveillance of clonal variation. Journal of Biotechnology, 2021, 325, 360-371.	3.8	3
116	Diamine oxidase knockout mice are not hypersensitive to orally or subcutaneously administered histamine. Inflammation Research, 2022, 71, 497-511.	4.0	3
117	Determination of division rates of rCHO cells in high density and immobilized fermentation systems by flow cytometry. Cytotechnology, 1992, 8, 207-214.	1.6	2
118	INTERFERON-Î± PRIMES EARLY PROLIFERATIVE RESPONSE OF BONE MARROW CELLS IN VIVO. Cytokine, 1998, 10, 185-191.	3.2	2
119	CHOmine: an integrated data warehouse for CHO systems biology and modeling. Database: the Journal of Biological Databases and Curation, 2017, 2017, .	3.0	2
120	Transient manipulation of the expression level of selected growth rate correlating microRNAs does not increase growth rate in CHO-K1 cells. Journal of Biotechnology, 2019, 295, 63-70.	3.8	2
121	Human diamine oxidase cellular binding and internalization in vitro and rapid clearance in vivo are not mediated by N-glycans but by heparan sulfate proteoglycan interactions. Glycobiology, 2021, 31, 444-458.	2.5	2
122	The CHO miRNA Transcriptome. , 2012, , 49-64.		2
123	One plus one makes three: adding value by coâ€transfection of antiâ€apoptotic genes during transient gene expression. Biotechnology Journal, 2014, 9, 1101-1102.	3.5	1
124	Enhancing CHO by Systems Biotechnology. Biotechnology Journal, 2018, 13, e1800077.	3.5	1
125	Enhancing CHO by Systems Biotechnology. Biotechnology Journal, 2018, 13, e1800488.	3.5	1
126	5.2 Functional -Omics for Cell Lines and Processes: The -Omics Technologies on the Example of CHO Cells. , 2014, , 326-367.		0

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127	Glycosylation site Asn168 is important for slow in vivo clearance of recombinant human diamine oxidase heparin-binding motif mutants. Glycobiology, 2022, , .	2.5	0