David R Liu

List of Publications by Year
in descending order

127 papers	36,177 citations	11235 73 h-index	12940 136 g-index
149 all docs	149 docs citations	149 times ranked	26220 citing authors

#	Article	IF	Citations
1	Engineered pegRNAs improve prime editing efficiency. Nature Biotechnology, 2022, 40, 402-410.	9.4	293
2	Disruption of HIV-1 co-receptors CCR5 and CXCR4 in primary human TÂcells and hematopoietic stem and progenitor cells using base editing. Molecular Therapy, 2022, 30, 130-144.	3.7	23
3	Engineered virus-like particles for efficient inÂvivo delivery of therapeutic proteins. Cell, 2022, 185, 250-265.e16.	13.5	251
4	Programmable deletion, replacement, integration and inversion of large DNA sequences with twin prime editing. Nature Biotechnology, 2022, 40, 731-740.	9.4	230
5	CRISPR-free base editors with enhanced activity and expanded targeting scope in mitochondrial and nuclear DNA. Nature Biotechnology, 2022, 40, 1378-1387.	9.4	81
6	In vivo base editing rescues cone photoreceptors in a mouse model of early-onset inherited retinal degeneration. Nature Communications, 2022, 13, 1830.	5.8	42
7	Prioritization of autoimmune disease-associated genetic variants that perturb regulatory element activity in T cells. Nature Genetics, 2022, 54, 603-612.	9.4	15
8	Therapeutic inÂvivo delivery of gene editing agents. Cell, 2022, 185, 2806-2827.	13.5	131
9	Restoration of visual function in adult mice with an inherited retinal disease via adenine base editing. Nature Biomedical Engineering, 2021, 5, 169-178.	11.6	90
10	Precision genome editing using cytosine and adenine base editors in mammalian cells. Nature Protocols, 2021, 16, 1089-1128.	5.5	90
11	Laboratory evolution of a sortase enzyme that modifies amyloid-Î² protein. Nature Chemical Biology, 2021, 17, 317-325.	3.9	34
12	In vivo base editing rescues Hutchinsonâ€"Gilford progeria syndrome in mice. Nature, 2021, 589, 608-614.	13.7	275
13	Phage-assisted evolution of botulinum neurotoxin proteases with reprogrammed specificity. Science, 2021, 371, 803-810.	6.0	46
14	Massively parallel assessment of human variants with base editor screens. Cell, 2021, 184, 1064-1080.e20.	13.5	175
15	Prime editing in mice reveals the essentiality of a single base in driving tissue-specific gene expression. Genome Biology, 2021, 22, 83.	3.8	62
16	The NIH Somatic Cell Genome Editing program. Nature, 2021, 592, 195-204.	13.7	84
17	Mechanisms of angiogenic incompetence in Hutchinsonâ€"Gilford progeria via downregulation of endothelial NOS. Aging Cell, 2021, 20, e13388.	3.0	11
18	Base editor treats progeria in mice. Nature, 2021, , .	13.7	4

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19	Base editing of haematopoietic stem cells rescues sickle cell disease in mice. Nature, 2021, 595, 295-302.	13.7	175
20	Efficient Câ€¢G-to-Gâ€¢C base editors developed using CRISPRi screens, target-library analysis, and machine learning. Nature Biotechnology, 2021, 39, 1414-1425.	9.4	118
21	A rechargeable anti-thrombotic coating for blood-contacting devices. Biomaterials, 2021, 276, 121011.	5.7	8
22	InÂvivo somatic cell base editing and prime editing. Molecular Therapy, 2021, 29, 3107-3124.	3.7	87
23	Functional correction of<i>CFTR</i>mutations in human airway epithelial cells using adenine base editors. Nucleic Acids Research, 2021, 49, 10558-10572.	6.5	25
24	Enhanced prime editing systems by manipulating cellular determinants of editing outcomes. Cell, 2021, 184, 5635-5652.e29.	13.5	332
25	Reconstruction of evolving gene variants and fitness from short sequencing reads. Nature Chemical Biology, 2021, 17, 1188-1198.	3.9	8
26	Disulfide-compatible phage-assisted continuous evolution in the periplasmic space. Nature Communications, 2021, 12, 5959.	5.8	13
27	Adenine base editing in an adult mouse model of tyrosinaemia. Nature Biomedical Engineering, 2020, 4, 125-130.	11.6	136
28	Base Editor Correction of COL7A1 in RecessiveÂDystrophic Epidermolysis Bullosa Patient-Derived Fibroblasts and iPSCs. Journal of Investigative Dermatology, 2020, 140, 338-347.e5.	0.3	69
29	Phage-assisted continuous and non-continuous evolution. Nature Protocols, 2020, 15, 4101-4127.	5.5	42
30	DNA capture by a CRISPR-Cas9â€“guided adenine base editor. Science, 2020, 369, 566-571.	6.0	114
31	Multimodal small-molecule screening for human prion protein binders. Journal of Biological Chemistry, 2020, 295, 13516-13531.	1.6	14
32	Glucose Response by Stem Cell-Derived Î² Cells InÂVitro Is Inhibited by a Bottleneck in Glycolysis. Cell Reports, 2020, 31, 107623.	2.9	72
33	Genome editing with CRISPRâ€“Cas nucleases, base editors, transposases and prime editors. Nature Biotechnology, 2020, 38, 824-844.	9.4	1,277
34	In vivo base editing restores sensory transduction and transiently improves auditory function in a mouse model of recessive deafness. Science Translational Medicine, 2020, 12, .	5.8	114
35	Determinants of Base Editing Outcomes from Target Library Analysis and Machine Learning. Cell, 2020, 182, 463-480.e30.	13.5	166
36	Phage-assisted evolution of an adenine base editor with improved Cas domain compatibility and activity. Nature Biotechnology, 2020, 38, 883-891.	9.4	502

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37	Prime genome editing in rice and wheat. Nature Biotechnology, 2020, 38, 582-585.	9.4	544
38	Programmable m6A modification of cellular RNAs with a Cas13-directed methyltransferase. Nature Biotechnology, 2020, 38, 1431-1440.	9.4	173
39	A bacterial cytidine deaminase toxin enables CRISPR-free mitochondrial base editing. Nature, 2020, 583, 631-637.	13.7	409
40	Continuous evolution of SpCas9 variants compatible with non-G PAMs. Nature Biotechnology, 2020, 38, 471-481.	9.4	234
41	Evaluation and minimization of Cas9-independent off-target DNA editing by cytosine base editors. Nature Biotechnology, 2020, 38, 620-628.	9.4	272
42	High-throughput analysis of the activities of xCas9, SpCas9-NG and SpCas9 at matched and mismatched target sequences in human cells. Nature Biomedical Engineering, 2020, 4, 111-124.	11.6	98
43	Cytosine and adenine base editing of the brain, liver, retina, heart and skeletal muscle of mice via adeno-associated viruses. Nature Biomedical Engineering, 2020, 4, 97-110.	11.6	293
44	Chemical modifications of adenine base editor mRNA and guide RNA expand its application scope. Nature Communications, 2020, 11, 1979.	5.8	66
45	The developing toolkit of continuous directed evolution. Nature Chemical Biology, 2020, 16, 610-619.	3.9	80
46	Adenosine Base Editing of Î³-Globin Promoters Induces Fetal Hemoglobin and Inhibit Erythroid Sickling. Blood, 2020, 136, 21-22.	0.6	8
47	Continuous evolution of base editors with expanded target compatibility and improved activity. Nature Biotechnology, 2019, 37, 1070-1079.	9.4	215
48	An anionic human protein mediates cationic liposome delivery of genome editing proteins into mammalian cells. Nature Communications, 2019, 10, 2905.	5.8	20
49	Search-and-replace genome editing without double-strand breaks or donor DNA. Nature, 2019, 576, 149-157.	13.7	2,662
50	Analysis and minimization of cellular RNA editing by DNA adenine base editors. Science Advances, 2019, 5, eaax5717.	4.7	206
51	Development of hRad51â€"Cas9 nickase fusions that mediate HDR without double-stranded breaks. Nature Communications, 2019, 10, 2212.	5.8	76
52	Circularly permuted and PAM-modified Cas9 variants broaden the targeting scope of base editors. Nature Biotechnology, 2019, 37, 626-631.	9.4	207
53	Substrate-selective inhibitors that reprogram the activity of insulin-degrading enzyme. Nature Chemical Biology, 2019, 15, 565-574.	3.9	36
54	A High-Throughput Platform to Identify Small-Molecule Inhibitors of CRISPR-Cas9. Cell, 2019, 177, 1067-1079.e19.	13.5	133

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55	High-resolution specificity profiling and off-target prediction for site-specific DNA recombinases. Nature Communications, 2019, 10, 1937.	5.8	22
56	Phage-Assisted Evolution of <i>Bacillus methanolicus</i> Methanol Dehydrogenase 2. ACS Synthetic Biology, 2019, 8, 796-806.	1.9	61
57	Simultaneous targeting of linked loci in mouse embryos using base editing. Scientific Reports, 2019, 9, 1662.	1.6	12
58	Side chain determinants of biopolymer function during selection and replication. Nature Chemical Biology, 2019, 15, 419-426.	3.9	17
59	CRISPResso2 provides accurate and rapid genome editing sequence analysis. Nature Biotechnology, 2019, 37, 224-226.	9.4	891
60	CREB5 Promotes Resistance to Androgen-Receptor Antagonists and Androgen Deprivation in Prostate Cancer. Cell Reports, 2019, 29, 2355-2370.e6.	2.9	45
61	Evolved Cas9 variants with broad PAM compatibility and high DNA specificity. Nature, 2018, 556, 57-63.	13.7	1,195
62	Evolution of sequence-defined highly functionalized nucleic acid polymers. Nature Chemistry, 2018, 10, 420-427.	6.6	83
63	Rewritable multi-event analog recording in bacterial and mammalian cells. Science, 2018, 360, .	6.0	193
64	Treatment of autosomal dominant hearing loss by in vivo delivery of genome editing agents. Nature, 2018, 553, 217-221.	13.7	412
65	Editing the Genome Without Double-Stranded DNA Breaks. ACS Chemical Biology, 2018, 13, 383-388.	1.6	89
66	Development of a formaldehyde biosensor with application to synthetic methylotrophy. Biotechnology and Bioengineering, 2018, 115, 206-215.	1.7	44
67	Targeting fidelity of adenine and cytosine base editors in mouse embryos. Nature Communications, 2018, 9, 4804.	5.8	72
68	Predictable and precise template-free CRISPR editing of pathogenic variants. Nature, 2018, 563, 646-651.	13.7	414
69	Base editing: precision chemistry on the genome and transcriptome ofÂliving cells. Nature Reviews Genetics, 2018, 19, 770-788.	7.7	1,072
70	One-Pot Dual Labeling of IgG 1 and Preparation of C-to-C Fusion Proteins Through a Combination of Sortase A and Butelase 1. Bioconjugate Chemistry, 2018, 29, 3245-3249.	1.8	72
71	Improving cytidine and adenine base editors by expression optimization and ancestral reconstruction. Nature Biotechnology, 2018, 36, 843-846.	9.4	644
72	Ensemble cryoEM elucidates the mechanism of insulin capture and degradation by human insulin degrading enzyme. ELife, 2018, 7, .	2.8	45

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73	Continuous directed evolution of proteins with improved soluble expression. Nature Chemical Biology, 2018, 14, 972-980.	3.9	71
74	Green fluorescent proteins engineered for cartilage-targeted drug delivery: Insights for transport into highly charged avascular tissues. Biomaterials, 2018, 183, 218-233.	5.7	50
75	In vivo base editing of post-mitotic sensory cells. Nature Communications, 2018, 9, 2184.	5.8	166
76	Increasing the genome-targeting scope and precision of base editing with engineered Cas9-cytidine deaminase fusions. Nature Biotechnology, 2017, 35, 371-376.	9.4	609
77	Improving the DNA specificity and applicability of base editing through protein engineering and protein delivery. Nature Communications, 2017, 8, 15790.	5.8	343
78	Programmable base editing of Aâ€¢T to Gâ€¢C in genomic DNA without DNA cleavage. Nature, 2017, 551, 464-471.	13.7	2,807
79	Crystal structures reveal an elusive functional domain of pyrrolysyl-tRNA synthetase. Nature Chemical Biology, 2017, 13, 1261-1266.	3.9	73
80	Phage-assisted continuous evolution of proteases with altered substrate specificity. Nature Communications, 2017, 8, 956.	5.8	85
81	Continuous directed evolution of aminoacyl-tRNA synthetases. Nature Chemical Biology, 2017, 13, 1253-1260.	3.9	185
82	Improved base excision repair inhibition and bacteriophage Mu Gam protein yields C:G-to-T:A base editors with higher efficiency and product purity. Science Advances, 2017, 3, eaao4774.	4.7	582
83	Discovery of a Covalent Kinase Inhibitor from a DNA-Encoded Small-Molecule Library Ã— Protein Library Selection. Journal of the American Chemical Society, 2017, 139, 10192-10195.	6.6	67
84	Aptazyme-embedded guide RNAs enable ligand-responsive genome editing and transcriptional activation. Nature Communications, 2017, 8, 15939.	5.8	169
85	CRISPR-Based Technologies for the Manipulation of Eukaryotic Genomes. Cell, 2017, 168, 20-36.	13.5	783
86	Sequence Determinants of Intracellular Phase Separation by Complex Coacervation of a Disordered Protein. Molecular Cell, 2016, 63, 72-85.	4.5	622
87	Efficient delivery of genome-editing proteins using bioreducible lipid nanoparticles. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2868-2873.	3.3	495
88	Programmable editing of a target base in genomic DNA without double-stranded DNA cleavage. Nature, 2016, 533, 420-424.	13.7	3,662
89	Continuous evolution of Bacillus thuringiensis toxins overcomes insect resistance. Nature, 2016, 533, 58-63.	13.7	159
90	Structural and Biochemical Basis for Intracellular Kinase Inhibition by Src-specific Peptidic Macrocycles. Cell Chemical Biology, 2016, 23, 1103-1112.	2.5	12

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91	A programmable Cas9-serine recombinase fusion protein that operates on DNA sequences in mammalian cells. Nucleic Acids Research, 2016, 44, gkw707.	6.5	46
92	In situ regeneration of bioactive coatings enabled by an evolved Staphylococcus aureus sortase A. Nature Communications, 2016, 7, 11140.	5.8	33
93	Chemical Biology Approaches to Genome Editing: Understanding, Controlling, and Delivering Programmable Nucleases. Cell Chemical Biology, 2016, 23, 57-73.	2.5	42
94	Analytical Devices Based on Direct Synthesis of DNA on Paper. Analytical Chemistry, 2016, 88, 725-731.	3.2	38
95	Methods for the directed evolution of proteins. Nature Reviews Genetics, 2015, 16, 379-394.	7.7	699
96	Novel selection methods for DNA-encoded chemical libraries. Current Opinion in Chemical Biology, 2015, 26, 55-61.	2.8	54
97	Small moleculeâ€“triggered Cas9 protein with improved genome-editing specificity. Nature Chemical Biology, 2015, 11, 316-318.	3.9	364
98	Continuous directed evolution of DNA-binding proteins to improve TALEN specificity. Nature Methods, 2015, 12, 939-942.	9.0	88
99	Development of potent in vivo mutagenesis plasmids with broad mutational spectra. Nature Communications, 2015, 6, 8425.	5.8	138
100	Discovery and Characterization of a Peptide That Enhances Endosomal Escape of Delivered Proteins in Vitro and in Vivo. Journal of the American Chemical Society, 2015, 137, 14084-14093.	6.6	109
101	In vivo continuous directed evolution. Current Opinion in Chemical Biology, 2015, 24, 1-10.	2.8	65
102	Cationic lipid-mediated delivery of proteins enables efficient protein-based genome editing in vitro and in vivo. Nature Biotechnology, 2015, 33, 73-80.	9.4	1,180
103	A naturally occurring, noncanonical GTP aptamer made of simple tandem repeats. RNA Biology, 2014, 11, 682-692.	1.5	9
104	Immobilization of Actively Thromboresistant Assemblies on Sterile Bloodâ€Contacting Surfaces. Advanced Healthcare Materials, 2014, 3, 30-35.	3.9	28
105	Determining the Specificities of TALENs, Cas9, and Other Genome-Editing Enzymes. Methods in Enzymology, 2014, 546, 47-78.	0.4	59
106	Broad specificity profiling of TALENs results in engineered nucleases with improved DNA-cleavage specificity. Nature Methods, 2014, 11, 429-435.	9.0	182
107	Fusion of catalytically inactive Cas9 to FokI nuclease improves the specificity of genome modification. Nature Biotechnology, 2014, 32, 577-582.	9.4	740
108	Anti-diabetic activity of insulin-degrading enzyme inhibitors mediated by multiple hormones. Nature, 2014, 511, 94-98.	13.7	207

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109	Negative selection and stringency modulation in phage-assisted continuous evolution. Nature Chemical Biology, 2014, 10, 216-222.	3.9	129
110	Electrophilic activity-based RNA probes reveal a self-alkylating RNA for RNA labeling. Nature Chemical Biology, 2014, 10, 1049-1054.	3.9	30
111	A system for the continuous directed evolution of proteases rapidly reveals drug-resistance mutations. Nature Communications, 2014, 5, 5352.	5.8	82
112	A DNA-based molecular probe for optically reporting cellular traction forces. Nature Methods, 2014, 11, 1229-1232.	9.0	171
113	Reprogramming the specificity of sortase enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13343-13348.	3.3	151
114	Identification of Ligandâ€“Target Pairs from Combined Libraries of Small Molecules and Unpurified Protein Targets in Cell Lysates. Journal of the American Chemical Society, 2014, 136, 3264-3270.	6.6	74
115	High-throughput profiling of off-target DNA cleavage reveals RNA-programmed Cas9 nuclease specificity. Nature Biotechnology, 2013, 31, 839-843.	9.4	1,303
116	Experimental interrogation of the path dependence and stochasticity of protein evolution using phage-assisted continuous evolution. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9007-9012.	3.3	92
117	DNA Ligase-Mediated Translation of DNA Into Densely Functionalized Nucleic Acid Polymers. Journal of the American Chemical Society, 2013, 135, 98-101.	6.6	65
118	A Population-Based Experimental Model for Protein Evolution: Effects of Mutation Rate and Selection Stringency on Evolutionary Outcomes. Biochemistry, 2013, 52, 1490-1499.	1.2	37
119	Cellular Uptake Mechanisms and Endosomal Trafficking of Supercharged Proteins. Chemistry and Biology, 2012, 19, 831-843.	6.2	80
120	Revealing off-target cleavage specificities of zinc-finger nucleases by in vitro selection. Nature Methods, 2011, 8, 765-770.	9.0	404
121	A system for the continuous directed evolution of biomolecules. Nature, 2011, 472, 499-503.	13.7	518
122	A Class of Human Proteins that Deliver Functional Proteins into Mammalian Cells InÂVitro and InÂVivo. Chemistry and Biology, 2011, 18, 833-838.	6.2	98
123	A general strategy for the evolution of bond-forming enzymes using yeast display. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11399-11404.	3.3	479
124	Enhanced Functional Potential of Nucleic Acid Aptamer Libraries Patterned to Increase Secondary Structure. Journal of the American Chemical Society, 2010, 132, 9453-9464.	6.6	70
125	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.	1.6	185
126	Supercharging Proteins Can Impart Unusual Resilience. Journal of the American Chemical Society, 2007, 129, 10110-10112.	6.6	438

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127	Analysis of Active Site Residues inEscherichia coliChorismate Mutase by Site-Directed Mutagenesis. Journal of the American Chemical Society, 1996, 118, 1789-1790.	6.6	65