Joelle N Pelletier

List of Publications by Year
in descending order

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81 papers	3,219 citations	172386 29 h-index	161767 54 g-index
92 all docs	92 docs citations	92 times ranked	4017 citing authors

#	Article	IF	Citations
1	Semi-rational approaches to engineering enzyme activity: combining the benefits of directed evolution and rational design. Current Opinion in Biotechnology, 2005, 16, 378-384.	3.3	333
2	Expanding the organic toolbox: a guide to integrating biocatalysis in synthesis. Chemical Society Reviews, 2012, 41, 1585.	18.7	284
3	An in vivo library-versus-library selection of optimized proteinâ€“protein interactions. Nature Biotechnology, 1999, 17, 683-690.	9.4	182
4	Miniature multi-channel SPR instrument for methotrexate monitoring in clinical samples. Biosensors and Bioelectronics, 2015, 64, 664-670.	5.3	121
5	[14] Detection of protein-protein interactions by protein fragment complementation strategies. Methods in Enzymology, 2000, 328, 208-230.	0.4	117
6	SPR Biosensing in Crude Serum Using Ultralow Fouling Binary Patterned Peptide SAM. Analytical Chemistry, 2010, 82, 3699-3706.	3.2	108
7	Protein Motions Promote Catalysis. Chemistry and Biology, 2004, 11, 1037-1042.	6.2	104
8	A heterodimeric coiled-coil peptide pair selected in vivo from a designed library- versus -library ensemble 1 1Edited by A. R. Fersht. Journal of Molecular Biology, 2000, 295, 627-639.	2.0	101
9	Identification and Characterization of an Inborn Error of Metabolism Caused by Dihydrofolate Reductase Deficiency. American Journal of Human Genetics, 2011, 88, 216-225.	2.6	90
10	Cinnamoyl Inhibitors of Tissue Transglutaminase. Journal of Organic Chemistry, 2008, 73, 5766-5775.	1.7	85
11	Computational tools for enzyme improvement: why everyone can â€“ and should â€“ use them. Current Opinion in Chemical Biology, 2017, 37, 89-96.	2.8	79
12	In Vitro Selection for Catalytic Activity with Ribosome Display. Journal of the American Chemical Society, 2002, 124, 9396-9403.	6.6	76
13	Microbial transglutaminase displays broad acyl-acceptor substrate specificity. Applied Microbiology and Biotechnology, 2014, 98, 219-230.	1.7	75
14	Biotechnological Applications of Transglutaminases. Biomolecules, 2013, 3, 870-888.	1.8	72
15	Peptide Self-Assembled Monolayers for Label-Free and Unamplified Surface Plasmon Resonance Biosensing in Crude Cell Lysate. Analytical Chemistry, 2009, 81, 6779-6788.	3.2	61
16	Site-saturation Mutagenesis of Tyr-105 Reveals Its Importance in Substrate Stabilization and Discrimination in TEM-1 Î²-Lactamase. Journal of Biological Chemistry, 2004, 279, 46295-46303.	1.6	54
17	Combinatorial exploration of the catalytic site of a drug-resistant dihydrofolate reductase: creating alternative functional configurations. Protein Engineering, Design and Selection, 2004, 17, 809-819.	1.0	52
18	Comparison of In Vivo Selection and Rational Design of Heterodimeric Coiled Coils. Structure, 2002, 10, 1235-1248.	1.6	51

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19	Modified peptide monolayer binding His-tagged biomolecules for small ligand screening with SPR biosensors. Analyst, The, 2011, 136, 3142.	1.7	44
20	The bioorganic chemistry of transglutaminase â€" from mechanism to inhibition and engineering. Canadian Journal of Chemistry, 2008, 86, 271-276.	0.6	39
21	Tissue transglutaminase acylation: Proposed role of conserved active site Tyr and Trp residues revealed by molecular modeling of peptide substrate binding. Protein Science, 2004, 13, 979-991.	3.1	37
22	Monitoring methotrexate in clinical samples from cancer patients during chemotherapy with a LSPR-based competitive sensor. Analyst, The, 2012, 137, 4742.	1.7	37
23	Increasing Methotrexate Resistance by Combination of Active-site Mutations in Human Dihydrofolate Reductase. Journal of Molecular Biology, 2007, 373, 599-611.	2.0	36
24	Imidazolium-Based Ionic Liquid Surfaces for Biosensing. Analytical Chemistry, 2013, 85, 5770-5777.	3.2	36
25	NMR Investigation of Tyr105 Mutants in TEM-1 Î²-Lactamase. Journal of Biological Chemistry, 2007, 282, 21448-21459.	1.6	33
26	Multiple Conformers in Active Site of Human Dihydrofolate Reductase F31R/Q35E Double Mutant Suggest Structural Basis for Methotrexate Resistance. Journal of Biological Chemistry, 2009, 284, 20079-20089.	1.6	33
27	Mutational â€˜hot-spotsâ€™ in mammalian, bacterial and protozoal dihydrofolate reductases associated with antifolate resistance: Sequence and structural comparison. Drug Resistance Updates, 2009, 12, 28-41.	6.5	33
28	Influence of the Debye length on the interaction of a small molecule-modified Au nanoparticle with a surface-bound bioreceptor. Chemical Communications, 2014, 50, 4947.	2.2	33
29	General Câ€“H Arylation Strategy for the Synthesis of Tunable Visible Light-Emitting Benzo[a]imidazo[2,1,5-c,d]indolizine Fluorophores. Journal of Organic Chemistry, 2017, 82, 5046-5067.	1.7	32
30	Maintenance of Native-like Protein Dynamics May Not Be Required for Engineering Functional Proteins. Chemistry and Biology, 2014, 21, 1330-1340.	6.2	29
31	A direct fluorometric assay for tissue transglutaminase. Analytical Biochemistry, 2005, 347, 221-226.	1.1	28
32	Non-specific Adsorption of Crude Cell Lysate on Surface Plasmon Resonance Sensors. Langmuir, 2013, 29, 10141-10148.	1.6	28
33	Cross-validation of ELISA and a portable surface plasmon resonance instrument for IgG antibody serology with SARS-CoV-2 positive individuals. Analyst, The, 2021, 146, 4905-4917.	1.7	28
34	Mapping proteinâ€“protein interactions with combinatorial biology methods. Current Opinion in Biotechnology, 2001, 12, 340-347.	3.3	26
35	Fragment-Based Design of Symmetrical Bis-benzimidazoles as Selective Inhibitors of the Trimethoprim-Resistant, Type II R67 Dihydrofolate Reductase. Journal of Medicinal Chemistry, 2012, 55, 3182-3192.	2.9	26
36	Response Monitoring of Acute Lymphoblastic Leukemia Patients Undergoing <scp>l</scp>-Asparaginase Therapy: Successes and Challenges Associated with Clinical Sample Analysis in Plasmonic Sensing. ACS Sensors, 2016, 1, 1358-1365.	4.0	26

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37	The C-terminal Residues in the Alpha-interacting Domain (AID) Helix Anchor CaVÎ² Subunit Interaction and Modulation of CaV2.3 Channels. Journal of Biological Chemistry, 2005, 280, 494-505.	1.6	25
38	Integron-Associated DfrB4, a Previously Uncharacterized Member of the Trimethoprim-Resistant Dihydrofolate Reductase B Family, Is a Clinically Identified Emergent Source of Antibiotic Resistance. Antimicrobial Agents and Chemotherapy, 2017, 61, .	1.4	24
39	Expression and rapid purification of highly active hexahistidine-tagged guinea pig liver transglutaminase. Protein Expression and Purification, 2004, 33, 256-264.	0.6	23
40	Revealing Domain Structure through Linker-Scanning Analysis of the Murine Leukemia Virus (MuLV) RNase H and MuLV and Human Immunodeficiency Virus Type 1 Integrase Proteins. Journal of Virology, 2006, 80, 9497-9510.	1.5	23
41	Simulated annealing exploration of an active-site tyrosine in TEM-1Î²-lactamase suggests the existence of alternate conformations. Proteins: Structure, Function and Bioinformatics, 2007, 69, 340-348.	1.5	23
42	Photolabeling of Tissue Transglutaminase Reveals the Binding Mode of Potent Cinnamoyl Inhibitors. Biochemistry, 2009, 48, 3346-3353.	1.2	23
43	Site-specific protein propargylation using tissue transglutaminase. Organic and Biomolecular Chemistry, 2012, 10, 5258.	1.5	22
44	An Overview of Cytochrome P450 Immobilization Strategies for Drug Metabolism Studies, Biosensing, and Biocatalytic Applications: Challenges and Opportunities. ACS Catalysis, 2021, 11, 9418-9434.	5.5	22
45	High tolerance to simultaneous activeâ€site mutations in TEMâ€1 Î²â€lactamase: Distinct mutational paths provide more generalized Î²â€lactam recognition. Protein Science, 2009, 18, 147-160.	3.1	21
46	Engineered, highly reactive substrates of microbial transglutaminase enable protein labeling within various secondary structure elements. Protein Science, 2017, 26, 2268-2279.	3.1	20
47	Cross-reactivity of antibodies from non-hospitalized COVID-19 positive individuals against the native, B.1.351, B.1.617.2, and P.1 SARS-CoV-2 spike proteins. Scientific Reports, 2021, 11, 21601.	1.6	20
48	Chemical profiling of the deacetylase activity of acetyl xylan esterase A (AxeA) variants on chitooligosaccharides using hydrophilic interaction chromatographyâ€“mass spectrometry. Journal of Biotechnology, 2011, 155, 257-265.	1.9	19
49	The Structural Dynamics of Engineered Î²-Lactamases Vary Broadly on Three Timescales yet Sustain Native Function. Scientific Reports, 2019, 9, 6656.	1.6	19
50	Transglutaminase-Catalyzed Bioconjugation Using One-Pot Metal-Free Bioorthogonal Chemistry. Bioconjugate Chemistry, 2017, 28, 2518-2523.	1.8	18
51	Methods for enzyme library creation: Which one will you choose?. BioEssays, 2021, 43, e2100052.	1.2	18
52	Substrate-Specific Screening for Mutational Hotspots Using Biased Molecular Dynamics Simulations. ACS Catalysis, 2017, 7, 6786-6797.	5.5	17
53	Enzyme engineering: A synthetic biology approach for more effective library generation and automated high-throughput screening. PLoS ONE, 2017, 12, e0171741.	1.1	17
54	Chimeric Î²-Lactamases: Global Conservation of Parental Function and Fast Time-Scale Dynamics with Increased Slow Motions. PLoS ONE, 2012, 7, e52283.	1.1	16

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55	Evolution of P450 Monooxygenases toward Formation of Transient Channels and Exclusion of Nonproductive Gases. ACS Catalysis, 2016, 6, 7426-7437.	5.5	14
56	Holistic engineering of Cal-A lipase chain-length selectivity identifies triglyceride binding hot-spot. PLoS ONE, 2019, 14, e0210100.	1.1	14
57	Indigo Formation and Rapid NADPH Consumption Provide Robust Prediction of Raspberry Ketone Synthesis by Engineered Cytochrome P450 BM3. ChemCatChem, 2020, 12, 837-845.	1.8	14
58	2-Tier Bacterial and In Vitro Selection of Active and Methotrexate-Resistant Variants of Human Dihydrofolate Reductase. Journal of Biomolecular Screening, 2008, 13, 504-514.	2.6	13
59	Fluorometric assay for tissue transglutaminase-mediated transamidation activity. Bioorganic and Medicinal Chemistry, 2009, 17, 6354-6359.	1.4	13
60	A RACHITT for our toolbox. Nature Biotechnology, 2001, 19, 314-315.	9.4	12
61	Development of Escherichia coli Asparaginase II for Immunosensing: A Trade-Off between Receptor Density and Sensing Efficiency. ACS Omega, 2017, 2, 2114-2125.	1.6	12
62	The Bacterial Genomic Context of Highly Trimethoprim-Resistant DfrB Dihydrofolate Reductases Highlights an Emerging Threat to Public Health. Antibiotics, 2021, 10, 433.	1.5	12
63	Asymmetric mutations in the tetrameric R67 dihydrofolate reductase reveal high tolerance to activeâ€site substitutions. Protein Science, 2015, 24, 495-507.	3.1	10
64	Dual-Target Inhibitors of the Folate Pathway Inhibit Intrinsically Trimethoprim-Resistant DfrB Dihydrofolate Reductases. ACS Medicinal Chemistry Letters, 2020, 11, 2261-2267.	1.3	9
65	Extracellular production of Streptomyces lividans acetyl xylan esterase A in Escherichia coli for rapid detection of activity. Protein Expression and Purification, 2006, 46, 274-284.	0.6	8
66	Novel crystallization conditions for tandem variant R67 DHFR yield a wild-type crystal structure. Acta Crystallographica Section F: Structural Biology Communications, 2011, 67, 1316-1322.	0.7	8
67	Backbone resonance assignments of an artificially engineered TEM-1/PSE-4 Class A Î²-lactamase chimera. Biomolecular NMR Assignments, 2010, 4, 127-130.	0.4	7
68	Structure-Based Design of Dimeric Bisbenzimidazole Inhibitors to an Emergent Trimethoprim-Resistant Type II Dihydrofolate Reductase Guides the Design of Monomeric Analogues. ACS Omega, 2019, 4, 10056-10069.	1.6	7
69	Crystallization of the bifunctional methylenetetrahydrofolate dehydrogenase/methenyltetrahydrofolate cyclohydrolase domain of the human trifunctional enzyme. , 1996, 26, 479-480.		6
70	Selectively weakened binding of methotrexate by human dihydrofolate reductase allows rapid ex vivo selection of mammalian cells. Journal of Molecular Recognition, 2011, 24, 188-198.	1.1	6
71	15N, 13C and 1H backbone resonance assignments of an artificially engineered TEM-1/PSE-4 class A Î²-lactamase chimera and its deconvoluted mutant. Biomolecular NMR Assignments, 2016, 10, 93-99.	0.4	6
72	Investigation of Classical Organic and Ionic Liquid Cosolvents for Early-Stage Screening in Fragment-Based Inhibitor Design with Unrelated Bacterial and Human Dihydrofolate Reductases. Assay and Drug Development Technologies, 2017, 15, 141-153.	0.6	3

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73	Known Evolutionary Paths Are Accessible to Engineered ÃŸ-Lactamases Having Altered Protein Motions at the Timescale of Catalytic Turnover. Frontiers in Molecular Biosciences, 2020, 7, 599298.	1.6	3
74	Glutamine-walking: Creating reactive substrates for transglutaminase-mediated protein labeling. Methods in Enzymology, 2020, 644, 121-148.	0.4	3
75	SERS-based assay for multiplexed detection of cross-reactivity and persistence of antibodies against the spike of the native, P.1 and B.1.617.2 SARS-CoV-2 in non-hospitalised adults. Sensors & Diagnostics, 2022, 1, 851-866.	1.9	3
76	Sequence-activity relationships guide directed evolution. Nature Biotechnology, 2007, 25, 297-298.	9.4	2
77	Development of LSPR and SPR sensor for the detection of an anti-cancer drug for chemotherapy. Proceedings of SPIE, 2012, , .	0.8	2
78	Specificity of transglutaminase-catalyzed peptide synthesis. Journal of Molecular Catalysis B: Enzymatic, 2016, 123, 53-61.	1.8	2
79	Tracking Silent Hypersensitivity Reactions to Asparaginase during Leukemia Therapy Using Single-Chip Indirect Plasmonic and Fluorescence Immunosensing. ACS Sensors, 2017, 2, 1761-1766.	4.0	2
80	Methenyltetrahydrofolate Cyclohydrolase Catalyzes the Synthesis of (6S)-5-Formyltetrahydrofolate. Bioorganic Chemistry, 1996, 24, 220-228.	2.0	1
81	Development of sulfahydantoin derivatives as Î²-lactamase inhibitors. Bioorganic and Medicinal Chemistry Letters, 2021, 35, 127781.	1.0	1