Anurag S Rathore

List of Publications by Year
in descending order

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263 papers	6,646 citations	81743 39 h-index	95083 68 g-index
287 all docs	287 docs citations	287 times ranked	3986 citing authors

#	Article	IF	Citations
1	Quality by design for biopharmaceuticals. Nature Biotechnology, 2009, 27, 26-34.	9.4	654
2	Roadmap for implementation of quality by design (QbD) for biotechnology products. Trends in Biotechnology, 2009, 27, 546-553.	4.9	343
3	Process analytical technology (PAT) for biopharmaceutical products. Analytical and Bioanalytical Chemistry, 2010, 398, 137-154.	1.9	273
4	Process analytical technology (PAT) for biopharmaceutical products: Part I. concepts and applications. Biotechnology and Bioengineering, 2010, 105, 276-284.	1.7	190
5	High-throughput process development for biopharmaceutical drug substances. Trends in Biotechnology, 2011, 29, 127-135.	4.9	149
6	Process analytical technology (PAT) for biopharmaceutical products: Part II. Concepts and applications. Biotechnology and Bioengineering, 2010, 105, 285-295.	1.7	140
7	Case study and application of process analytical technology (PAT) towards bioprocessing: Use of onâ€line highâ€performance liquid chromatography (HPLC) for making realâ€time pooling decisions for process chromatography. Biotechnology and Bioengineering, 2008, 100, 306-316.	1.7	111
8	Circular Dichroism Spectroscopy as a Tool for Monitoring Aggregation in Monoclonal Antibody Therapeutics. Analytical Chemistry, 2014, 86, 11606-11613.	3.2	105
9	Continuous Processing for Production of Biopharmaceuticals. Preparative Biochemistry and Biotechnology, 2015, 45, 836-849.	1.0	98
10	Design of experiments applications in bioprocessing: Concepts and approach. Biotechnology Progress, 2014, 30, 86-99.	1.3	97
11	Defining Process Design Space for Biotech Products: Case Study of Pichia pastoris Fermentation. Biotechnology Progress, 2008, 24, 655-662.	1.3	90
12	Follow-on protein products: scientific issues, developments and challenges. Trends in Biotechnology, 2009, 27, 698-705.	4.9	88
13	Application of Multivariate Analysis toward Biotech Processes: Case Study of a Cell-Culture Unit Operation. Biotechnology Progress, 2007, 23, 61-67.	1.3	84
14	RECENT DEVELOPMENTS IN MEMBRANE-BASED SEPARATIONS IN BIOTECHNOLOGY PROCESSES: REVIEW. Preparative Biochemistry and Biotechnology, 2011, 41, 398-421.	1.0	80
15	Application of Multivariate Data Analysis for Identification and Successful Resolution of a Root Cause for a Bioprocessing Application. Biotechnology Progress, 2008, 24, 720-726.	1.3	79
16	QbD/PAT for bioprocessing: moving from theory to implementation. Current Opinion in Chemical Engineering, 2014, 6, 1-8.	3.8	75
17	Review of Computational fluid dynamics applications in biotechnology processes. Biotechnology Progress, 2011, 27, 1497-1510.	1.3	65
18	Mechanistic modeling of ion-exchange process chromatography of charge variants of monoclonal antibody products. Journal of Chromatography A, 2015, 1426, 140-153.	1.8	64

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19	Recent developments in chromatographic purification of biopharmaceuticals. Biotechnology Letters, 2018, 40, 895-905.	1.1	64
20	Avoiding antibody aggregation during processing: Establishing hold times. Biotechnology Journal, 2014, 9, 1195-1205.	1.8	60
21	Application of nearâ€infrared (NIR) spectroscopy for screening of raw materials used in the cell culture medium for the production of a recombinant therapeutic protein. Biotechnology Progress, 2010, 26, 527-531.	1.3	56
22	Chemometrics applications in biotech processes: A review. Biotechnology Progress, 2011, 27, 307-315.	1.3	52
23	Aggregation Kinetics for IgG1-Based Monoclonal Antibody Therapeutics. AAPS Journal, 2016, 18, 689-702.	2.2	51
24	Integrating systems analysis and control for implementing process analytical technology in bioprocess development. Journal of Chemical Technology and Biotechnology, 2015, 90, 583-589.	1.6	50
25	Chromatography process development in the quality by design paradigm I: Establishing a highâ€throughput process development platform as a tool for estimating â€œcharacterization spaceâ€•for an ion exchange chromatography step. Biotechnology Progress, 2013, 29, 403-414.	1.3	48
26	Continuous precipitation of process related impurities from clarified cell culture supernatant using a novel coiled flow inversion reactor (CFIR). Biotechnology Journal, 2016, 11, 1320-1331.	1.8	48
27	Case study and application of process analytical technology (PAT) towards bioprocessing: II. Use of ultraâ€performance liquid chromatography (UPLC) for making realâ€time pooling decisions for process chromatography. Biotechnology and Bioengineering, 2008, 101, 1366-1374.	1.7	47
28	Refolding of biotech therapeutic proteins expressed in bacteria: review. Journal of Chemical Technology and Biotechnology, 2013, 88, 1794-1806.	1.6	47
29	Quality by Design (QbD)-Based Process Development for Purification of a Biotherapeutic. Trends in Biotechnology, 2016, 34, 358-370.	4.9	46
30	Assessment of structural and functional similarity of biosimilar products: Rituximab as a case study. MAbs, 2018, 10, 143-158.	2.6	46
31	An NIRâ€based PAT approach for realâ€time control of loading in Protein A chromatography in continuous manufacturing of monoclonal antibodies. Biotechnology and Bioengineering, 2020, 117, 673-686.	1.7	46
32	Optimization of a refolding step for a therapeutic fusion protein in the quality by design (QbD) paradigm. Journal of Separation Science, 2012, 35, 3160-3169.	1.3	45
33	Oxidation and Deamidation of Monoclonal Antibody Products: Potential Impact on Stability, Biological Activity, and Efficacy. Journal of Pharmaceutical Sciences, 2022, 111, 903-918.	1.6	45
34	Application of process analytical technology for downstream purification of biotherapeutics. Journal of Chemical Technology and Biotechnology, 2015, 90, 228-236.	1.6	44
35	Rapid analysis of charge variants of monoclonal antibodies using non-linear salt gradient in cation-exchange high performance liquid chromatography. Journal of Chromatography A, 2015, 1406, 175-185.	1.8	43
36	Bioprocess Control: Current Progress and Future Perspectives. Life, 2021, 11, 557.	1.1	43

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37	Generalizing a two-conformation model for describing salt and temperature effects on protein retention and stability in hydrophobic interaction chromatography. Journal of Chromatography A, 2007, 1157, 197-206.	1.8	42
38	Use of computational fluid dynamics as a tool for establishing process design space for mixing in a bioreactor. Biotechnology Progress, 2012, 28, 382-391.	1.3	42
39	CFD of mixing of multiâ€phase flow in a bioreactor using population balance model. Biotechnology Progress, 2016, 32, 613-628.	1.3	42
40	Multimodal Chromatography for Purification of Biotherapeutics â€“ A Review. Current Protein and Peptide Science, 2018, 20, 4-13.	0.7	42
41	Comparison of different options for harvest of a therapeutic protein product from high cell density yeast fermentation broth. Biotechnology and Bioengineering, 2006, 94, 91-104.	1.7	41
42	Process integration and control in continuous bioprocessing. Current Opinion in Chemical Engineering, 2018, 22, 18-25.	3.8	41
43	Use of HPLC as an Enabler of Process Analytical Technology in Process Chromatography. Analytical Chemistry, 2018, 90, 7824-7829.	3.2	41
44	Glycosylation of monoclonal antibody products: Current status and future prospects. Biotechnology Progress, 2016, 32, 1091-1102.	1.3	40
45	Should charge variants of monoclonal antibody therapeutics be considered critical quality attributes?. Electrophoresis, 2016, 37, 2338-2346.	1.3	39
46	Continuous refolding of a biotech therapeutic in a novel Coiled Flow Inverter Reactor. Chemical Engineering Science, 2016, 140, 153-160.	1.9	39
47	Guidance for performing multivariate data analysis of bioprocessing data: Pitfalls and recommendations. Biotechnology Progress, 2014, 30, 967-973.	1.3	38
48	Large scale demonstration of a process analytical technology application in bioprocessing: Use of onâ€line high performance liquid chromatography for making real time pooling decisions for process chromatography. Biotechnology Progress, 2010, 26, 448-457.	1.3	37
49	A novel multimodal chromatography based single step purification process for efficient manufacturing of an E. coli based biotherapeutic protein product. Journal of Chromatography A, 2013, 1314, 188-198.	1.8	37
50	Analytical Platform for Monitoring Aggregation of Monoclonal Antibody Therapeutics. Pharmaceutical Research, 2019, 36, 152.	1.7	37
51	Mechanistic understanding of fouling of protein A chromatography resin. Journal of Chromatography A, 2016, 1459, 78-88.	1.8	36
52	Design, preparation, and evaluation of liposomal gel formulations for treatment of acne:in vitroandin vivostudies. Drug Development and Industrial Pharmacy, 2019, 45, 395-404.	0.9	36
53	Multi-period scheduling of a multi-stage multi-product bio-pharmaceutical process. Computers and Chemical Engineering, 2013, 57, 95-103.	2.0	35
54	Non-protein A purification platform for continuous processing of monoclonal antibody therapeutics. Journal of Chromatography A, 2018, 1579, 60-72.	1.8	35

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55	An overview of mechanistic modeling of liquid chromatography. Preparative Biochemistry and Biotechnology, 2019, 49, 623-638.	1.0	35
56	Integrated continuous processing of proteins expressed as inclusion bodies: GCSF as a case study. Biotechnology Progress, 2017, 33, 998-1009.	1.3	32
57	Comparison of <scp>PAT</scp> based approaches for making realâ€time pooling decisions for process chromatography â€“ use of feed forward control. Journal of Chemical Technology and Biotechnology, 2015, 90, 341-348.	1.6	31
58	Reinforcement learning based optimization of process chromatography for continuous processing of biopharmaceuticals. Chemical Engineering Science, 2021, 230, 116171.	1.9	31
59	Guidelines on Similar Biologics: Regulatory Requirements for Marketing Authorization in India. PDA Journal of Pharmaceutical Science and Technology, 2012, 66, 393-393.	0.3	30
60	Fermentanomics: Relating quality attributes of a monoclonal antibody to cell culture process variables and raw materials using multivariate data analysis. Biotechnology Progress, 2015, 31, 1586-1599.	1.3	30
61	Knowledge management in the QbD paradigm: manufacturing of biotech therapeutics. Trends in Biotechnology, 2015, 33, 381-387.	4.9	30
62	RNA dependent RNA polymerase (RdRp) as a drug target for SARS-CoV2. Journal of Biomolecular Structure and Dynamics, 2022, 40, 6039-6051.	2.0	29
63	Challenges in process control for continuous processing for production of monoclonal antibody products. Current Opinion in Chemical Engineering, 2021, 31, 100671.	3.8	29
64	CFD based mass transfer modeling of a single use bioreactor for production of monoclonal antibody biotherapeutics. Chemical Engineering Journal, 2021, 412, 128592.	6.6	29
65	Implementing PAT for single-pass tangential flow ultrafiltration for continuous manufacturing of monoclonal antibodies. Journal of Membrane Science, 2020, 613, 118492.	4.1	27
66	<scp>ATF</scp> for cell culture harvest clarification: mechanistic modelling and comparison with <scp>TFF</scp>. Journal of Chemical Technology and Biotechnology, 2017, 92, 732-740.	1.6	26
67	Integrated Chromatographic Platform for Simultaneous Separation of Charge Variants and Aggregates from Monoclonal Antibody Therapeutic Products. Biotechnology Journal, 2017, 12, 1700133.	1.8	26
68	Case study and application of process analytical technology (PAT) towards bioprocessing: Use of tryptophan fluorescence as atâ€line tool for making pooling decisions for process chromatography. Biotechnology Progress, 2009, 25, 1433-1439.	1.3	25
69	Residual on column host cell protein analysis during lifetime studies of protein A chromatography. Journal of Chromatography A, 2016, 1461, 70-77.	1.8	25
70	Enablers for QbD implementation: Mechanistic modeling for ion-exchange membrane chromatography. Journal of Membrane Science, 2016, 500, 86-98.	4.1	25
71	Amino acid supplementation for enhancing recombinant protein production in E. coli. Biotechnology and Bioengineering, 2020, 117, 2420-2433.	1.7	25
72	Applications of capillary electrophoresis for biopharmaceutical product characterization. Electrophoresis, 2022, 43, 143-166.	1.3	25

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73	Chemometrics application in biotech processes: assessing comparability across processes and scales. Journal of Chemical Technology and Biotechnology, 2014, 89, 1311-1316.	1.6	24
74	Modeling of Filtration Processesâ€"Microfiltration and Depth Filtration for Harvest of a Therapeutic Protein Expressed in Pichia pastoris at Constant Pressure. Bioengineering, 2014, 1, 260-277.	1.6	23
75	Assessing analytical comparability of biosimilars: GCSF as a case study. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2016, 1032, 165-171.	1.2	23
76	Economic assessment of continuous processing for manufacturing of biotherapeutics. Biotechnology Progress, 2021, 37, e3108.	1.3	23
77	N-Glycosylation of monoclonal antibody therapeutics: A comprehensive review on significance and characterization. Analytica Chimica Acta, 2022, 1209, 339828.	2.6	23
78	Assessment of Structural and Functional Comparability of Biosimilar Products: Trastuzumab as a Case Study. BioDrugs, 2020, 34, 209-223.	2.2	22
79	High throughput process development (HTPD) platform for membrane chromatography. Journal of Membrane Science, 2013, 442, 245-253.	4.1	21
80	Bridging the gap between PAT concepts and implementation: An integrated software platform for fermentation. Biotechnology Journal, 2016, 11, 164-171.	1.8	21
81	Mechanistic Modeling Based PAT Implementation for Ionâ€Exchange Process Chromatography of Charge Variants of Monoclonal Antibody Products. Biotechnology Journal, 2017, 12, 1700286.	1.8	21
82	Impact of mAb Aggregation on Its Biological Activity: Rituximab as a Case Study. Journal of Pharmaceutical Sciences, 2020, 109, 2684-2698.	1.6	21
83	Analytical Similarity Assessment of Biosimilars: Global Regulatory Landscape, Recent Studies and Major Advancements in Orthogonal Platforms. Frontiers in Bioengineering and Biotechnology, 2022, 10, 832059.	2.0	21
84	Using Statistical Analysis for Setting Process Validation Acceptance Criteria for Biotech Products. Biotechnology Progress, 2007, 23, 55-60.	1.3	20
85	Use of the designâ€ofâ€experiments approach for the development of a refolding technology for progenipoietinâ€1, a recombinant human cytokine fusion protein from Escherichia coli inclusion bodies. Biotechnology and Applied Biochemistry, 2009, 54, 85-92.	1.4	20
86	Chemometrics applications in biotech processes: Assessing process comparability. Biotechnology Progress, 2012, 28, 121-128.	1.3	20
87	Analytical QbD: Development of a native gel electrophoresis method for measurement of monoclonal antibody aggregates. Electrophoresis, 2014, 35, 2163-2171.	1.3	20
88	Establishing analytical comparability for â€œbiosimilarsâ€• filgrastim as a case study. Analytical and Bioanalytical Chemistry, 2014, 406, 6569-6576.	1.9	20
89	Process development in the <scp>Q</scp>b<scp>D</scp> paradigm: Role of process integration in process optimization for production of biotherapeutics. Biotechnology Progress, 2016, 32, 355-362.	1.3	20
90	Economic benefits of membrane chromatography versus packed bed column purification of therapeutic proteins expressed in microbial and mammalian hosts. Journal of Chemical Technology and Biotechnology, 2017, 92, 59-68.	1.6	20

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91	Lifetime and Aging of Chromatography Resins during Biopharmaceutical Manufacture. Trends in Biotechnology, 2018, 36, 992-995.	4.9	20
92	Process analytical technology implementation for protein refolding: GCSF as a case study. Biotechnology and Bioengineering, 2019, 116, 1039-1052.	1.7	20
93	<scp>COVIDâ€19</scp> pandemic: mechanism, diagnosis, and treatment. Journal of Chemical Technology and Biotechnology, 2021, 96, 299-308.	1.6	20
94	Chemometrics applications in biotechnology processes: Predicting column integrity and impurity clearance during reuse of chromatography resin. Biotechnology Progress, 2012, 28, 1308-1314.	1.3	19
95	Mechanistic modeling of viral filtration. Journal of Membrane Science, 2014, 458, 96-103.	4.1	19
96	Application of CFD in Bioprocessing: Separation of mammalian cells using disc stack centrifuge during production of biotherapeutics. Journal of Biotechnology, 2018, 267, 1-11.	1.9	19
97	Maximizing biomass concentration in bakerâ€™s yeast process by using a decoupled geometric controller for substrate and dissolved oxygen. Bioresource Technology, 2015, 196, 160-168.	4.8	18
98	Optimization of ion exchange sigmoidal gradients using hybrid models: Implementation of quality by design in analytical method development. Journal of Chromatography A, 2017, 1491, 145-152.	1.8	18
99	The influence of domestic manufacturing capabilities on biologic pricing in emerging economies. Nature Biotechnology, 2019, 37, 498-501.	9.4	18
100	Engineering Staphylococcal Protein A for high-throughput affinity purification of monoclonal antibodies. Biotechnology Advances, 2020, 44, 107632.	6.0	18
101	Comparative Performance of Decoupled Inputâ€“Output Linearizing Controller and Linear Interpolation PID Controller: Enhancing Biomass and Ethanol Production in Saccharomyces cerevisiae. Applied Biochemistry and Biotechnology, 2013, 169, 1219-1240.	1.4	17
102	Role of Organic Modifier and Gradient Shape in RP-HPLC Separation: Analysis of GCSF Variants. Journal of Chromatographic Science, 2015, 53, 417-423.	0.7	17
103	Opossum peptide that can neutralize rattlesnake venom is expressed in <scp>E</scp>scherichia coli. Biotechnology Progress, 2017, 33, 81-86.	1.3	17
104	Role of raw materials in biopharmaceutical manufacturing: risk analysis and fingerprinting. Current Opinion in Biotechnology, 2018, 53, 99-105.	3.3	17
105	LCâ€“MS based case-by-case analysis of the impact of acidic and basic charge variants of bevacizumab on stability and biological activity. Scientific Reports, 2021, 11, 2487.	1.6	17
106	A statistical approach for estimation of significant variables in wet attrition milling. Powder Technology, 2011, 211, 46-53.	2.1	16
107	Two-stage chromatographic separation of aggregates for monoclonal antibody therapeutics. Journal of Chromatography A, 2014, 1368, 155-162.	1.8	16
108	Analytical characterization of in vitro refolding in the quality by design paradigm: Refolding of recombinant human granulocyte colony stimulating factor. Journal of Pharmaceutical and Biomedical Analysis, 2016, 126, 124-131.	1.4	16

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109	QbD Based Media Development for the Production of Fab Fragments in E. coli. Bioengineering, 2019, 6, 29.	1.6	16
110	Automation of Dead End Filtration: An Enabler for Continuous Processing of Biotherapeutics. Frontiers in Bioengineering and Biotechnology, 2020, 8, 758.	2.0	16
111	Harnessing the power of electrophoresis and chromatography: Offline coupling of reverse phase liquid chromatography-capillary zone electrophoresis-tandem mass spectrometry for peptide mapping for monoclonal antibodies. Journal of Chromatography A, 2020, 1620, 460954.	1.8	16
112	Control of surge tanks for continuous manufacturing of monoclonal antibodies. Biotechnology and Bioengineering, 2021, 118, 1913-1931.	1.7	16
113	Biomass to fuels and chemicals: A review of enabling processes and technologies. Journal of Chemical Technology and Biotechnology, 2022, 97, 597-607.	1.6	16
114	AI-ML applications in bioprocessing: ML as an enabler of real time quality prediction in continuous manufacturing of mAbs. Computers and Chemical Engineering, 2022, 164, 107896.	2.0	16
115	Implementation of Quality by Design for processing of food products and biotherapeutics. Food and Bioproducts Processing, 2016, 99, 231-243.	1.8	15
116	Modeling and prediction of excipient and pH drifts during ultrafiltration/diafiltration of monoclonal antibody biotherapeutic for high concentration formulations. Separation and Purification Technology, 2020, 238, 116392.	3.9	15
117	Development of an integrated continuous PEGylation and purification Process for granulocyte colony stimulating factor. Journal of Biotechnology, 2020, 322, 79-89.	1.9	15
118	Dimerization of SARS-CoV-2 nucleocapsid protein affects sensitivity of ELISA based diagnostics of COVID-19. International Journal of Biological Macromolecules, 2022, 200, 428-437.	3.6	15
119	Quality by Design: An Overview of the Basic Concepts. , 0, , 1-8.		14
120	Case Study on Definition of Process Design Space for a Microbial Fermentation Step. , 0, , 85-109.		14
121	A novel aqueous two phase assisted platform for efficient removal of process related impurities associated with E. coli based biotherapeutic protein products. Journal of Chromatography A, 2013, 1307, 49-57.	1.8	14
122	Artificial neural network (ANN)â€based prediction of depth filter loading capacity for filter sizing. Biotechnology Progress, 2016, 32, 1436-1443.	1.3	14
123	Peptide Dendrons as Thermal-Stability Amplifiers for Immunoglobulin G1 Monoclonal Antibody Biotherapeutics. Bioconjugate Chemistry, 2017, 28, 2549-2559.	1.8	14
124	Role of Knowledge Management in Development and Lifecycle Management of Biopharmaceuticals. Pharmaceutical Research, 2017, 34, 243-256.	1.7	14
125	Design of experiments applications in bioprocessing: Chromatography process development using split design of experiments. Biotechnology Progress, 2019, 35, e2730.	1.3	14
126	Understanding the mechanism of copurification of â€œdifficult to removeâ€•host cell proteins in rituximab biosimilar products. Biotechnology Progress, 2020, 36, e2936.	1.3	14

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127	A novel reactor configuration for continuous virus inactivation. Biochemical Engineering Journal, 2021, 167, 107885.	1.8	14
128	Complete or periodic continuity in continuous manufacturing platforms for production of monoclonal antibodies?. Biotechnology Journal, 2021, 16, e2000524.	1.8	14
129	Knowledge management in a waste based biorefinery in the QbD paradigm. Bioresource Technology, 2016, 215, 63-75.	4.8	13
130	Contribution of protein <scp>A</scp> step towards cost of goods for continuous production of monoclonal antibody therapeutics. Journal of Chemical Technology and Biotechnology, 2022, 97, 2420-2433.	1.6	13
131	Near Infrared Spectroscopy as a PAT tool for monitoring and control of protein and excipient concentration in ultrafiltration of highly concentrated antibody formulations. International Journal of Pharmaceutics, 2021, 600, 120456.	2.6	13
132	Harnessing the power of electrophoresis and chromatography: Offline coupling of reverse phase liquid chromatographyâ€¢capillary zone electrophoresisâ€¢tandem mass spectrometry for analysis of host cell proteins in monoclonal antibody producing CHO cell line. Electrophoresis, 2021, 42, 735-741.	1.3	13
133	Protein A chromatography resin lifetimeâ€"impact of feed composition. Biotechnology Progress, 2018, 34, 412-419.	1.3	12
134	Structure-Based Design of Small Peptide Ligands to Inhibit Early-Stage Protein Aggregation Nucleation. Journal of Chemical Information and Modeling, 2020, 60, 3304-3314.	2.5	12
135	Rapid aggregation of therapeutic monoclonal antibodies by bubbling induced air/liquid interfacial and agitation stress at different conditions. European Journal of Pharmaceutics and Biopharmaceutics, 2021, 168, 97-109.	2.0	12
136	Enablers of continuous processing of biotherapeutic products. Trends in Biotechnology, 2022, 40, 804-815.	4.9	12
137	Determination of Critical Quality Attributes for a Biotherapeutic in the QbD Paradigm: GCSF as a Case Study. AAPS Journal, 2017, 19, 1826-1841.	2.2	11
138	Kinetics and Characterization of Non-enzymatic Fragmentation of Monoclonal Antibody Therapeutics. Pharmaceutical Research, 2018, 35, 142.	1.7	11
139	Process development in the Quality by Design paradigm: Modeling of Protein A chromatography resin fouling. Journal of Chromatography A, 2018, 1570, 56-66.	1.8	11
140	Comparison and implementation of different control strategies for improving production of rHSA using Pichia pastoris. Journal of Biotechnology, 2019, 290, 33-43.	1.9	11
141	Biosimilars in Developed Economies: Overview, Status, and Regulatory Considerations. Regulatory Toxicology and Pharmacology, 2020, 110, 104525.	1.3	11
142	An application of Nano Differential Scanning Fluorimetry for Higher Order Structure assessment between mAb originator and biosimilars: Trastuzumab and Rituximab as case studies. Journal of Pharmaceutical and Biomedical Analysis, 2020, 186, 113270.	1.4	11
143	Current status and future challenges in transitioning to continuous bioprocessing of virusâ€like particles. Journal of Chemical Technology and Biotechnology, 2022, 97, 2376-2385.	1.6	11
144	Process characterization of the chromatographic steps in the purification process of a recombinant Escherichia coli-expressed protein. Biotechnology and Applied Biochemistry, 2003, 37, 51.	1.4	10

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145	Implementation of quality by design toward processing of food products. Preparative Biochemistry and Biotechnology, 2017, 47, 435-440.	1.0	10
146	Monitoring and Control of Bioethanol Production From Lignocellulosic Biomass. , 2018, , 727-749.		10
147	Raman spectroscopy for in situ, real time monitoring of protein aggregation in lyophilized biotherapeutic products. International Journal of Biological Macromolecules, 2021, 179, 309-313.	3.6	10
148	Multi-wavelength UV-based PAT tool for measuring protein concentration. Journal of Pharmaceutical and Biomedical Analysis, 2022, 207, 114394.	1.4	10
149	QbD for Raw Materials. , 0, , 193-209.		9
150	Mechanistic modeling of hydrophobic interaction chromatography for monoclonal antibody purification: process optimization in the quality by design paradigm. Journal of Chemical Technology and Biotechnology, 2017, 92, 2527-2537.	1.6	9
151	Fluorescence based real time monitoring of fouling in process chromatography. Scientific Reports, 2017, 7, 45640.	1.6	9
152	Regulatory considerations in biosimilars: Asia pacific regions. Preparative Biochemistry and Biotechnology, 2021, 51, 1-8.	1.0	9
153	Challenges in Expression and Purification of Functional Fab Fragments in E. coli: Current Strategies and Perspectives. Fermentation, 2022, 8, 175.	1.4	9
154	Cyclodextrins as selectivity enhancers in capillary zone electrophoresis of proteins. Electrophoresis, 1998, 19, 2285-2289.	1.3	8
155	Monitoring Quality of Biotherapeutic Products Using Multivariate Data Analysis. AAPS Journal, 2016, 18, 793-800.	2.2	8
156	Implementation of a fluorescence based PAT control for fouling of protein A chromatography resin. Journal of Chemical Technology and Biotechnology, 2017, 92, 2799-2807.	1.6	8
157	The selection of highly specific and selective aptamers using modified SELEX and their use in process analytical techniques for Lucentis bioproduction. RSC Advances, 2020, 10, 28906-28917.	1.7	8
158	Microaerobic fermentation alters lactose metabolism in Escherichia coli. Applied Microbiology and Biotechnology, 2020, 104, 5773-5785.	1.7	8
159	Approval of biosimilars: a review of unsuccessful regulatory filings. Expert Opinion on Biological Therapy, 2021, 21, 19-28.	1.4	8
160	Process analytical technology application for protein PEGylation using near infrared spectroscopy: G-CSF as a case study. Journal of Biotechnology, 2021, 325, 303-311.	1.9	8
161	Regulatory considerations in biosimilars: Middle East and Africa regions. Preparative Biochemistry and Biotechnology, 2021, 51, 731-737.	1.0	8
162	Role of data science in managing COVID-19 pandemic. Indian Chemical Engineer, 2020, 62, 385-395.	0.9	8

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163	Synergistic Effects of Natural Compounds Toward Inhibition of SARS-CoV-2 3CL Protease. Journal of Chemical Information and Modeling, 2021, 61, 5708-5718.	2.5	8
164	Unexplored Excipients in Biotherapeutic Formulations: Natural Osmolytes as Potential Stabilizers Against Thermally Induced Aggregation of IgG1 Biotherapeutics. AAPS PharmSciTech, 2022, 23, 26.	1.5	8
165	Harvest of a Therapeutic Protein Product from High Cell Density Fermentation Broths. Biotechnology and Bioprocessing Series, 2006, , 1-58.	0.0	7
166	Production of Protein Therapeutics in the Quality by Design (QbD) Paradigm. Topics in Medicinal Chemistry, 2016, , 41-67.	0.4	7
167	High performance liquid chromatography (HPLC) based direct and simultaneous estimation of excipients in biopharmaceutical products. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2019, 1117, 118-126.	1.2	7
168	Mechanistic modeling based process analytical technology implementation for pooling in hydrophobic interaction chromatography. Biotechnology Progress, 2019, 35, e2758.	1.3	7
169	Pretreatments for enhancing clarification efficiency of depth filtration during production of monoclonal antibody therapeutics. Biotechnology Progress, 2020, 36, e2996.	1.3	7
170	The global landscape on interchangeability of biosimilars. Expert Opinion on Biological Therapy, 2022, 22, 133-148.	1.4	7
171	Effect of vitamins and metal ions on productivity and charge heterogeneity of IgG1 expressed in CHO cells. Biotechnology Journal, 2021, 16, e2000464.	1.8	7
172	A novel piperazine derivative that targets hepatitis B surface antigen effectively inhibits tenofovir resistant hepatitis B virus. Scientific Reports, 2021, 11, 11723.	1.6	7
173	Coleâ€Cole modeling of realâ€time capacitance data for estimation of cell physiological properties in recombinant Escherichia coli cultivation. Biotechnology and Bioengineering, 2022, 119, 922-935.	1.7	7
174	Capacity optimization and scheduling of a multiproduct manufacturing facility for biotech products. Biotechnology Progress, 2014, 30, 1221-1230.	1.3	6
175	Qualitative and quantitative examination of non-specific protein adsorption on filter membrane disks of a commercially available high throughput chromatography device. Journal of Membrane Science, 2014, 451, 312-318.	4.1	6
176	Enabler for process analytical technology implementation in Pichia pastoris fermentation: Fluorescenceâ€based soft sensors for rapid quantitation of product titer. Engineering in Life Sciences, 2017, 17, 448-457.	2.0	6
177	Process Development in the QbD Paradigm: Mechanistic Modeling of Antisolvent Crystallization for Production of Pharmaceuticals. Crystal Growth and Design, 2018, 18, 3352-3359.	1.4	6
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