David R Liu

List of Publications by Year in Descending Order

130 papers	21,500 citations	60 h-index	146 g-index
149 ext. papers	29,141 ext. citations	24.3 avg, IF	7.73 L-index

#	Paper	IF	Citations
130	Engineered virus-like particles for efficient in vivo delivery of therapeutic proteins.. *Cell*, **2022**, 185, 250-265.e16	56.2	26
129	CRISPR-free base editors with enhanced activity and expanded targeting scope in mitochondrial and nuclear DNA.. *Nature Biotechnology*, **2022**,	44.5	7
128	In vivo base editing rescues cone photoreceptors in a mouse model of early-onset inherited retinal degeneration.. *Nature Communications*, **2022**, 13, 1830	17.4	8
127	Programmable deletion, replacement, integration and inversion of large DNA sequences with twin prime editing. *Nature Biotechnology*, **2021**,	44.5	18
126	Disulfide-compatible phage-assisted continuous evolution in the periplasmic space. *Nature Communications*, **2021**, 12, 5959	17.4	3
125	Engineered pegRNAs improve prime editing efficiency. *Nature Biotechnology*, **2021**,	44.5	37
124	Enhanced prime editing systems by manipulating cellular determinants of editing outcomes. *Cell*, **2021**, 184, 5635-5652.e29	56.2	48
123	Reconstruction of evolving gene variants and fitness from short sequencing reads. *Nature Chemical Biology*, **2021**, 17, 1188-1198	11.7	0
122	Prime editing in mice reveals the essentiality of a single base in driving tissue-specific gene expression. *Genome Biology*, **2021**, 22, 83	18.3	24
121	The NIH Somatic Cell Genome Editing program. *Nature*, **2021**, 592, 195-204	50.4	21
120	Mechanisms of angiogenic incompetence in Hutchinson-Gilford progeria via downregulation of endothelial NOS. *Aging Cell*, **2021**, 20, e13388	9.9	2
119	Base editing of haematopoietic stem cells rescues sickle cell disease in mice. *Nature*, **2021**, 595, 295-302	50.4	31
118	Efficient C•G-to-G•C base editors developed using CRISPRi screens, target-library analysis, and machine learning. *Nature Biotechnology*, **2021**, 39, 1414-1425	44.5	32
117	Restoration of visual function in adult mice with an inherited retinal disease via adenine base editing. *Nature Biomedical Engineering*, **2021**, 5, 169-178	19	28
116	Precision genome editing using cytosine and adenine base editors in mammalian cells. *Nature Protocols*, **2021**, 16, 1089-1128	18.8	27
115	Laboratory evolution of a sortase enzyme that modifies amyloid-β protein. *Nature Chemical Biology*, **2021**, 17, 317-325	11.7	10
114	In vivo base editing rescues Hutchinson-Gilford progeria syndrome in mice. *Nature*, **2021**, 589, 608-614	50.4	92

113	Phage-assisted evolution of botulinum neurotoxin proteases with reprogrammed specificity. *Science*, **2021**, 371, 803-810	33.3	9
112	Massively parallel assessment of human variants with base editor screens. *Cell*, **2021**, 184, 1064-1080.e20	66.2	49
111	A rechargeable anti-thrombotic coating for blood-contacting devices. *Biomaterials*, **2021**, 276, 121011	15.6	2
110	In vivo somatic cell base editing and prime editing. *Molecular Therapy*, **2021**, 29, 3107-3124	11.7	20
109	Functional correction of CFTR mutations in human airway epithelial cells using adenine base editors. *Nucleic Acids Research*, **2021**, 49, 10558-10572	20.1	2
108	Glucose Response by Stem Cell-Derived Cells In Vitro Is Inhibited by a Bottleneck in Glycolysis. *Cell Reports*, **2020**, 31, 107623	10.6	29
107	Genome editing with CRISPR-Cas nucleases, base editors, transposases and prime editors. *Nature Biotechnology*, **2020**, 38, 824-844	44.5	466
106	In vivo base editing restores sensory transduction and transiently improves auditory function in a mouse model of recessive deafness. *Science Translational Medicine*, **2020**, 12,	17.5	53
105	Determinants of Base Editing Outcomes from Target Library Analysis and Machine Learning. *Cell*, **2020**, 182, 463-480.e30	56.2	75
104	Phage-assisted evolution of an adenine base editor with improved Cas domain compatibility and activity. *Nature Biotechnology*, **2020**, 38, 883-891	44.5	171
103	Prime genome editing in rice and wheat. *Nature Biotechnology*, **2020**, 38, 582-585	44.5	299
102	Programmable mA modification of cellular RNAs with a Cas13-directed methyltransferase. *Nature Biotechnology*, **2020**, 38, 1431-1440	44.5	66
101	A bacterial cytidine deaminase toxin enables CRISPR-free mitochondrial base editing. *Nature*, **2020**, 583, 631-637	50.4	175
100	Continuous evolution of SpCas9 variants compatible with non-G PAMs. *Nature Biotechnology*, **2020**, 38, 471-481	44.5	120
99	Evaluation and minimization of Cas9-independent off-target DNA editing by cytosine base editors. *Nature Biotechnology*, **2020**, 38, 620-628	44.5	142
98	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	19	60
97	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	19	134
96	Chemical modifications of adenine base editor mRNA and guide RNA expand its application scope. *Nature Communications*, **2020**, 11, 1979	17.4	31

95	Adenosine Base Editing of γ-Globin Promoters Induces Fetal Hemoglobin and Inhibit Erythroid Sickling. *Blood*, **2020**, 136, 21-22	2.2	3
94	The developing toolkit of continuous directed evolution. *Nature Chemical Biology*, **2020**, 16, 610-619	11.7	28
93	Phage-assisted continuous and non-continuous evolution. *Nature Protocols*, **2020**, 15, 4101-4127	18.8	11
92	DNA capture by a CRISPR-Cas9-guided adenine base editor. *Science*, **2020**, 369, 566-571	33.3	37
91	Multimodal small-molecule screening for human prion protein binders. *Journal of Biological Chemistry*, **2020**, 295, 13516-13531	5.4	6
90	Adenine base editing in an adult mouse model of tyrosinaemia. *Nature Biomedical Engineering*, **2020**, 4, 125-130	19	86
89	Base Editor Correction of COL7A1 in Recessive Dystrophic Epidermolysis Bullosa Patient-Derived Fibroblasts and iPSCs. *Journal of Investigative Dermatology*, **2020**, 140, 338-347.e5	4.3	33
88	Analysis and minimization of cellular RNA editing by DNA adenine base editors. *Science Advances*, **2019**, 5, eaax5717	14.3	124
87	Development of hRad51-Cas9 nickase fusions that mediate HDR without double-stranded breaks. *Nature Communications*, **2019**, 10, 2212	17.4	52
86	Circularly permuted and PAM-modified Cas9 variants broaden the targeting scope of base editors. *Nature Biotechnology*, **2019**, 37, 626-631	44.5	118
85	Substrate-selective inhibitors that reprogram the activity of insulin-degrading enzyme. *Nature Chemical Biology*, **2019**, 15, 565-574	11.7	21
84	A High-Throughput Platform to Identify Small-Molecule Inhibitors of CRISPR-Cas9. *Cell*, **2019**, 177, 1067-1079.e19	36.2	79
83	High-resolution specificity profiling and off-target prediction for site-specific DNA recombinases. *Nature Communications*, **2019**, 10, 1937	17.4	10
82	Phage-Assisted Evolution of Bacillus methanolicus Methanol Dehydrogenase 2. *ACS Synthetic Biology*, **2019**, 8, 796-806	5.7	37
81	Simultaneous targeting of linked loci in mouse embryos using base editing. *Scientific Reports*, **2019**, 9, 1662	4.9	10
80	Side chain determinants of biopolymer function during selection and replication. *Nature Chemical Biology*, **2019**, 15, 419-426	11.7	15
79	CRISPResso2 provides accurate and rapid genome editing sequence analysis. *Nature Biotechnology*, **2019**, 37, 224-226	44.5	326
78	Continuous evolution of base editors with expanded target compatibility and improved activity. *Nature Biotechnology*, **2019**, 37, 1070-1079	44.5	111

77	An anionic human protein mediates cationic liposome delivery of genome editing proteins into mammalian cells. *Nature Communications*, **2019**, 10, 2905	17.4	6
76	Search-and-replace genome editing without double-strand breaks or donor DNA. *Nature*, **2019**, 576, 149-157	50.4	1318
75	CREB5 Promotes Resistance to Androgen-Receptor Antagonists and Androgen Deprivation in Prostate Cancer. *Cell Reports*, **2019**, 29, 2355-2370.e6	10.6	17
74	Evolved Cas9 variants with broad PAM compatibility and high DNA specificity. *Nature*, **2018**, 556, 57-63	50.4	836
73	Evolution of sequence-defined highly functionalized nucleic acid polymers. *Nature Chemistry*, **2018**, 10, 420-427	17.6	54
72	Rewritable multi-event analog recording in bacterial and mammalian cells. *Science*, **2018**, 360,	33.3	120
71	Treatment of autosomal dominant hearing loss by in vivo delivery of genome editing agents. *Nature*, **2018**, 553, 217-221	50.4	286
70	Editing the Genome Without Double-Stranded DNA Breaks. *ACS Chemical Biology*, **2018**, 13, 383-388	4.9	69
69	Development of a formaldehyde biosensor with application to synthetic methylotrophy. *Biotechnology and Bioengineering*, **2018**, 115, 206-215	4.9	31
68	Continuous directed evolution of proteins with improved soluble expression. *Nature Chemical Biology*, **2018**, 14, 972-980	11.7	52
67	Green fluorescent proteins engineered for cartilage-targeted drug delivery: Insights for transport into highly charged avascular tissues. *Biomaterials*, **2018**, 183, 218-233	15.6	28
66	In vivo base editing of post-mitotic sensory cells. *Nature Communications*, **2018**, 9, 2184	17.4	119
65	Targeting fidelity of adenine and cytosine base editors in mouse embryos. *Nature Communications*, **2018**, 9, 4804	17.4	48
64	Predictable and precise template-free CRISPR editing of pathogenic variants. *Nature*, **2018**, 563, 646-651	50.4	250
63	Base editing: precision chemistry on the genome and transcriptome of living cells. *Nature Reviews Genetics*, **2018**, 19, 770-788	30.1	635
62	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	6.3	46
61	Improving cytidine and adenine base editors by expression optimization and ancestral reconstruction. *Nature Biotechnology*, **2018**, 36, 843-846	44.5	348
60	Ensemble cryoEM elucidates the mechanism of insulin capture and degradation by human insulin degrading enzyme. *ELife*, **2018**, 7,	8.9	27

59	Increasing the genome-targeting scope and precision of base editing with engineered Cas9-cytidine deaminase fusions. *Nature Biotechnology*, **2017**, 35, 371-376	44.5	437
58	Improving the DNA specificity and applicability of base editing through protein engineering and protein delivery. *Nature Communications*, **2017**, 8, 15790	17.4	240
57	Programmable base editing of A•T to G•C in genomic DNA without DNA cleavage. *Nature*, **2017**, 551, 464-471	50.4	1643
56	Crystal structures reveal an elusive functional domain of pyrrolysyl-tRNA synthetase. *Nature Chemical Biology*, **2017**, 13, 1261-1266	11.7	47
55	Phage-assisted continuous evolution of proteases with altered substrate specificity. *Nature Communications*, **2017**, 8, 956	17.4	49
54	Continuous directed evolution of aminoacyl-tRNA synthetases. *Nature Chemical Biology*, **2017**, 13, 1253-1260	11.7	124
53	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	14.3	380
52	Nucleic Acid-Templated Synthesis of Sequence-Defined Synthetic Polymers **2017**, 49-90		
51	Discovery of a Covalent Kinase Inhibitor from a DNA-Encoded Small-Molecule Library–Protein Library Selection. *Journal of the American Chemical Society*, **2017**, 139, 10192-10195	16.4	48
50	Aptazyme-embedded guide RNAs enable ligand-responsive genome editing and transcriptional activation. *Nature Communications*, **2017**, 8, 15939	17.4	127
49	CRISPR-Based Technologies for the Manipulation of Eukaryotic Genomes. *Cell*, **2017**, 168, 20-36	56.2	545
48	A programmable Cas9-serine recombinase fusion protein that operates on DNA sequences in mammalian cells. *Nucleic Acids Research*, **2016**, 44, 9758-9770	20.1	38
47	In situ regeneration of bioactive coatings enabled by an evolved Staphylococcus aureus sortase A. *Nature Communications*, **2016**, 7, 11140	17.4	28
46	Chemical Biology Approaches to Genome Editing: Understanding, Controlling, and Delivering Programmable Nucleases. *Cell Chemical Biology*, **2016**, 23, 57-73	8.2	35
45	Analytical Devices Based on Direct Synthesis of DNA on Paper. *Analytical Chemistry*, **2016**, 88, 725-31	7.8	34
44	Sequence Determinants of Intracellular Phase Separation by Complex Coacervation of a Disordered Protein. *Molecular Cell*, **2016**, 63, 72-85	17.6	395
43	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, 2868-73	11.5	367
42	Programmable editing of a target base in genomic DNA without double-stranded DNA cleavage. *Nature*, **2016**, 533, 420-4	50.4	2264

41	Continuous evolution of Bacillus thuringiensis toxins overcomes insect resistance. *Nature*, **2016**, 533, 58-63	50.4	125
40	Structural and Biochemical Basis for Intracellular Kinase Inhibition by Src-specific Peptidic Macrocycles. *Cell Chemical Biology*, **2016**, 23, 1103-1112	8.2	9
39	Novel selection methods for DNA-encoded chemical libraries. *Current Opinion in Chemical Biology*, **2015**, 26, 55-61	9.7	50
38	Small molecule-triggered Cas9 protein with improved genome-editing specificity. *Nature Chemical Biology*, **2015**, 11, 316-8	11.7	286
37	Continuous directed evolution of DNA-binding proteins to improve TALEN specificity. *Nature Methods*, **2015**, 12, 939-42	21.6	74
36	Development of potent in vivo mutagenesis plasmids with broad mutational spectra. *Nature Communications*, **2015**, 6, 8425	17.4	98
35	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, 14084-93	16.4	88
34	In vivo continuous directed evolution. *Current Opinion in Chemical Biology*, **2015**, 24, 1-10	9.7	45
33	Cationic lipid-mediated delivery of proteins enables efficient protein-based genome editing in vitro and in vivo. *Nature Biotechnology*, **2015**, 33, 73-80	44.5	904
32	Targeted Antithrombotic Protein Micelles. *Angewandte Chemie*, **2015**, 127, 1481-1485	3.6	5
31	Methods for the directed evolution of proteins. *Nature Reviews Genetics*, **2015**, 16, 379-94	30.1	487
30	Broad specificity profiling of TALENs results in engineered nucleases with improved DNA-cleavage specificity. *Nature Methods*, **2014**, 11, 429-35	21.6	157
29	Fusion of catalytically inactive Cas9 to FokI nuclease improves the specificity of genome modification. *Nature Biotechnology*, **2014**, 32, 577-582	44.5	624
28	Anti-diabetic activity of insulin-degrading enzyme inhibitors mediated by multiple hormones. *Nature*, **2014**, 511, 94-8	50.4	164
27	Using DNA to Program Chemical Synthesis, Discover New Reactions, and Detect Ligand Binding **2014**, 377-415		2
26	Negative selection and stringency modulation in phage-assisted continuous evolution. *Nature Chemical Biology*, **2014**, 10, 216-22	11.7	98
25	Electrophilic activity-based RNA probes reveal a self-alkylating RNA for RNA labeling. *Nature Chemical Biology*, **2014**, 10, 1049-54	11.7	25
24	A system for the continuous directed evolution of proteases rapidly reveals drug-resistance mutations. *Nature Communications*, **2014**, 5, 5352	17.4	64

23	A DNA-based molecular probe for optically reporting cellular traction forces. *Nature Methods*, **2014**, 11, 1229-32	21.6	133
22	Reprogramming the specificity of sortase enzymes. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 13343-8	11.5	104
21	Identification of ligand-target pairs from combined libraries of small molecules and unpurified protein targets in cell lysates. *Journal of the American Chemical Society*, **2014**, 136, 3264-70	16.4	55
20	A naturally occurring, noncanonical GTP aptamer made of simple tandem repeats. *RNA Biology*, **2014**, 11, 682-92	4.8	5
19	Immobilization of actively thromboresistant assemblies on sterile blood-contacting surfaces. *Advanced Healthcare Materials*, **2014**, 3, 30-5	10.1	27
18	Determining the specificities of TALENs, Cas9, and other genome-editing enzymes. *Methods in Enzymology*, **2014**, 546, 47-78	1.7	54
17	High-throughput profiling of off-target DNA cleavage reveals RNA-programmed Cas9 nuclease specificity. *Nature Biotechnology*, **2013**, 31, 839-43	44.5	1078
16	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, 9007-12	11.5	71
15	DNA ligase-mediated translation of DNA into densely functionalized nucleic acid polymers. *Journal of the American Chemical Society*, **2013**, 135, 98-101	16.4	48
14	A population-based experimental model for protein evolution: effects of mutation rate and selection stringency on evolutionary outcomes. *Biochemistry*, **2013**, 52, 1490-9	3.2	33
13	Cellular uptake mechanisms and endosomal trafficking of supercharged proteins. *Chemistry and Biology*, **2012**, 19, 831-43		66
12	Revealing off-target cleavage specificities of zinc-finger nucleases by in vitro selection. *Nature Methods*, **2011**, 8, 765-70	21.6	355
11	A system for the continuous directed evolution of biomolecules. *Nature*, **2011**, 472, 499-503	50.4	383
10	A class of human proteins that deliver functional proteins into mammalian cells in vitro and in vivo. *Chemistry and Biology*, **2011**, 18, 833-8		80
9	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, 11399-404	11.5	358
8	Enhanced functional potential of nucleic acid aptamer libraries patterned to increase secondary structure. *Journal of the American Chemical Society*, **2010**, 132, 9453-64	16.4	53
7	Potent delivery of functional proteins into Mammalian cells in vitro and in vivo using a supercharged protein. *ACS Chemical Biology*, **2010**, 5, 747-52	4.9	159
6	Supercharging proteins can impart unusual resilience. *Journal of the American Chemical Society*, **2007**, 129, 10110-2	16.4	357

5	Analysis of Active Site Residues in Escherichia coli Chorismate Mutase by Site-Directed Mutagenesis. *Journal of the American Chemical Society*, **1996**, 118, 1789-1790	16.4	58
4	Programmable large DNA deletion, replacement, integration, and inversion with twin prime editing and site-specific recombinases		1
3	PrimeDesign software for rapid and simplified design of prime editing guide RNAs		8
2	Massively parallel assessment of human variants with base editor screens		5
1	Prime Editing in Mice Reveals the Essentiality of a Single Base in Driving Tissue-Specific Gene Expression		1