

# Joelle N Pelletier

## List of Publications by Year in descending order

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81  
papers

3,219  
citations

172457

29  
h-index

161849

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. <i>Current Opinion in Biotechnology</i> , 2005, 16, 378-384.	6.6	333
2	Expanding the organic toolbox: a guide to integrating biocatalysis in synthesis. <i>Chemical Society Reviews</i> , 2012, 41, 1585.	38.1	284
3	An in vivo library-versus-library selection of optimized protein-protein interactions. <i>Nature Biotechnology</i> , 1999, 17, 683-690.	17.5	182
4	Miniature multi-channel SPR instrument for methotrexate monitoring in clinical samples. <i>Biosensors and Bioelectronics</i> , 2015, 64, 664-670.	10.1	121
5	[14] Detection of protein-protein interactions by protein fragment complementation strategies. <i>Methods in Enzymology</i> , 2000, 328, 208-230.	1.0	117
6	SPR Biosensing in Crude Serum Using Ultralow Fouling Binary Patterned Peptide SAM. <i>Analytical Chemistry</i> , 2010, 82, 3699-3706.	6.5	108
7	Protein Motions Promote Catalysis. <i>Chemistry and Biology</i> , 2004, 11, 1037-1042.	6.0	104
8	A heterodimeric coiled-coil peptide pair selected in vivo from a designed library- versus -library ensemble 1 Edited by A. R. Fersht. <i>Journal of Molecular Biology</i> , 2000, 295, 627-639.	4.2	101
9	Identification and Characterization of an Inborn Error of Metabolism Caused by Dihydrofolate Reductase Deficiency. <i>American Journal of Human Genetics</i> , 2011, 88, 216-225.	6.2	90
10	Cinnamoyl Inhibitors of Tissue Transglutaminase. <i>Journal of Organic Chemistry</i> , 2008, 73, 5766-5775.	3.2	85
11	Computational tools for enzyme improvement: why everyone can and should use them. <i>Current Opinion in Chemical Biology</i> , 2017, 37, 89-96.	6.1	79
12	In Vitro Selection for Catalytic Activity with Ribosome Display. <i>Journal of the American Chemical Society</i> , 2002, 124, 9396-9403.	13.7	76
13	Microbial transglutaminase displays broad acyl-acceptor substrate specificity. <i>Applied Microbiology and Biotechnology</i> , 2014, 98, 219-230.	3.6	75
14	Biotechnological Applications of Transglutaminases. <i>Biomolecules</i> , 2013, 3, 870-888.	4.0	72
15	Peptide Self-Assembled Monolayers for Label-Free and Unamplified Surface Plasmon Resonance Biosensing in Crude Cell Lysate. <i>Analytical Chemistry</i> , 2009, 81, 6779-6788.	6.5	61
16	Site-saturation Mutagenesis of Tyr-105 Reveals Its Importance in Substrate Stabilization and Discrimination in TEM-1 $\beta$ -Lactamase. <i>Journal of Biological Chemistry</i> , 2004, 279, 46295-46303.	3.4	54
17	Combinatorial exploration of the catalytic site of a drug-resistant dihydrofolate reductase: creating alternative functional configurations. <i>Protein Engineering, Design and Selection</i> , 2004, 17, 809-819.	2.1	52
18	Comparison of In Vivo Selection and Rational Design of Heterodimeric Coiled Coils. <i>Structure</i> , 2002, 10, 1235-1248.	3.3	51

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19	Modified peptide monolayer binding His-tagged biomolecules for small ligand screening with SPR biosensors. <i>Analyst, The</i> , 2011, 136, 3142.	3.5	44
20	The bioorganic chemistry of transglutaminase " from mechanism to inhibition and engineering. <i>Canadian Journal of Chemistry</i> , 2008, 86, 271-276.	1.1	39
21	Tissue transglutaminase acylation: Proposed role of conserved active site Tyr and Trp residues revealed by molecular modeling of peptide substrate binding. <i>Protein Science</i> , 2004, 13, 979-991.	7.6	37
22	Monitoring methotrexate in clinical samples from cancer patients during chemotherapy with a LSPR-based competitive sensor. <i>Analyst, The</i> , 2012, 137, 4742.	3.5	37
23	Increasing Methotrexate Resistance by Combination of Active-site Mutations in Human Dihydrofolate Reductase. <i>Journal of Molecular Biology</i> , 2007, 373, 599-611.	4.2	36
24	Imidazolium-Based Ionic Liquid Surfaces for Biosensing. <i>Analytical Chemistry</i> , 2013, 85, 5770-5777.	6.5	36
25	NMR Investigation of Tyr105 Mutants in TEM-1 $\beta$ -Lactamase. <i>Journal of Biological Chemistry</i> , 2007, 282, 21448-21459.	3.4	33
26	Multiple Conformers in Active Site of Human Dihydrofolate Reductase F31R/Q35E Double Mutant Suggest Structural Basis for Methotrexate Resistance. <i>Journal of Biological Chemistry</i> , 2009, 284, 20079-20089.	3.4	33
27	Mutational "hot-spots"™ in mammalian, bacterial and protozoal dihydrofolate reductases associated with antifolate resistance: Sequence and structural comparison. <i>Drug Resistance Updates</i> , 2009, 12, 28-41.	14.4	33
28	Influence of the Debye length on the interaction of a small molecule-modified Au nanoparticle with a surface-bound bioreceptor. <i>Chemical Communications</i> , 2014, 50, 4947.	4.1	33
29	General C-H Arylation Strategy for the Synthesis of Tunable Visible Light-Emitting Benzo[ <i>a</i> ]imidazo[2,1- <i>b</i> ]indolizine Fluorophores. <i>Journal of Organic Chemistry</i> , 2017, 82, 5046-5067.	3.2	32
30	Maintenance of Native-like Protein Dynamics May Not Be Required for Engineering Functional Proteins. <i>Chemistry and Biology</i> , 2014, 21, 1330-1340.	6.0	29
31	A direct fluorometric assay for tissue transglutaminase. <i>Analytical Biochemistry</i> , 2005, 347, 221-226.	2.4	28
32	Non-specific Adsorption of Crude Cell Lysate on Surface Plasmon Resonance Sensors. <i>Langmuir</i> , 2013, 29, 10141-10148.	3.5	28
33	Cross-validation of ELISA and a portable surface plasmon resonance instrument for IgG antibody serology with SARS-CoV-2 positive individuals. <i>Analyst, The</i> , 2021, 146, 4905-4917.	3.5	28
34	Mapping protein-protein interactions with combinatorial biology methods. <i>Current Opinion in Biotechnology</i> , 2001, 12, 340-347.	6.6	26
35	Fragment-Based Design of Symmetrical Bis-benzimidazoles as Selective Inhibitors of the Trimethoprim-Resistant, Type II R67 Dihydrofolate Reductase. <i>Journal of Medicinal Chemistry</i> , 2012, 55, 3182-3192.	6.4	26
36	Response Monitoring of Acute Lymphoblastic Leukemia Patients Undergoing $\beta$ -Asparaginase Therapy: Successes and Challenges Associated with Clinical Sample Analysis in Plasmonic Sensing. <i>ACS Sensors</i> , 2016, 1, 1358-1365.	7.8	26

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37	The C-terminal Residues in the Alpha-interacting Domain (AID) Helix Anchor CaV $\beta$ 2 Subunit Interaction and Modulation of CaV2.3 Channels. <i>Journal of Biological Chemistry</i> , 2005, 280, 494-505.	3.4	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. <i>Antimicrobial Agents and Chemotherapy</i> , 2017, 61, .	3.2	24
39	Expression and rapid purification of highly active hexahistidine-tagged guinea pig liver transglutaminase. <i>Protein Expression and Purification</i> , 2004, 33, 256-264.	1.3	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. <i>Journal of Virology</i> , 2006, 80, 9497-9510.	3.4	23
41	Simulated annealing exploration of an active-site tyrosine in TEM-1 $\beta$ -lactamase suggests the existence of alternate conformations. <i>Proteins: Structure, Function and Bioinformatics</i> , 2007, 69, 340-348.	2.6	23
42	Photolabeling of Tissue Transglutaminase Reveals the Binding Mode of Potent Cinnamoyl Inhibitors. <i>Biochemistry</i> , 2009, 48, 3346-3353.	2.5	23
43	Site-specific protein propargylation using tissue transglutaminase. <i>Organic and Biomolecular Chemistry</i> , 2012, 10, 5258.	2.8	22
44	An Overview of Cytochrome P450 Immobilization Strategies for Drug Metabolism Studies, Biosensing, and Biocatalytic Applications: Challenges and Opportunities. <i>ACS Catalysis</i> , 2021, 11, 9418-9434.	11.2	22
45	High tolerance to simultaneous active-site mutations in TEM-1 $\beta$ -lactamase: Distinct mutational paths provide more generalized $\beta$ -lactam recognition. <i>Protein Science</i> , 2009, 18, 147-160.	7.6	21
46	Engineered, highly reactive substrates of microbial transglutaminase enable protein labeling within various secondary structure elements. <i>Protein Science</i> , 2017, 26, 2268-2279.	7.6	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. <i>Scientific Reports</i> , 2021, 11, 21601.	3.3	20
48	Chemical profiling of the deacetylase activity of acetyl xylan esterase A (AxeA) variants on chitooligosaccharides using hydrophilic interaction chromatography-mass spectrometry. <i>Journal of Biotechnology</i> , 2011, 155, 257-265.	3.8	19
49	The Structural Dynamics of Engineered $\beta$ -Lactamases Vary Broadly on Three Timescales yet Sustain Native Function. <i>Scientific Reports</i> , 2019, 9, 6656.	3.3	19
50	Transglutaminase-Catalyzed Bioconjugation Using One-Pot Metal-Free Bioorthogonal Chemistry. <i>Bioconjugate Chemistry</i> , 2017, 28, 2518-2523.	3.6	18
51	Methods for enzyme library creation: Which one will you choose?. <i>BioEssays</i> , 2021, 43, e2100052.	2.5	18
52	Substrate-Specific Screening for Mutational Hotspots Using Biased Molecular Dynamics Simulations. <i>ACS Catalysis</i> , 2017, 7, 6786-6797.	11.2	17
53	Enzyme engineering: A synthetic biology approach for more effective library generation and automated high-throughput screening. <i>PLoS ONE</i> , 2017, 12, e0171741.	2.5	17
54	Chimeric $\beta$ -Lactamases: Global Conservation of Parental Function and Fast Time-Scale Dynamics with Increased Slow Motions. <i>PLoS ONE</i> , 2012, 7, e52283.	2.5	16

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55	Evolution of P450 Monooxygenases toward Formation of Transient Channels and Exclusion of Nonproductive Gases. <i>ACS Catalysis</i> , 2016, 6, 7426-7437.	11.2	14
56	Holistic engineering of Cal-A lipase chain-length selectivity identifies triglyceride binding hot-spot. <i>PLoS ONE</i> , 2019, 14, e0210100.	2.5	14
57	Indigo Formation and Rapid NADPH Consumption Provide Robust Prediction of Raspberry Ketone Synthesis by Engineered Cytochrome P450 BM3. <i>ChemCatChem</i> , 2020, 12, 837-845.	3.7	14
58	2-Tier Bacterial and In Vitro Selection of Active and Methotrexate-Resistant Variants of Human Dihydrofolate Reductase. <i>Journal of Biomolecular Screening</i> , 2008, 13, 504-514.	2.6	13
59	Fluorometric assay for tissue transglutaminase-mediated transamidation activity. <i>Bioorganic and Medicinal Chemistry</i> , 2009, 17, 6354-6359.	3.0	13
60	A RACHITT for our toolbox. <i>Nature Biotechnology</i> , 2001, 19, 314-315.	17.5	12
61	Development of <i>Escherichia coli</i> Asparaginase II for Immunosensing: A Trade-Off between Receptor Density and Sensing Efficiency. <i>ACS Omega</i> , 2017, 2, 2114-2125.	3.5	12
62	The Bacterial Genomic Context of Highly Trimethoprim-Resistant DfrB Dihydrofolate Reductases Highlights an Emerging Threat to Public Health. <i>Antibiotics</i> , 2021, 10, 433.	3.7	12
63	Asymmetric mutations in the tetrameric R67 dihydrofolate reductase reveal high tolerance to active-site substitutions. <i>Protein Science</i> , 2015, 24, 495-507.	7.6	10
64	Dual-Target Inhibitors of the Folate Pathway Inhibit Intrinsically Trimethoprim-Resistant DfrB Dihydrofolate Reductases. <i>ACS Medicinal Chemistry Letters</i> , 2020, 11, 2261-2267.	2.8	9
65	Extracellular production of <i>Streptomyces lividans</i> acetyl xylan esterase A in <i>Escherichia coli</i> for rapid detection of activity. <i>Protein Expression and Purification</i> , 2006, 46, 274-284.	1.3	8
66	Novel crystallization conditions for tandem variant R67 DHFR yield a wild-type crystal structure. <i>Acta Crystallographica Section F: Structural Biology Communications</i> , 2011, 67, 1316-1322.	0.7	8
67	Backbone resonance assignments of an artificially engineered TEM-1/PSE-4 Class A $\beta$ -lactamase chimera. <i>Biomolecular NMR Assignments</i> , 2010, 4, 127-130.	0.8	7
68	Structure-Based Design of Dimeric Bisbenzimidazole Inhibitors to an Emergent Trimethoprim-Resistant Type II Dihydrofolate Reductase Guides the Design of Monomeric Analogues. <i>ACS Omega</i> , 2019, 4, 10056-10069.	3.5	7
69	Crystallization of the bifunctional methylenetetrahydrofolate dehydrogenase/methenyltetrahydrofolate cyclohydrolase domain of the human trifunctional enzyme. <i>Journal of Molecular Biology</i> , 1996, 26, 479-480.		6
70	Selectively weakened binding of methotrexate by human dihydrofolate reductase allows rapid <i>ex vivo</i> selection of mammalian cells. <i>Journal of Molecular Recognition</i> , 2011, 24, 188-198.	2.1	6
71	$^{15}\text{N}$ , $^{13}\text{C}$ and $^1\text{H}$ backbone resonance assignments of an artificially engineered TEM-1/PSE-4 class A $\beta$ -lactamase chimera and its deconvoluted mutant. <i>Biomolecular NMR Assignments</i> , 2016, 10, 93-99.	0.8	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. <i>Assay and Drug Development Technologies</i> , 2017, 15, 141-153.	1.2	3

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73	Known Evolutionary Paths Are Accessible to Engineered $\beta$ -Lactamases Having Altered Protein Motions at the Timescale of Catalytic Turnover. <i>Frontiers in Molecular Biosciences</i> , 2020, 7, 599298.	3.5	3
74	Glutamine-walking: Creating reactive substrates for transglutaminase-mediated protein labeling. <i>Methods in Enzymology</i> , 2020, 644, 121-148.	1.0	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. <i>Sensors &amp; Diagnostics</i> , 2022, 1, 851-866.	3.8	3
76	Sequence-activity relationships guide directed evolution. <i>Nature Biotechnology</i> , 2007, 25, 297-298.	17.5	2
77	Development of LSPR and SPR sensor for the detection of an anti-cancer drug for chemotherapy. <i>Proceedings of SPIE</i> , 2012, , .	0.8	2
78	Specificity of transglutaminase-catalyzed peptide synthesis. <i>Journal of Molecular Catalysis B: Enzymatic</i> , 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. <i>ACS Sensors</i> , 2017, 2, 1761-1766.	7.8	2
80	Methenyltetrahydrofolate Cyclohydrolase Catalyzes the Synthesis of (6S)-5-Formyltetrahydrofolate. <i>Bioorganic Chemistry</i> , 1996, 24, 220-228.	4.1	1
81	Development of sulfahydantoin derivatives as $\beta$ -lactamase inhibitors. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2021, 35, 127781.	2.2	1