

David R Liu

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/7154231/publications.pdf>

Version: 2024-02-01

127
papers

36,177
citations

9786

73
h-index

11308

136
g-index

149
all docs

149
docs citations

149
times ranked

23727
citing authors

#	ARTICLE	IF	CITATIONS
1	Programmable editing of a target base in genomic DNA without double-stranded DNA cleavage. <i>Nature</i> , 2016, 533, 420-424.	27.8	3,662
2	Programmable base editing of A→T to G→C in genomic DNA without DNA cleavage. <i>Nature</i> , 2017, 551, 464-471.	27.8	2,807
3	Search-and-replace genome editing without double-strand breaks or donor DNA. <i>Nature</i> , 2019, 576, 149-157.	27.8	2,662
4	High-throughput profiling of off-target DNA cleavage reveals RNA-programmed Cas9 nuclease specificity. <i>Nature Biotechnology</i> , 2013, 31, 839-843.	17.5	1,303
5	Genome editing with CRISPR-Cas nucleases, base editors, transposases and prime editors. <i>Nature Biotechnology</i> , 2020, 38, 824-844.	17.5	1,277
6	Evolved Cas9 variants with broad PAM compatibility and high DNA specificity. <i>Nature</i> , 2018, 556, 57-63.	27.8	1,195
7	Cationic lipid-mediated delivery of proteins enables efficient protein-based genome editing in vitro and in vivo. <i>Nature Biotechnology</i> , 2015, 33, 73-80.	17.5	1,180
8	Base editing: precision chemistry on the genome and transcriptome of living cells. <i>Nature Reviews Genetics</i> , 2018, 19, 770-788.	16.3	1,072
9	CRISPResso2 provides accurate and rapid genome editing sequence analysis. <i>Nature Biotechnology</i> , 2019, 37, 224-226.	17.5	891
10	CRISPR-Based Technologies for the Manipulation of Eukaryotic Genomes. <i>Cell</i> , 2017, 168, 20-36.	28.9	783
11	Fusion of catalytically inactive Cas9 to FokI nuclease improves the specificity of genome modification. <i>Nature Biotechnology</i> , 2014, 32, 577-582.	17.5	740
12	Methods for the directed evolution of proteins. <i>Nature Reviews Genetics</i> , 2015, 16, 379-394.	16.3	699
13	Improving cytidine and adenine base editors by expression optimization and ancestral reconstruction. <i>Nature Biotechnology</i> , 2018, 36, 843-846.	17.5	644
14	Sequence Determinants of Intracellular Phase Separation by Complex Coacervation of a Disordered Protein. <i>Molecular Cell</i> , 2016, 63, 72-85.	9.7	622
15	Increasing the genome-targeting scope and precision of base editing with engineered Cas9-cytidine deaminase fusions. <i>Nature Biotechnology</i> , 2017, 35, 371-376.	17.5	609
16	Improved base excision repair inhibition and bacteriophage Mu Gam protein yields C:G-to-T:A base editors with higher efficiency and product purity. <i>Science Advances</i> , 2017, 3, eaao4774.	10.3	582
17	Prime genome editing in rice and wheat. <i>Nature Biotechnology</i> , 2020, 38, 582-585.	17.5	544
18	A system for the continuous directed evolution of biomolecules. <i>Nature</i> , 2011, 472, 499-503.	27.8	518

#	ARTICLE	IF	CITATIONS
19	Phage-assisted evolution of an adenine base editor with improved Cas domain compatibility and activity. <i>Nature Biotechnology</i> , 2020, 38, 883-891.	17.5	502
20	Efficient delivery of genome-editing proteins using bioreducible lipid nanoparticles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 2868-2873.	7.1	495
21	A general strategy for the evolution of bond-forming enzymes using yeast display. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 11399-11404.	7.1	479
22	Supercharging Proteins Can Impart Unusual Resilience. <i>Journal of the American Chemical Society</i> , 2007, 129, 10110-10112.	13.7	438
23	Predictable and precise template-free CRISPR editing of pathogenic variants. <i>Nature</i> , 2018, 563, 646-651.	27.8	414
24	Treatment of autosomal dominant hearing loss by in vivo delivery of genome editing agents. <i>Nature</i> , 2018, 553, 217-221.	27.8	412
25	A bacterial cytidine deaminase toxin enables CRISPR-free mitochondrial base editing. <i>Nature</i> , 2020, 583, 631-637.	27.8	409
26	Revealing off-target cleavage specificities of zinc-finger nucleases by in vitro selection. <i>Nature Methods</i> , 2011, 8, 765-770.	19.0	404
27	Small moleculeâ€“triggered Cas9 protein with improved genome-editing specificity. <i>Nature Chemical Biology</i> , 2015, 11, 316-318.	8.0	364
28	Improving the DNA specificity and applicability of base editing through protein engineering and protein delivery. <i>Nature Communications</i> , 2017, 8, 15790.	12.8	343
29	Enhanced prime editing systems by manipulating cellular determinants of editing outcomes. <i>Cell</i> , 2021, 184, 5635-5652.e29.	28.9	332
30	Cytosine and adenine base editing of the brain, liver, retina, heart and skeletal muscle of mice via adeno-associated viruses. <i>Nature Biomedical Engineering</i> , 2020, 4, 97-110.	22.5	293
31	Engineered pegRNAs improve prime editing efficiency. <i>Nature Biotechnology</i> , 2022, 40, 402-410.	17.5	293
32	In vivo base editing rescues Hutchinsonâ€“Gilford progeria syndrome in mice. <i>Nature</i> , 2021, 589, 608-614.	27.8	275
33	Evaluation and minimization of Cas9-independent off-target DNA editing by cytosine base editors. <i>Nature Biotechnology</i> , 2020, 38, 620-628.	17.5	272
34	Engineered virus-like particles for efficient in vivo delivery of therapeutic proteins. <i>Cell</i> , 2022, 185, 250-265.e16.	28.9	251
35	Continuous evolution of SpCas9 variants compatible with non-G PAMs. <i>Nature Biotechnology</i> , 2020, 38, 471-481.	17.5	234
36	Programmable deletion, replacement, integration and inversion of large DNA sequences with twin prime editing. <i>Nature Biotechnology</i> , 2022, 40, 731-740.	17.5	230

#	ARTICLE	IF	CITATIONS
37	Continuous evolution of base editors with expanded target compatibility and improved activity. Nature Biotechnology, 2019, 37, 1070-1079.	17.5	215
38	Anti-diabetic activity of insulin-degrading enzyme inhibitors mediated by multiple hormones. Nature, 2014, 511, 94-98.	27.8	207
39	Circularly permuted and PAM-modified Cas9 variants broaden the targeting scope of base editors. Nature Biotechnology, 2019, 37, 626-631.	17.5	207
40	Analysis and minimization of cellular RNA editing by DNA adenine base editors. Science Advances, 2019, 5, eaax5717.	10.3	206
41	Rewritable multi-event analog recording in bacterial and mammalian cells. Science, 2018, 360, .	12.6	193
42	Potent Delivery of Functional Proteins into Mammalian Cells <i>in Vitro</i> and <i>in Vivo</i> Using a Supercharged Protein. ACS Chemical Biology, 2010, 5, 747-752.	3.4	185
43	Continuous directed evolution of aminoacyl-tRNA synthetases. Nature Chemical Biology, 2017, 13, 1253-1260.	8.0	185
44	Broad specificity profiling of TALENs results in engineered nucleases with improved DNA-cleavage specificity. Nature Methods, 2014, 11, 429-435.	19.0	182
45	Massively parallel assessment of human variants with base editor screens. Cell, 2021, 184, 1064-1080.e20.	28.9	175
46	Base editing of haematopoietic stem cells rescues sickle cell disease in mice. Nature, 2021, 595, 295-302.	27.8	175
47	Programmable m6A modification of cellular RNAs with a Cas13-directed methyltransferase. Nature Biotechnology, 2020, 38, 1431-1440.	17.5	173
48	A DNA-based molecular probe for optically reporting cellular traction forces. Nature Methods, 2014, 11, 1229-1232.	19.0	171
49	Aptazyme-embedded guide RNAs enable ligand-responsive genome editing and transcriptional activation. Nature Communications, 2017, 8, 15939.	12.8	169
50	In vivo base editing of post-mitotic sensory cells. Nature Communications, 2018, 9, 2184.	12.8	166
51	Determinants of Base Editing Outcomes from Target Library Analysis and Machine Learning. Cell, 2020, 182, 463-480.e30.	28.9	166
52	Continuous evolution of Bacillus thuringiensis toxins overcomes insect resistance. Nature, 2016, 533, 58-63.	27.8	159
53	Reprogramming the specificity of sortase enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13343-13348.	7.1	151
54	Development of potent in vivo mutagenesis plasmids with broad mutational spectra. Nature Communications, 2015, 6, 8425.	12.8	138

#	ARTICLE	IF	CITATIONS
55	Adenine base editing in an adult mouse model of tyrosinaemia. <i>Nature Biomedical Engineering</i> , 2020, 4, 125-130.	22.5	136
56	A High-Throughput Platform to Identify Small-Molecule Inhibitors of CRISPR-Cas9. <i>Cell</i> , 2019, 177, 1067-1079.e19.	28.9	133
57	Therapeutic inÂvivo delivery of gene editing agents. <i>Cell</i> , 2022, 185, 2806-2827.	28.9	131
58	Negative selection and stringency modulation in phage-assisted continuous evolution. <i>Nature Chemical Biology</i> , 2014, 10, 216-222.	8.0	129
59	Efficient CÂ€G-to-GÂ€C base editors developed using CRISPRi screens, target-library analysis, and machine learning. <i>Nature Biotechnology</i> , 2021, 39, 1414-1425.	17.5	118
60	DNA capture by a CRISPR-Cas9Â€‘guided adenine base editor. <i>Science</i> , 2020, 369, 566-571.	12.6	114
61	In vivo base editing restores sensory transduction and transiently improves auditory function in a mouse model of recessive deafness. <i>Science Translational Medicine</i> , 2020, 12, .	12.4	114
62	Discovery and Characterization of a Peptide That Enhances Endosomal Escape of Delivered Proteins in Vitro and in Vivo. <i>Journal of the American Chemical Society</i> , 2015, 137, 14084-14093.	13.7	109
63	A Class of Human Proteins that Deliver Functional Proteins into Mammalian Cells InÂVtro and InÂVivo. <i>Chemistry and Biology</i> , 2011, 18, 833-838.	6.0	98
64	High-throughput analysis of the activities of xCas9, SpCas9-NG and SpCas9 at matched and mismatched target sequences in human cells. <i>Nature Biomedical Engineering</i> , 2020, 4, 111-124.	22.5	98
65	Experimental interrogation of the path dependence and stochasticity of protein evolution using phage-assisted continuous evolution. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 9007-9012.	7.1	92
66	Restoration of visual function in adult mice with an inherited retinal disease via adenine base editing. <i>Nature Biomedical Engineering</i> , 2021, 5, 169-178.	22.5	90
67	Precision genome editing using cytosine and adenine base editors in mammalian cells. <i>Nature Protocols</i> , 2021, 16, 1089-1128.	12.0	90
68	Editing the Genome Without Double-Stranded DNA Breaks. <i>ACS Chemical Biology</i> , 2018, 13, 383-388.	3.4	89
69	Continuous directed evolution of DNA-binding proteins to improve TALEN specificity. <i>Nature Methods</i> , 2015, 12, 939-942.	19.0	88
70	InÂvivo somatic cell base editing and prime editing. <i>Molecular Therapy</i> , 2021, 29, 3107-3124.	8.2	87
71	Phage-assisted continuous evolution of proteases with altered substrate specificity. <i>Nature Communications</i> , 2017, 8, 956.	12.8	85
72	The NIH Somatic Cell Genome Editing program. <i>Nature</i> , 2021, 592, 195-204.	27.8	84

#	ARTICLE	IF	CITATIONS
73	Evolution of sequence-defined highly functionalized nucleic acid polymers. <i>Nature Chemistry</i> , 2018, 10, 420-427.	13.6	83
74	A system for the continuous directed evolution of proteases rapidly reveals drug-resistance mutations. <i>Nature Communications</i> , 2014, 5, 5352.	12.8	82
75	CRISPR-free base editors with enhanced activity and expanded targeting scope in mitochondrial and nuclear DNA. <i>Nature Biotechnology</i> , 2022, 40, 1378-1387.	17.5	81
76	Cellular Uptake Mechanisms and Endosomal Trafficking of Supercharged Proteins. <i>Chemistry and Biology</i> , 2012, 19, 831-843.	6.0	80
77	The developing toolkit of continuous directed evolution. <i>Nature Chemical Biology</i> , 2020, 16, 610-619.	8.0	80
78	Development of hRad51-Cas9 nickase fusions that mediate HDR without double-stranded breaks. <i>Nature Communications</i> , 2019, 10, 2212.	12.8	76
79	Identification of Ligand-Target Pairs from Combined Libraries of Small Molecules and Unpurified Protein Targets in Cell Lysates. <i>Journal of the American Chemical Society</i> , 2014, 136, 3264-3270.	13.7	74
80	Crystal structures reveal an elusive functional domain of pyrrolysyl-tRNA synthetase. <i>Nature Chemical Biology</i> , 2017, 13, 1261-1266.	8.0	73
81	Targeting fidelity of adenine and cytosine base editors in mouse embryos. <i>Nature Communications</i> , 2018, 9, 4804.	12.8	72
82	One-Pot Dual Labeling of IgG 1 and Preparation of C-to-C Fusion Proteins Through a Combination of Sortase A and Butelase 1. <i>Bioconjugate Chemistry</i> , 2018, 29, 3245-3249.	3.6	72
83	Glucose Response by Stem Cell-Derived β^2 Cells In Vitro Is Inhibited by a Bottleneck in Glycolysis. <i>Cell Reports</i> , 2020, 31, 107623.	6.4	72
84	Continuous directed evolution of proteins with improved soluble expression. <i>Nature Chemical Biology</i> , 2018, 14, 972-980.	8.0	71
85	Enhanced Functional Potential of Nucleic Acid Aptamer Libraries Patterned to Increase Secondary Structure. <i>Journal of the American Chemical Society</i> , 2010, 132, 9453-9464.	13.7	70
86	Base Editor Correction of COL7A1 in Recessive Dystrophic Epidermolysis Bullosa Patient-Derived Fibroblasts and iPSCs. <i>Journal of Investigative Dermatology</i> , 2020, 140, 338-347.e5.	0.7	69
87	Discovery of a Covalent Kinase Inhibitor from a DNA-Encoded Small-Molecule Library—Protein Library Selection. <i>Journal of the American Chemical Society</i> , 2017, 139, 10192-10195.	13.7	67
88	Chemical modifications of adenine base editor mRNA and guide RNA expand its application scope. <i>Nature Communications</i> , 2020, 11, 1979.	12.8	66
89	Analysis of Active Site Residues in <i>Escherichia coli</i> Chorismate Mutase by Site-Directed Mutagenesis. <i>Journal of the American Chemical Society</i> , 1996, 118, 1789-1790.	13.7	65
90	DNA Ligase-Mediated Translation of DNA Into Densely Functionalized Nucleic Acid Polymers. <i>Journal of the American Chemical Society</i> , 2013, 135, 98-101.	13.7	65

#	ARTICLE	IF	CITATIONS
91	In vivo continuous directed evolution. Current Opinion in Chemical Biology, 2015, 24, 1-10.	6.1	65
92	Prime editing in mice reveals the essentiality of a single base in driving tissue-specific gene expression. Genome Biology, 2021, 22, 83.	8.8	62
93	Phage-Assisted Evolution of <i>Bacillus methanolicus</i> Methanol Dehydrogenase 2. ACS Synthetic Biology, 2019, 8, 796-806.	3.8	61
94	Determining the Specificities of TALENs, Cas9, and Other Genome-Editing Enzymes. Methods in Enzymology, 2014, 546, 47-78.	1.0	59
95	Novel selection methods for DNA-encoded chemical libraries. Current Opinion in Chemical Biology, 2015, 26, 55-61.	6.1	54
96	Green fluorescent proteins engineered for cartilage-targeted drug delivery: Insights for transport into highly charged avascular tissues. Biomaterials, 2018, 183, 218-233.	11.4	50
97	A programmable Cas9-serine recombinase fusion protein that operates on DNA sequences in mammalian cells. Nucleic Acids Research, 2016, 44, gkw707.	14.5	46
98	Phage-assisted evolution of botulinum neurotoxin proteases with reprogrammed specificity. Science, 2021, 371, 803-810.	12.6	46
99	Ensemble cryoEM elucidates the mechanism of insulin capture and degradation by human insulin degrading enzyme. ELife, 2018, 7, .	6.0	45
100	CREB5 Promotes Resistance to Androgen-Receptor Antagonists and Androgen Deprivation in Prostate Cancer. Cell Reports, 2019, 29, 2355-2370.e6.	6.4	45
101	Development of a formaldehyde biosensor with application to synthetic methylotrophy. Biotechnology and Bioengineering, 2018, 115, 206-215.	3.3	44
102	Chemical Biology Approaches to Genome Editing: Understanding, Controlling, and Delivering Programmable Nucleases. Cell Chemical Biology, 2016, 23, 57-73.	5.2	42
103	Phage-assisted continuous and non-continuous evolution. Nature Protocols, 2020, 15, 4101-4127.	12.0	42
104	In vivo base editing rescues cone photoreceptors in a mouse model of early-onset inherited retinal degeneration. Nature Communications, 2022, 13, 1830.	12.8	42
105	Analytical Devices Based on Direct Synthesis of DNA on Paper. Analytical Chemistry, 2016, 88, 725-731.	6.5	38
106	A Population-Based Experimental Model for Protein Evolution: Effects of Mutation Rate and Selection Stringency on Evolutionary Outcomes. Biochemistry, 2013, 52, 1490-1499.	2.5	37
107	Substrate-selective inhibitors that reprogram the activity of insulin-degrading enzyme. Nature Chemical Biology, 2019, 15, 565-574.	8.0	36
108	Laboratory evolution of a sortase enzyme that modifies amyloid- β protein. Nature Chemical Biology, 2021, 17, 317-325.	8.0	34

#	ARTICLE	IF	CITATIONS
109	In situ regeneration of bioactive coatings enabled by an evolved <i>Staphylococcus aureus</i> sortase A. <i>Nature Communications</i> , 2016, 7, 11140.	12.8	33
110	Electrophilic activity-based RNA probes reveal a self-alkylating RNA for RNA labeling. <i>Nature Chemical Biology</i> , 2014, 10, 1049-1054.	8.0	30
111	Immobilization of Actively Thromboresistant Assemblies on Sterile Blood-Contacting Surfaces. <i>Advanced Healthcare Materials</i> , 2014, 3, 30-35.	7.6	28
112	Functional correction of <i>CFTR</i> mutations in human airway epithelial cells using adenine base editors. <i>Nucleic Acids Research</i> , 2021, 49, 10558-10572.	14.5	25
113	Disruption of HIV-1 co-receptors CCR5 and CXCR4 in primary human T cells and hematopoietic stem and progenitor cells using base editing. <i>Molecular Therapy</i> , 2022, 30, 130-144.	8.2	23
114	High-resolution specificity profiling and off-target prediction for site-specific DNA recombinases. <i>Nature Communications</i> , 2019, 10, 1937.	12.8	22
115	An anionic human protein mediates cationic liposome delivery of genome editing proteins into mammalian cells. <i>Nature Communications</i> , 2019, 10, 2905.	12.8	20
116	Side chain determinants of biopolymer function during selection and replication. <i>Nature Chemical Biology</i> , 2019, 15, 419-426.	8.0	17
117	Prioritization of autoimmune disease-associated genetic variants that perturb regulatory element activity in T cells. <i>Nature Genetics</i> , 2022, 54, 603-612.	21.4	15
118	Multimodal small-molecule screening for human prion protein binders. <i>Journal of Biological Chemistry</i> , 2020, 295, 13516-13531.	3.4	14
119	Disulfide-compatible phage-assisted continuous evolution in the periplasmic space. <i>Nature Communications</i> , 2021, 12, 5959.	12.8	13
120	Structural and Biochemical Basis for Intracellular Kinase Inhibition by Src-specific Peptidic Macrocycles. <i>Cell Chemical Biology</i> , 2016, 23, 1103-1112.	5.2	12
121	Simultaneous targeting of linked loci in mouse embryos using base editing. <i>Scientific Reports</i> , 2019, 9, 1662.	3.3	12
122	Mechanisms of angiogenic incompetence in Hutchinson- <i>Gilford</i> progeria via downregulation of endothelial NOS. <i>Aging Cell</i> , 2021, 20, e13388.	6.7	11
123	A naturally occurring, noncanonical GTP aptamer made of simple tandem repeats. <i>RNA Biology</i> , 2014, 11, 682-692.	3.1	9
124	A rechargeable anti-thrombotic coating for blood-contacting devices. <i>Biomaterials</i> , 2021, 276, 121011.	11.4	8
125	Adenosine Base Editing of β -Globin Promoters Induces Fetal Hemoglobin and Inhibit Erythroid Sickling. <i>Blood</i> , 2020, 136, 21-22.	1.4	8
126	Reconstruction of evolving gene variants and fitness from short sequencing reads. <i>Nature Chemical Biology</i> , 2021, 17, 1188-1198.	8.0	8

#	ARTICLE	IF	CITATIONS
127	Base editor treats progeria in mice. Nature, 2021,, .	27.8	4