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Repurposing CRISPR as an RNA-guided platform for sequence-specific control of gene expression

DOI: 10.1016/j.cell.2013.02.022
Cell, 2013, 152, 1173-83.

Source: <https://exaly.com/paper-pdf/55792740/citation-report.pdf>

Version: 2024-04-27

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2259	Programmed Self-Assembly of an Active P22-Cas9 Nanocarrier System.		
2258	.		
2257	CRISPR-Cas systems target a diverse collection of invasive mobile genetic elements in human microbiomes. 2013 , 14, R40		45
2256	High-throughput profiling of off-target DNA cleavage reveals RNA-programmed Cas9 nuclease specificity. 2013 , 31, 839-43		1078
2255	DNA targeting specificity of RNA-guided Cas9 nucleases. 2013 , 31, 827-32		3056
2254	Optical control of mammalian endogenous transcription and epigenetic states. 2013 , 500, 472-476		635
2253	CAS9 transcriptional activators for target specificity screening and paired nickases for cooperative genome engineering. 2013 , 31, 833-8		1341
2252	CRISPR-mediated modular RNA-guided regulation of transcription in eukaryotes. <i>Cell</i> , 2013 , 154, 442-51	56.2	2255
2251	Multiplex and homologous recombination-mediated genome editing in <i>Arabidopsis</i> and <i>Nicotiana benthamiana</i> using guide RNA and Cas9. 2013 , 31, 688-91		1001
2250	Targeted mutagenesis in the model plant <i>Nicotiana benthamiana</i> using Cas9 RNA-guided endonuclease. 2013 , 31, 691-3		742
2249	RNA-guided gene activation by CRISPR-Cas9-based transcription factors. 2013 , 10, 973-6		861
2248	CRISPR RNA-guided activation of endogenous human genes. 2013 , 10, 977-9		789
2247	One-step generation of mice carrying reporter and conditional alleles by CRISPR/Cas-mediated genome engineering. <i>Cell</i> , 2013 , 154, 1370-9	56.2	1194
2246	Efficient isolation of specific genomic regions and identification of associated proteins by engineered DNA-binding molecule-mediated chromatin immunoprecipitation (enChIP) using CRISPR. 2013 , 439, 132-6		145
2245	Multiplexed activation of endogenous genes by CRISPR-on, an RNA-guided transcriptional activator system. 2013 , 23, 1163-71		546
2244	Current approaches for efficient genetic editing in human pluripotent stem cells. 2013 , 8, 461-467		
2243	Exploiting CRISPR/Cas: interference mechanisms and applications. 2013 , 14, 14518-31		24

2242	Tunable and multifunctional eukaryotic transcription factors based on CRISPR/Cas. 2013 , 2, 604-13	259
2241	CRISPR interference (CRISPRi) for sequence-specific control of gene expression. 2013 , 8, 2180-96	677
2240	Genome engineering using the CRISPR-Cas9 system. 2013 , 8, 2281-2308	6243
2239	Exciting prospects for precise engineering of <i>Caenorhabditis elegans</i> genomes with CRISPR/Cas9. 2013 , 195, 635-42	52
2238	RNA-dependent DNA endonuclease Cas9 of the CRISPR system: Holy Grail of genome editing?. 2013 , 21, 562-7	53
2237	Repurposing CRISPR/Cas9 for in situ functional assays. 2013 , 27, 2602-14	102
2236	A ruler protein in a complex for antiviral defense determines the length of small interfering CRISPR RNAs. 2013 , 288, 27888-97	91
2235	Dynamic imaging of genomic loci in living human cells by an optimized CRISPR/Cas system. <i>Cell</i> , 2013 , 155, 1479-91	56.2 1306
2234	Advances in genetic circuit design: novel biochemistries, deep part mining, and precision gene expression. 2013 , 17, 878-92	103
2233	Demonstration of CRISPR/Cas9/sgRNA-mediated targeted gene modification in <i>Arabidopsis</i> , tobacco, sorghum and rice. 2013 , 41, e188	828
2232	Pseudo attP sites in favor of transgene integration and expression in cultured porcine cells identified by <i>Streptomyces</i> phage phiC31 integrase. 2013 , 14, 20	12
2231	C-terminal in Sp1-like artificial zinc-finger proteins plays crucial roles in determining their DNA binding affinity. 2013 , 13, 106	3
2230	Biology by the numbers on the Hawaiian Islands. 2013 , 1, 221-226	
2229	Orthogonal Cas9 proteins for RNA-guided gene regulation and editing. 2013 , 10, 1116-21	615
2228	Cas9 as a versatile tool for engineering biology. 2013 , 10, 957-63	897
2227	The centrality of RNA for engineering gene expression. 2013 , 8, 1379-95	62
2226	An artificial restriction DNA cutter for site-selective gene insertion in human cells. 2013 , 49, 6764-6	4
2225	Effects of genetic variation on the <i>E. coli</i> host-circuit interface. 2013 , 4, 231-7	56

2224	A wise consistency: engineering biology for conformity, reliability, predictability. 2013 , 17, 893-901	42
2223	Tuning the dials of Synthetic Biology. 2013 , 159, 1236-1253	78
2222	Modeling human disease with pluripotent stem cells: from genome association to function. 2013 , 12, 656-68	149
2221	Biotechnology: Rewriting a genome. 2013 , 495, 50-1	121
2220	CRISPR silencing. 2013 , 10, 380-1	1
2219	Endowing cells with logic and memory. 2013 , 31, 413-5	8
2218	Emerging tools for synthetic genome design. 2013 , 35, 359-70	15
2217	Processing-independent CRISPR RNAs limit natural transformation in <i>Neisseria meningitidis</i> . 2013 , 50, 488-503	206
2216	Integrated platform for genome-wide screening and construction of high-density genetic interaction maps in mammalian cells. 2013 , 110, E2317-26	90
2215	CRISPR-Cas and restriction-modification systems are compatible and increase phage resistance. 2013 , 4, 2087	137
2214	TALEN or Cas9 - rapid, efficient and specific choices for genome modifications. 2013 , 40, 281-9	120
2213	Newer gene editing technologies toward HIV gene therapy. 2013 , 5, 2748-66	63
2212	Alternative roles for CRISPR/Cas systems in bacterial pathogenesis. 2013 , 9, e1003621	26
2211	Identification of telomere-associated molecules by engineered DNA-binding molecule-mediated chromatin immunoprecipitation (enChIP). 2013 , 3, 3171	62
2210	A CRISPR CASE for high-throughput silencing. 2013 , 4, 193	31
2209	New Method of Genome Editing Derived From CRISPR/Cas9. 2013 , 40, 691	
2208	Programmable repression and activation of bacterial gene expression using an engineered CRISPR-Cas system. 2013 , 41, 7429-37	713
2207	Zinc fingers, TAL effectors, or Cas9-based DNA binding proteins: what's best for targeting desired genome loci?. 2013 , 6, 1384-7	34

2206	Biallelic genome modification in F(0) <i>Xenopus tropicalis</i> embryos using the CRISPR/Cas system. 2013 , 51, 827-34	146
2205	Chromosomal targeting by CRISPR-Cas systems can contribute to genome plasticity in bacteria. 2013 , 3, e26831	16
2204	Double-strand DNA end-binding and sliding of the toroidal CRISPR-associated protein Csn2. 2013 , 41, 6347-59	37
2203	Targeting autophagy for disease therapy. 2013 , 31, 322-3	7
2202	Body on a Chip: Re-Creation of a Living System In Vitro. 2013 , 7, 6-14	6
2201	Constraints in the Design of the Synthetic Bacterial Chassis. 2013 , 40, 39-67	3
2200	Research Highlights. 2013 , 31, 323-323	1
2199	Sculpting genomes with a hammer and chisel. 2013 , 10, 839-40	3
2198	Special focus CRISPR-Cas. 2013 , 10, 655-8	6
2197	Recent advances in developing nucleic acid-based HBV therapy. 2013 , 8, 1489-504	6
2196	Engineering of temperature- and light-switchable Cas9 variants. 2016 , 44, 10003-10014	70
2195	Strategies for the multiplex mapping of genes to traits. 2013 , 12, 99	4
2194	Cyanobacteria as a Platform for Biofuel Production. 2013 , 1, 7	143
2193	Genome engineering with TAL-effector nucleases and alternative modular nuclease technologies. 2013 , 13, 291-303	30
2192	Modeling High-Grade Serous Carcinoma: How Converging Insights into Pathogenesis and Genetics are Driving Better Experimental Platforms. 2013 , 3, 217	30
2191	sgRNAs9: a software package for designing CRISPR sgRNA and evaluating potential off-target cleavage sites. 2014 , 9, e100448	218
2190	Evaluation of sgRNA target sites for CRISPR-mediated repression of TP53. 2014 , 9, e113232	38
2189	Leveraging synthetic biology for tissue engineering applications. 2014 , 34, 015-022	5

2188	Engineered transcriptional systems for cyanobacterial biotechnology. 2014 , 2, 40	54
2187	Developments in the tools and methodologies of synthetic biology. 2014 , 2, 60	63
2186	. 2014 ,	4
2185	CasFinder: Flexible algorithm for identifying specific Cas9 targets in genomes. 2014 ,	41
2184	Visualization of specific DNA sequences in living mouse embryonic stem cells with a programmable fluorescent CRISPR/Cas system. 2014 , 5, 163-72	117
2183	Direct activation of human and mouse Oct4 genes using engineered TALE and Cas9 transcription factors. 2014 , 42, 4375-90	124
2182	Road rules for traffic on DNA-systematic analysis of transcriptional roadblocking in vivo. 2014 , 42, 8861-72	32
2181	Synthetic Gene Circuits. 2014 , 1-56	5
2180	Synthetic Biology and Therapies for Infectious Diseases. 2014 , 109-180	
2179	Precision Genetic Engineering. 2014 , 187-205	1
2178	Decoding the Epigenomes of Herbaceous Plants. 2014 , 69, 247-277	5
2177	SSFinder: high throughput CRISPR-Cas target sites prediction tool. 2014 , 2014, 742482	35
2176	High-efficiency targeted editing of large viral genomes by RNA-guided nucleases. 2014 , 10, e1004090	105
2175	Adaptor protein complexes and intracellular transport. 2014 , 34,	91
2174	Single-cell analyses of regulatory network perturbations using enhancer-targeting TALEs suggest novel roles for PU.1 during haematopoietic specification. 2014 , 141, 4018-30	20
2173	A distal locus element mediates IFN- γ priming of lipopolysaccharide-stimulated TNF gene expression. 2014 , 9, 1718-1728	17
2172	3' end formation of pre-mRNA and phosphorylation of Ser2 on the RNA polymerase II CTD are reciprocally coupled in human cells. 2014 , 28, 342-56	95
2171	Modularized CRISPR/dCas9 effector toolkit for target-specific gene regulation. 2014 , 3, 986-9	23

2170	Multistage regulator based on tandem promoters and CRISPR/Cas. 2014 , 3, 1007-10	1
2169	Quantitatively relating gene expression to light intensity via the serial connection of blue light sensor and CRISPRi. 2014 , 3, 979-82	5
2168	A CRISPR with roles in <i>Myxococcus xanthus</i> development and exopolysaccharide production. 2014 , 196, 4036-43	23
2167	Comparison of TALE designer transcription factors and the CRISPR/dCas9 in regulation of gene expression by targeting enhancers. 2014 , 42, e155	135
2166	Making designer mutants in model organisms. 2014 , 141, 4042-54	90
2165	RNA-guided genome editing of mammalian cells. 2014 , 1114, 269-77	35
2164	Enhancing stem cell survival in an ischemic heart by CRISPR-dCas9-based gene regulation. 2014 , 83, 702-5	7
2163	Genome editing. The new frontier of genome engineering with CRISPR-Cas9. 2014 , 346, 1258096	3479
2162	Imaging genomic elements in living cells using CRISPR/Cas9. 2014 , 546, 337-54	26
2161	Nuclease-mediated genome editing: At the front-line of functional genomics technology. 2014 , 56, 2-13	48
2160	In vitro enzymology of Cas9. 2014 , 546, 1-20	66
2159	Recent progress in genome engineering techniques in the silkworm, <i>Bombyx mori</i> . 2014 , 56, 14-25	77
2158	Efficient chromosomal gene modification with CRISPR/cas9 and PCR-based homologous recombination donors in cultured <i>Drosophila</i> cells. 2014 , 42, e89	88
2157	A co-CRISPR strategy for efficient genome editing in <i>Caenorhabditis elegans</i> . 2014 , 197, 1069-80	181
2156	CRISPR-mediated targeted mRNA degradation in the archaeon <i>Sulfolobus solfataricus</i> . 2014 , 42, 5280-8	81
2155	Multi-input CRISPR/Cas genetic circuits that interface host regulatory networks. 2014 , 10, 763	166
2154	A CRISPR/Cas9-based system for reprogramming cell lineage specification. 2014 , 3, 940-7	147
2153	Modes of TAL effector-mediated repression. 2014 , 42, 13061-73	9

2152	OP-Synthetic: identification of optimal genetic manipulations for the overproduction of native and non-native metabolites. 2014 , 2, 100-109		2
2151	A high-throughput screening strategy for detecting CRISPR-Cas9 induced mutations using next-generation sequencing. 2014 , 15, 1002		71
2150	Transcriptomic and proteomic dynamics in the metabolism of a diazotrophic cyanobacterium, <i>Cyanothece</i> sp. PCC 7822 during a diurnal light-dark cycle. 2014 , 15, 1185		15
2149	Functional genetics for all: engineered nucleases, CRISPR and the gene editing revolution. 2014 , 5, 43		69
2148	RNA interference screening to detect targetable molecules in hematopoietic stem cells. 2014 , 21, 283-8		3
2147	Horizontal gene transfer from <i>Agrobacterium</i> to plants. 2014 , 5, 326		41
2146	Genome engineering using the CRISPR/Cas system. 2014 , 4, 69		7
2145	Expanding the catalog of cas genes with metagenomes. 2014 , 42, 2448-59		17
2144	Novel fermentation processes for manufacturing plant natural products. 2014 , 25, 17-23		43
2143	Modular pathway engineering of <i>Bacillus subtilis</i> for improved N-acetylglucosamine production. 2014 , 23, 42-52		113
2142	Molecular mechanisms of CRISPR-mediated microbial immunity. 2014 , 71, 449-65		75
2141	Induced neural lineage cells as repair kits: so close, yet so far away. 2014 , 229, 728-42		13
2140	Crystal structure of Cas9 in complex with guide RNA and target DNA. <i>Cell</i> , 2014 , 156, 935-49	56.2	1131
2139	Dual sgRNAs facilitate CRISPR/Cas9-mediated mouse genome targeting. 2014 , 281, 1717-25		97
2138	Genome engineering with targetable nucleases. 2014 , 83, 409-39		392
2137	Engineering the <i>Caenorhabditis elegans</i> genome with CRISPR/Cas9. 2014 , 68, 381-8		38
2136	Application of TALEs, CRISPR/Cas and sRNAs as trans-acting regulators in prokaryotes. 2014 , 29, 46-54		29
2135	Gene regulation by engineered CRISPR-Cas systems. 2014 , 18, 83-9		29

2134	Precision genetic modifications: a new era in molecular biology and crop improvement. 2014 , 239, 921-39	41
2133	CRISPR-based technologies: prokaryotic defense weapons repurposed. 2014 , 30, 111-8	79
2132	Structures of Cas9 endonucleases reveal RNA-mediated conformational activation. 2014 , 343, 1247997	701
2131	CRISPR-Cas systems for editing, regulating and targeting genomes. 2014 , 32, 347-55	2182
2130	A brief history of synthetic biology. 2014 , 12, 381-90	460
2129	CRISPR/Cas9 for genome editing: progress, implications and challenges. 2014 , 23, R40-6	355
2128	CRISPR-Cas system: a powerful tool for genome engineering. 2014 , 85, 209-18	38
2127	From dead leaf, to new life: TAL effectors as tools for synthetic biology. 2014 , 78, 753-71	40
2126	Enhancer RNAs and regulated transcriptional programs. 2014 , 39, 170-82	361
2125	Efficient genome modification by CRISPR-Cas9 nickase with minimal off-target effects. 2014 , 11, 399-402	575
2124	Cut site selection by the two nuclease domains of the Cas9 RNA-guided endonuclease. 2014 , 289, 13284-94	64
2123	A versatile framework for microbial engineering using synthetic non-coding RNAs. 2014 , 12, 341-54	90
2122	Exploiting CRISPR/Cas systems for biotechnology. 2014 , 36, 34-8	48
2121	Genome-wide binding of the CRISPR endonuclease Cas9 in mammalian cells. 2014 , 32, 670-6	666
2120	Fusion of catalytically inactive Cas9 to FokI nuclease improves the specificity of genome modification. 2014 , 32, 577-582	624
2119	Quantifying absolute protein synthesis rates reveals principles underlying allocation of cellular resources. <i>Cell</i> , 2014 , 157, 624-35	56.2 802
2118	CRISPR-Cas systems: Prokaryotes upgrade to adaptive immunity. 2014 , 54, 234-44	470
2117	The rise of regulatory RNA. 2014 , 15, 423-37	897

2116	Principles of genetic circuit design. 2014 , 11, 508-20	551
2115	CRISPR transcriptional repression devices and layered circuits in mammalian cells. 2014 , 11, 723-6	200
2114	Pol III Promoters to Express Small RNAs: Delineation of Transcription Initiation. 2014 , 3, e161	66
2113	Diabetes. Solving human cell development--what does the mouse say?. 2014 , 10, 253-5	3
2112	Genome-wide analysis reveals characteristics of off-target sites bound by the Cas9 endonuclease. 2014 , 32, 677-83	553
2111	The three major types of CRISPR-Cas systems function independently in CRISPR RNA biogenesis in <i>Streptococcus thermophilus</i> . 2014 , 93, 98-112	60
2110	Programmable removal of bacterial strains by use of genome-targeting CRISPR-Cas systems. 2014 , 5, e00928-13	236
2109	Classification and evolution of type II CRISPR-Cas systems. 2014 , 42, 6091-105	288
2108	Specific reactivation of latent HIV-1 with designer zinc-finger transcription factors targeting the HIV-1 5'-LTR promoter. 2014 , 21, 490-5	18
2107	Cas9 effector-mediated regulation of transcription and differentiation in human pluripotent stem cells. 2014 , 141, 219-23	210
2106	CRISPRs: molecular signatures used for pathogen subtyping. 2014 , 80, 430-9	101
2105	High-yield, zero-leakage expression system with a translational switch using site-specific unnatural amino acid incorporation. 2014 , 80, 1718-25	17
2104	One-step generation of different immunodeficient mice with multiple gene modifications by CRISPR/Cas9 mediated genome engineering. 2014 , 46, 49-55	98
2103	Improving CRISPR-Cas nuclease specificity using truncated guide RNAs. 2014 , 32, 279-284	1371
2102	Single-step generation of gene knockout-rescue system in pluripotent stem cells by promoter insertion with CRISPR/Cas9. 2014 , 444, 158-63	11
2101	DNA interrogation by the CRISPR RNA-guided endonuclease Cas9. 2014 , 507, 62-7	1171
2100	Epigenetics and the regulation of stress vulnerability and resilience. 2014 , 264, 157-70	129
2099	Cas9-based tools for targeted genome editing and transcriptional control. 2014 , 80, 1544-52	50

2098	Designable DNA-binding domains enable construction of logic circuits in mammalian cells. 2014 , 10, 203-8	75
2097	Synthetic biology in mammalian cells: next generation research tools and therapeutics. 2014 , 15, 95-107	206
2096	Systematic transfer of prokaryotic sensors and circuits to mammalian cells. 2014 , 3, 880-91	54
2095	Specific gene repression by CRISPRi system transferred through bacterial conjugation. 2014 , 3, 929-31	36
2094	Huntingtin-lowering strategies in Huntington's disease: antisense oligonucleotides, small RNAs, and gene editing. 2014 , 29, 1455-61	61
2093	Guide RNA functional modules direct Cas9 activity and orthogonality. 2014 , 56, 333-339	174
2092	Implementation of the CRISPR-Cas9 system in fission yeast. 2014 , 5, 5344	125
2091	Phylogeny of Cas9 determines functional exchangeability of dual-RNA and Cas9 among orthologous type II CRISPR-Cas systems. 2014 , 42, 2577-90	251
2090	Multiplex CRISPR/Cas9-based genome engineering from a single lentiviral vector. 2014 , 42, e147	232
2089	Target specificity of the CRISPR-Cas9 system. 2014 , 2, 59-70	184
2088	Mutagenesis and homologous recombination in Drosophila cell lines using CRISPR/Cas9. 2014 , 3, 42-9	83
2087	The iCRISPR platform for rapid genome editing in human pluripotent stem cells. 2014 , 546, 215-50	52
2086	Protein engineering of Cas9 for enhanced function. 2014 , 546, 491-511	17
2085	CRISPR/Cas9-based genome editing in mice by single plasmid injection. 2014 , 546, 319-36	45
2084	Tissue-specific genome editing in Ciona embryos by CRISPR/Cas9. 2014 , 141, 4115-20	90
2083	Non-coding RNA: a new frontier in regulatory biology. 2014 , 1, 190-204	114
2082	RNA-guided endonuclease provides a therapeutic strategy to cure latent herpesviridae infection. 2014 , 111, 13157-62	156
2081	Cellular reprogramming by transcription factor engineering. 2014 , 28, 1-9	6

2080	Exploiting CRISPR-Cas nucleases to produce sequence-specific antimicrobials. 2014 , 32, 1146-50	514
2079	Genome-Scale CRISPR-Mediated Control of Gene Repression and Activation. <i>Cell</i> , 2014 , 159, 647-61	56.2 1556
2078	Biopharmaceutical protein production by <i>Saccharomyces cerevisiae</i> : current state and future prospects. 2014 , 2, 167-182	27
2077	Rule-based design of synthetic transcription factors in eukaryotes. 2014 , 3, 737-44	23
2076	Tools for developing tolerance to toxic chemicals in microbial systems and perspectives on moving the field forward and into the industrial setting. 2014 , 6, 9-17	18
2075	The genome editing toolbox: a spectrum of approaches for targeted modification. 2014 , 30, 87-94	28
2074	Structural basis of PAM-dependent target DNA recognition by the Cas9 endonuclease. 2014 , 513, 569-73	783
2073	From transplantation to transgenics: mouse models of developmental hematopoiesis. 2014 , 42, 707-16	9
2072	Controlling gene networks and cell fate with precision-targeted DNA-binding proteins and small-molecule-based genome readers. 2014 , 462, 397-413	16
2071	Efficient, complete deletion of synaptic proteins using CRISPR. 2014 , 83, 1051-7	87
2070	Harnessing CRISPR-Cas9 immunity for genetic engineering. 2014 , 19, 114-119	52
2069	Multivariate modular metabolic engineering for pathway and strain optimization. 2014 , 29, 156-62	107
2068	Expansion of the CRISPR-Cas9 genome targeting space through the use of H1 promoter-expressed guide RNAs. 2014 , 5, 4516	52
2067	A bistable genetic switch based on designable DNA-binding domains. 2014 , 5, 5007	53
2066	Modular, multi-input transcriptional logic gating with orthogonal LacI/GalR family chimeras. 2014 , 3, 645-51	59
2065	Advances in fluorescence labeling strategies for dynamic cellular imaging. 2014 , 10, 512-23	336
2064	Genomic mining of prokaryotic repressors for orthogonal logic gates. 2014 , 10, 99-105	249
2063	Functional genomics platform for pooled screening and generation of mammalian genetic interaction maps. 2014 , 9, 1825-47	58

2062	Engineering synthetic TALE and CRISPR/Cas9 transcription factors for regulating gene expression. 2014 , 69, 188-97	27
2061	Regulation of endogenous human gene expression by ligand-inducible TALE transcription factors. 2014 , 3, 723-30	43
2060	Using RNAi screening technologies to interrogate the extrinsic apoptosis pathway. 2014 , 544, 129-60	2
2059	A CRISPR view of development. 2014 , 28, 1859-72	174
2058	Refactoring and optimization of light-switchable Escherichia coli two-component systems. 2014 , 3, 820-31	93
2057	CRISPR/Cas9-mediated genome engineering: an adeno-associated viral (AAV) vector toolbox. 2014 , 9, 1402-12	186
2056	Synthesis and accumulation of aromatic aldehydes in an engineered strain of Escherichia coli. 2014 , 136, 11644-54	169
2055	Synthetic zinc finger proteins: the advent of targeted gene regulation and genome modification technologies. 2014 , 47, 2309-18	85
2054	Applications of TALENs and CRISPR/Cas9 in human cells and their potentials for gene therapy. 2014 , 56, 681-8	33
2053	Disrupting the male germ line to find infertility and contraception targets. 2014 , 75, 101-8	11
2052	CRISPR/Cas9 mediated genome engineering in Drosophila. 2014 , 69, 128-36	88
2051	CRISPR/Cas9 and genome editing in Drosophila. 2014 , 41, 7-19	144
2050	Optogenetic characterization methods overcome key challenges in synthetic and systems biology. 2014 , 10, 502-11	52
2049	An iCRISPR platform for rapid, multiplexable, and inducible genome editing in human pluripotent stem cells. 2014 , 15, 215-226	331
2048	Artificial transcription factor-mediated regulation of gene expression. 2014 , 225, 58-67	16
2047	Development and applications of CRISPR-Cas9 for genome engineering. <i>Cell</i> , 2014 , 157, 1262-1278	56.2 3595
2046	Framework for engineering finite state machines in gene regulatory networks. 2014 , 3, 652-65	21
2045	Unravelling the structural and mechanistic basis of CRISPR-Cas systems. 2014 , 12, 479-92	476

2044	Synthetic analog and digital circuits for cellular computation and memory. 2014 , 29, 146-55	69
2043	Synthetic RNAs for Gene Regulation: Design Principles and Computational Tools. 2014 , 2, 65	23
2042	CRISPR-Cas systems: new players in gene regulation and bacterial physiology. 2014 , 4, 37	52
2041	Genome Editing with ZFN, TALEN and CRISPR/Cas Systems: The Applications and Future Prospects. 2014 , 03,	4
2040	Efficient CRISPR/Cas9-mediated gene editing in Arabidopsis thaliana and inheritance of modified genes in the T2 and T3 generations. 2014 , 9, e99225	122
2039	Tailor-made CRISPR/Cas system for highly efficient targeted gene replacement in the rice blast fungus. 2015 , 112, 2543-9	120
2038	Connecting genotypes, phenotypes and fitness: harnessing the power of CRISPR/Cas9 genome editing. 2015 , 24, 3810-22	38
2037	CRISPR/Cas9-mediated genome engineering of CHO cell factories: Application and perspectives. 2015 , 10, 979-94	82
2036	The no-SCAR (Scarless Cas9 Assisted Recombineering) system for genome editing in Escherichia coli. 2015 , 5, 15096	130
2035	Genome editing: New antiviral weapon for plants. 2015 , 1,	12
2034	Enhancing flavonoid production by systematically tuning the central metabolic pathways based on a CRISPR interference system in Escherichia coli. 2015 , 5, 13477	118
2033	Conferring resistance to geminiviruses with the CRISPR-Cas prokaryotic immune system. 2015 , 1,	247
2032	Designing overall stoichiometric conversions and intervening metabolic reactions. 2015 , 5, 16009	36
2031	Chromatin remodeling and bivalent histone modifications in embryonic stem cells. 2015 , 16, 1609-19	135
2030	Transient Low-Temperature Effects on Propidium Iodide Uptake in Lance Array Nanoinjected HeLa Cells. 2015 , 6,	
2029	CRISPR-Cas9 Genome Editing in Drosophila. 2015 , 111, 31.2.1-31.2.20	86
2028	The state of autotrophic ethanol production in Cyanobacteria. 2015 , 119, 11-24	65
2027	The utility of transposon mutagenesis for cancer studies in the era of genome editing. 2015 , 16, 229	20

2026	CRISPR-Cas: From the Bacterial Adaptive Immune System to a Versatile Tool for Genome Engineering. 2015 , 54, 13508-14	17
2025	Crystal Structure of Cas9. 2015 , 57, 96-103	
2024	CRISPR-Cas: von einem bakteriellen adaptiven Immunsystem zu einem vielseitigen Werkzeug für die Gentechnik. 2015 , 127, 13710-13716	4
2023	The Future of Therapeutics: Stem Cells, Tissue Plasticity, and Tissue Engineering. 306-316	
2022	The Use of Innovative Tools to Reproduce Human Cancer Translocations: Lessons from the CRISPR/Cas System. 2015 , 3, 273-278	
2021	CRISPR-Cas9 Human Genome Editing: Challenges, Ethical Concerns and Implications. 2015 , 06,	3
2020	Applications of Engineered DNA-Binding Molecules Such as TAL Proteins and the CRISPR/Cas System in Biology Research. 2015 , 16, 23143-64	10
2019	Isolation of Specific Genomic Regions and Identification of Their Associated Molecules by Engineered DNA-Binding Molecule-Mediated Chromatin Immunoprecipitation (enChIP) Using the CRISPR System and TAL Proteins. 2015 , 16, 21802-12	12
2018	[Application of Cas9/CRISPR to the study of synaptic function]. 2015 , 31, 137-8	0
2017	A new measurement matrix optimal algorithm based on SVD. 2015 ,	
2016	Chromatin Dynamics in Lineage Commitment and Cellular Reprogramming. 2015 , 6, 641-61	11
2015	A new age in functional genomics using CRISPR/Cas9 in arrayed library screening. 2015 , 6, 300	69
2014	Human microbiomes and their roles in dysbiosis, common diseases, and novel therapeutic approaches. 2015 , 6, 1050	178
2013	[The CRISPR system can correct or modify the expression of genes responsible for hereditary diseases]. 2015 , 31, 1014-22	3
2012	Combinatorial Effects of Fatty Acid Elongase Enzymes on Nervonic Acid Production in <i>Camelina sativa</i> . 2015 , 10, e0131755	29
2011	CRISPR/Cas system: Novel roles for Evolution and Survival of Bacterial Pathogens and Application for Genome Editing. 2015 , 26, 14-21	
2010	Function genomics of abiotic stress tolerance in plants: a CRISPR approach. 2015 , 6, 375	66
2009	Targeting Non-Coding RNAs in Plants with the CRISPR-Cas Technology is a Challenge yet Worth Accepting. 2015 , 6, 1001	31

2008	A molecular toolbox for genetic manipulation of zebrafish. 2015 , 151	22
2007	Genome-wide specificity of DNA binding, gene regulation, and chromatin remodeling by TALE- and CRISPR/Cas9-based transcriptional activators. 2015 , 25, 1158-69	99
2006	New insights into the QuikChange process guide the use of Phusion DNA polymerase for site-directed mutagenesis. 2015 , 43, e12	74
2005	Dynamic signal processing by ribozyme-mediated RNA circuits to control gene expression. 2015 , 43, 5158-70	24
2004	TALENs-Assisted Multiplex Editing for Accelerated Genome Evolution To Improve Yeast Phenotypes. 2015 , 4, 1101-11	17
2003	Expanding the Biologist's Toolkit with CRISPR-Cas9. 2015 , 58, 568-74	311
2002	Genome Editing in Ascidians. 2015 , 107-117	
2001	Targeted DNA degradation using a CRISPR device stably carried in the host genome. 2015 , 6, 6989	83
2000	Choosing the Right Tool for the Job: RNAi, TALEN, or CRISPR. 2015 , 58, 575-85	269
1999	Regulation of transcriptionally active genes via the catalytically inactive Cas9 in <i>C. elegans</i> and <i>D. rerio</i> . 2015 , 25, 638-41	47
1998	CRISPR/Cas9 cleavage of viral DNA efficiently suppresses hepatitis B virus. 2015 , 5, 10833	205
1997	Advances in New Technology for Targeted Modification of Plant Genomes. 2015 ,	5
1996	Techniques Analyzing Chromatin Modifications at Specific Single Loci. 2015 , 79-100	
1995	Identification of miR-2400 gene as a novel regulator in skeletal muscle satellite cells proliferation by targeting MYOG gene. 2015 , 463, 624-31	15
1994	Developing CRISPR Technology in Major Crop Plants. 2015 , 145-159	2
1993	Lung Stem Cells in the Epithelium and Vasculature. 2015 ,	
1992	A Toolkit of CRISPR-Based Genome Editing Systems in <i>Drosophila</i> . 2015 , 42, 141-9	32
1991	Functional annotation of cis-regulatory elements in human cells by dCas9/sgRNA. 2015 , 25, 877-80	4

1990	High-Throughput Silencing Using the CRISPR-Cas9 System: A Review of the Benefits and Challenges. 2015 , 20, 1027-39	26
1989	PIK3R1 negatively regulates the epithelial-mesenchymal transition and stem-like phenotype of renal cancer cells through the AKT/GSK3 β /CTNNB1 signaling pathway. 2015 , 5, 8997	46
1988	Sequence determinants of improved CRISPR sgRNA design. 2015 , 25, 1147-57	335
1987	Engineering Sequence-Specific DNA Binding Proteins for Antiviral Gene Editing. 2015 , 63-94	4
1986	A Perspective on the Future of High-Throughput RNAi Screening: Will CRISPR Cut Out the Competition or Can RNAi Help Guide the Way?. 2015 , 20, 1040-51	27
1985	Rendering the Intractable More Tractable: Tools from <i>Caenorhabditis elegans</i> Ripe for Import into Parasitic Nematodes. 2015 , 201, 1279-94	39
1984	Mapping Transcription Regulatory Networks with CHIP-seq and RNA-seq. 2015 , 883, 119-34	15
1983	CRISPR/Cas9 system as an innovative genetic engineering tool: Enhancements in sequence specificity and delivery methods. 2015 , 1856, 234-43	15
1982	Memory and Combinatorial Logic Based on DNA Inversions: Dynamics and Evolutionary Stability. 2015 , 4, 1361-72	32
1981	Future of breeding by genome editing is in the hands of regulators. 2015 , 6, 223-32	32
1980	Resources for the design of CRISPR gene editing experiments. 2015 , 16, 260	78
1979	Bioanalysis within Microfluidics: A Review. 2015 , 245-268	2
1978	Microbial CRISPR-Cas System: From Bacterial Immunity to Next-Generation Antimicrobials. 2015 , 217-234	
1977	Meeting report on Synthetic Biology Young Scholar Forum. 2015 , 3, 206-211	
1976	Genome Editing and Its Applications in Model Organisms. 2015 , 13, 336-44	38
1975	Current and future delivery systems for engineered nucleases: ZFN, TALEN and RGEN. 2015 , 205, 120-7	76
1974	A light-inducible CRISPR-Cas9 system for control of endogenous gene activation. 2015 , 11, 198-200	437
1973	Calcium signaling in neocortical development. 2015 , 75, 360-8	40

1972	Functional genomic screening approaches in mechanistic toxicology and potential future applications of CRISPR-Cas9. 2015 , 764, 31-42	14
1971	Markerless chromosomal gene deletion in <i>Clostridium beijerinckii</i> using CRISPR/Cas9 system. 2015 , 200, 1-5	131
1970	How to train your microbe: methods for dynamically characterizing gene networks. 2015 , 24, 113-23	24
1969	Rapidly characterizing the fast dynamics of RNA genetic circuitry with cell-free transcription-translation (TX-TL) systems. 2015 , 4, 503-15	121
1968	Inducible in vivo genome editing with CRISPR-Cas9. 2015 , 33, 390-394	355
1967	Multigene editing in the <i>Escherichia coli</i> genome via the CRISPR-Cas9 system. 2015 , 81, 2506-14	560
1966	Gene targeting and editing in crop plants: a new era of precision opportunities. 2015 , 35, 1	47
1965	A practical guide to induced pluripotent stem cell research using patient samples. 2015 , 95, 4-13	45
1964	CRISPR-Cas9-based photoactivatable transcription system. 2015 , 22, 169-74	242
1963	Creating small transcription activating RNAs. 2015 , 11, 214-20	169
1962	A split-Cas9 architecture for inducible genome editing and transcription modulation. 2015 , 33, 139-42	467
1961	Beyond traditional pharmacology: new tools and approaches. 2015 , 172, 3229-41	13
1960	CRISPR/Cas9: The Leading Edge of Genome Editing Technology. 2015 , 25-41	6
1959	Modular construction of mammalian gene circuits using TALE transcriptional repressors. 2015 , 11, 207-213	68
1958	Designer cell signal processing circuits for biotechnology. 2015 , 32, 635-43	32
1957	The roles of CRISPR-Cas systems in adaptive immunity and beyond. 2015 , 32, 36-41	132
1956	CRISPR: a new method for genetic engineering - a prokaryotic immune component may potentially open a new era of gene silencing. 2015 , 22, 3-5	4
1955	Targeted Genome Editing Using Site-Specific Nucleases. 2015 ,	6

1954	Gene silencing by CRISPR interference in mycobacteria. 2015 , 6, 6267	146
1953	CRISPR-Cas9: a new and promising player in gene therapy. 2015 , 52, 289-96	115
1952	Multicolor CRISPR labeling of chromosomal loci in human cells. 2015 , 112, 3002-7	276
1951	Spinal cord injury induced neuropathic pain: Molecular targets and therapeutic approaches. 2015 , 30, 645-58	11
1950	Bacterial CRISPR/Cas DNA endonucleases: A revolutionary technology that could dramatically impact viral research and treatment. 2015 , 479-480, 213-20	44
1949	How genetic errors in GPCRs affect their function: Possible therapeutic strategies. 2015 , 2, 108-132	45
1948	Genome Engineering for Therapeutic Applications. 2015 , 27-43	2
1947	A renaissance in RNA synthetic biology: new mechanisms, applications and tools for the future. 2015 , 28, 47-56	104
1946	Photoactivatable CRISPR-Cas9 for optogenetic genome editing. 2015 , 33, 755-60	397
1945	CRISPR-based screening of genomic island excision events in bacteria. 2015 , 112, 8076-81	84
1944	Creating reference gene annotation for the mouse C57BL6/J genome assembly. 2015 , 26, 366-78	144
1943	Direct observation of TALE protein dynamics reveals a two-state search mechanism. 2015 , 6, 7277	56
1942	CRISPR-ERA: a comprehensive design tool for CRISPR-mediated gene editing, repression and activation. 2015 , 31, 3676-8	124
1941	A Call for Systematic Research on Solute Carriers. <i>Cell</i> , 2015 , 162, 478-87	56.2 312
1940	Simultaneous live imaging of the transcription and nuclear position of specific genes. 2015 , 43, e127	68
1939	The application of CRISPR-Cas9 genome editing in <i>Caenorhabditis elegans</i> . 2015 , 42, 413-21	10
1938	SOD2 targeted gene editing by CRISPR/Cas9 yields Human cells devoid of MnSOD. 2015 , 89, 379-86	22
1937	Programming a Human Commensal Bacterium, , to Sense and Respond to Stimuli in the Murine Gut Microbiota. 2015 , 1, 62-71	192

1936	Application of CRISPR/Cas9 for biomedical discoveries. 2015 , 5, 33	41
1935	Considerations for the use of transcriptomics in identifying the 'genes that matter' for environmental adaptation. 2015 , 218, 1925-35	76
1934	Precision cancer mouse models through genome editing with CRISPR-Cas9. 2015 , 7, 53	61
1933	The Hope for iPSC in Lung Stem Cell Therapy and Disease Modeling. 2015 , 113-143	0
1932	A CRISPR-Based Screen Identifies Genes Essential for West-Nile-Virus-Induced Cell Death. 2015 , 12, 673-83	150
1931	JMJD3 as an epigenetic regulator in development and disease. 2015 , 67, 148-57	90
1930	Precision metabolic engineering: The design of responsive, selective, and controllable metabolic systems. 2015 , 31, 123-31	44
1929	Enzymatically Generated CRISPR Libraries for Genome Labeling and Screening. 2015 , 34, 373-8	24
1928	CRISPR-Cas: New Tools for Genetic Manipulations from Bacterial Immunity Systems. 2015 , 69, 209-28	125
1927	Putting Non-coding RNA on Display with CRISPR. 2015 , 59, 146-8	8
1926	Mature T cell responses are controlled by microRNA-142. 2015 , 125, 2825-40	58
1925	CRISPR/Cas9-Mediated Genome Editing of Epigenetic Factors for Cancer Therapy. 2015 , 26, 463-71	44
1924	Metabolic engineering of Escherichia coli using CRISPR-Cas9 mediated genome editing. 2015 , 31, 13-21	237
1923	Cas9-chromatin binding information enables more accurate CRISPR off-target prediction. 2015 , 43, e118	141
1922	LRP8-Reelin-Regulated Neuronal Enhancer Signature Underlying Learning and Memory Formation. 2015 , 86, 696-710	87
1921	Cas9-mediated targeting of viral RNA in eukaryotic cells. 2015 , 112, 6164-9	182
1920	Influence of Agrobacterium oncogenes on secondary metabolism of plants. 2015 , 14, 541-554	23
1919	Disruption of amylase genes by RNA interference affects reproduction in the Pacific oyster Crassostrea gigas. 2015 , 218, 1740-7	27

1918	An ancient Chinese wisdom for metabolic engineering: Yin-Yang. 2015 , 14, 39	35
1917	RNA-guided CRISPR-Cas technologies for genome-scale investigation of disease processes. 2015 , 8, 31	7
1916	Synthetic epigenetics-towards intelligent control of epigenetic states and cell identity. 2015 , 7, 18	47
1915	CRISPathBrick: Modular Combinatorial Assembly of Type II-A CRISPR Arrays for dCas9-Mediated Multiplex Transcriptional Repression in E. coli. 2015 , 4, 987-1000	117
1914	Applications of Cas9 as an RNA-programmed RNA-binding protein. 2015 , 37, 732-9	27
1913	CRISPR. 2015 ,	9
1912	Applications of CRISPR-Cas9 mediated genome engineering. 2015 , 2, 11	24
1911	Genome Editing in Mice Using CRISPR/Cas. 2015 , 151-166	1
1910	Temperate and lytic bacteriophages programmed to sensitize and kill antibiotic-resistant bacteria. 2015 , 112, 7267-72	267
1909	Isolation of specific genomic regions and identification of associated molecules by engineered DNA-binding molecule-mediated chromatin immunoprecipitation (enChIP) using CRISPR. 2015 , 1288, 43-52	14
1908	Dramatic enhancement of genome editing by CRISPR/Cas9 through improved guide RNA design. 2015 , 199, 959-71	146
1907	Engineered biosynthesis of natural products in heterologous hosts. 2015 , 44, 5265-90	119
1906	Application of CRISPRi for prokaryotic metabolic engineering involving multiple genes, a case study: Controllable P(3HB-co-4HB) biosynthesis. 2015 , 29, 160-168	178
1905	Application of gene-editing technologies to HIV-1. 2015 , 10, 123-7	14
1904	Advances in CRISPR-Cas9 genome engineering: lessons learned from RNA interference. 2015 , 43, 3407-19	104
1903	Mammalian synthetic biology: emerging medical applications. 2015 , 12,	38
1902	CRISPR-Cas9 Based Engineering of Actinomycetal Genomes. 2015 , 4, 1020-9	279
1901	Chromatin Protocols. 2015 ,	

1900	Inhibition of HIV-1 infection of primary CD4+ T-cells by gene editing of CCR5 using adenovirus-delivered CRISPR/Cas9. 2015 , 96, 2381-2393	133
1899	Efficient inversions and duplications of mammalian regulatory DNA elements and gene clusters by CRISPR/Cas9. 2015 , 7, 284-98	89
1898	High-throughput functional genomics using CRISPR-Cas9. 2015 , 16, 299-311	748
1897	Epigenome editing by a CRISPR-Cas9-based acetyltransferase activates genes from promoters and enhancers. 2015 , 33, 510-7	1141
1896	The CRISPR-Cas immune system: biology, mechanisms and applications. 2015 , 117, 119-28	253
1895	The therapeutic application of CRISPR/Cas9 technologies for HIV. 2015 , 15, 819-30	49
1894	Enabling functional genomics with genome engineering. 2015 , 25, 1442-55	67
1893	Linking RNA biology to lncRNAs. 2015 , 25, 1456-65	133
1892	Selection and Validation of Spacer Sequences for CRISPR-Cas9 Genome Editing and Transcription Regulation in Bacteria. 2015 , 1334, 233-44	
1891	From Genomics to Gene Therapy: Induced Pluripotent Stem Cells Meet Genome Editing. 2015 , 49, 47-70	89
1890	Complex Biological Systems. 2015 , 1-11	
1889	Multilevel Regulation and Translational Switches in Synthetic Biology. 2015 , 9, 485-96	7
1888	Synthetic Biology: A Unifying View and Review Using Analog Circuits. 2015 , 9, 453-74	44
1887	Structure and specificity of the RNA-guided endonuclease Cas9 during DNA interrogation, target binding and cleavage. 2015 , 43, 8924-41	72
1886	DNA-Protein Interactions. 2015 ,	
1885	Gene Expression Variability Underlies Adaptive Resistance in Phenotypically Heterogeneous Bacterial Populations. 2015 , 1, 555-67	14
1884	Tracking and transforming neocortical progenitors by CRISPR/Cas9 gene targeting and piggyBac transposase lineage labeling. 2015 , 142, 3601-11	40
1883	Sensitive cells: enabling tools for static and dynamic control of microbial metabolic pathways. 2015 , 36, 205-14	63

1882	Strategies for precision modulation of gene expression by epigenome editing: an overview. 2015 , 8, 34	40
1881	Putting RNA to work: Translating RNA fundamentals into biotechnological engineering practice. 2015 , 33, 1829-44	16
1880	CRISPR/Cas9: molecular tool for gene therapy to target genome and epigenome in the treatment of lung cancer. 2015 , 22, 509-17	33
1879	Single-Molecule Imaging Reveals a Switch between Spurious and Functional ncRNA Transcription. 2015 , 60, 597-610	79
1878	Network analysis of gene essentiality in functional genomics experiments. 2015 , 16, 239	41
1877	A Framework for Genetic Logic Synthesis. 2015 , 103, 2196-2207	16
1876	How specific is CRISPR/Cas9 really?. 2015 , 29, 72-8	83
1875	In Vivo Transcriptional Activation Using CRISPR/Cas9 in Drosophila. 2015 , 201, 433-42	83
1874	Engineering Biosynthesis Mechanisms for Diversifying Polyhydroxyalkanoates. 2015 , 33, 565-574	90
1873	Targeted Large-Scale Deletion of Bacterial Genomes Using CRISPR-Nickases. 2015 , 4, 1217-25	66
1872	Genome scale engineering techniques for metabolic engineering. 2015 , 32, 143-154	38
1871	Ribosome profiling reveals the what, when, where and how of protein synthesis. 2015 , 16, 651-64	244
1870	The emergence of commodity-scale genetic manipulation. 2015 , 28, 150-5	3
1869	Quantification of the gene silencing performances of rationally-designed synthetic small RNAs. 2015 , 9, 107-23	6
1868	Highly efficient editing of the actinorhodin polyketide chain length factor gene in Streptomyces coelicolor M145 using CRISPR/Cas9-CodA(sm) combined system. 2015 , 99, 10575-85	92
1867	A CRISPR/Cas9 Toolbox for Multiplexed Plant Genome Editing and Transcriptional Regulation. 2015 , 169, 971-85	408
1866	Genome-editing tools for stem cell biology. 2015 , 6, e1831	14
1865	CRISPR/Cas9 Genome Editing in Caenorhabditis elegans: Evaluation of Templates for Homology-Mediated Repair and Knock-Ins by Homology-Independent DNA Repair. 2015 , 5, 1649-56	39

1864	Conditionally Stabilized dCas9 Activator for Controlling Gene Expression in Human Cell Reprogramming and Differentiation. 2015 , 5, 448-59	119
1863	Differential Distribution of Type II CRISPR-Cas Systems in Agricultural and Nonagricultural <i>Campylobacter coli</i> and <i>Campylobacter jejuni</i> Isolates Correlates with Lack of Shared Environments. 2015 , 7, 2663-79	26
1862	The New State of the Art: Cas9 for Gene Activation and Repression. 2015 , 35, 3800-9	150
1861	Cas9 gRNA engineering for genome editing, activation and repression. 2015 , 12, 1051-4	210
1860	Applications of imaging for bacterial systems biology. 2015 , 27, 114-20	12
1859	Regulatory RNA-assisted genome engineering in microorganisms. 2015 , 36, 85-90	16
1858	Advancing metabolic engineering through systems biology of industrial microorganisms. 2015 , 36, 8-15	77
1857	Improving prediction fidelity of cellular metabolism with kinetic descriptions. 2015 , 36, 57-64	27
1856	High-throughput bacterial functional genomics in the sequencing era. 2015 , 27, 86-95	24
1855	Cas9-Assisted Targeting of CHromosome segments CATCH enables one-step targeted cloning of large gene clusters. 2015 , 6, 8101	145
1854	Bacterial CRISPR: accomplishments and prospects. 2015 , 27, 121-6	57
1853	CRISPR/Cas9-mediated genome editing and gene replacement in plants: Transitioning from lab to field. 2015 , 240, 130-42	106
1852	Targeted Transcriptional Repression in Bacteria Using CRISPR Interference (CRISPRi). 2015 , 1311, 349-62	37
1851	Off-target Effects in CRISPR/Cas9-mediated Genome Engineering. 2015 , 4, e264	549
1850	Functional genomics to uncover drug mechanism of action. 2015 , 11, 942-8	58
1849	Editing plant genomes with CRISPR/Cas9. 2015 , 32, 76-84	364
1848	The CRISPR/Cas9 system for plant genome editing and beyond. 2015 , 33, 41-52	772
1847	A mouse geneticist's practical guide to CRISPR applications. 2015 , 199, 1-15	248

1846	Single-cell and multivariate approaches in genetic perturbation screens. 2015 , 16, 18-32		65
1845	Engineering complex synthetic transcriptional programs with CRISPR RNA scaffolds. <i>Cell</i> , 2015 , 160, 339-50	56.2	648
1844	Enabling plant synthetic biology through genome engineering. 2015 , 33, 120-31		161
1843	CRISPR-based self-cleaving mechanism for controllable gene delivery in human cells. 2015 , 43, 1297-303		36
1842	A multicolor panel of TALE-KRAB based transcriptional repressor vectors enabling knockdown of multiple gene targets. 2014 , 4, 7338		14
1841	Efficient programmable gene silencing by Cascade. 2015 , 43, 237-46		120
1840	Targeting CDK11 in osteosarcoma cells using the CRISPR-Cas9 system. 2015 , 33, 199-207		50
1839	Metabolic engineering to enhance the value of plants as green factories. 2015 , 27, 83-91		56
1838	Rapid prototyping of microbial cell factories via genome-scale engineering. 2015 , 33, 1420-32		30
1837	Chromosomal Mutagenesis. 2015 ,		2
1836	Sequence-specific inhibition of microRNA via CRISPR/CRISPRi system. 2014 , 4, 3943		71
1835	Multiplex genome engineering in human cells using all-in-one CRISPR/Cas9 vector system. 2014 , 4, 5400		253
1834	Comparison of non-canonical PAMs for CRISPR/Cas9-mediated DNA cleavage in human cells. 2014 , 4, 5405		143
1833	The CRISPR-Cas system for plant genome editing: advances and opportunities. 2015 , 66, 47-57		130
1832	Off-target assessment of CRISPR-Cas9 guiding RNAs in human iPS and mouse ES cells. 2015 , 53, 225-36		45
1831	Genome engineering using CRISPR-Cas9 system. 2015 , 1239, 197-217		156
1830	RNA-guided transcriptional regulation in planta via synthetic dCas9-based transcription factors. 2015 , 13, 578-89		245
1829	Cationic lipid-mediated delivery of proteins enables efficient protein-based genome editing in vitro and in vivo. 2015 , 33, 73-80		904

1828	Repurposing endogenous type I CRISPR-Cas systems for programmable gene repression. 2015 , 43, 674-81	153
1827	In vivo interrogation of gene function in the mammalian brain using CRISPR-Cas9. 2015 , 33, 102-6	555
1826	CRISPR Primer Designer: Design primers for knockout and chromosome imaging CRISPR-Cas system. 2015 , 57, 613-7	25
1825	Genome engineering and gene expression control for bacterial strain development. 2015 , 10, 56-68	50
1824	Efficient genome engineering in eukaryotes using Cas9 from <i>Streptococcus thermophilus</i> . 2015 , 72, 383-99	51
1823	CRISPR/Cas9 Systems: The Next Generation Gene Targeted Editing Tool. 2015 , 85, 377-387	0
1822	Designing RNA-based genetic control systems for efficient production from engineered metabolic pathways. 2015 , 4, 107-15	41
1821	Recent advances on biology and virulence. 2016 , 5, 2582	22
1820	Biotechnological Strategies for Advanced Biofuel Production: Enhancing Tolerance Phenotypes Through Genome-Scale Modifications. 2016 , 227-263	
1819	EFSA Scientific Colloquium 22 [Epigenetics and Risk Assessment: Where do we stand?]. 2016 , 13, 1129E	1
1818	Waking up dormant tumor suppressor genes with zinc fingers, TALEs and the CRISPR/dCas9 system. 2016 , 7, 60535-60554	49
1817	Brain tumor modeling using the CRISPR/Cas9 system: state of the art and view to the future. 2016 , 7, 33461-71	13
1816	Targeted Inhibition of the miR-199a/214 Cluster by CRISPR Interference Augments the Tumor Tropism of Human Induced Pluripotent Stem Cell-Derived Neural Stem Cells under Hypoxic Condition. 2016 , 2016, 3598542	19
1815	A CRISPR-Based Toolbox for Studying T Cell Signal Transduction. 2016 , 2016, 5052369	18
1814	The Power of CRISPR-Cas9-Induced Genome Editing to Speed Up Plant Breeding. 2016 , 2016, 5078796	34
1813	CRISPR: gene editing is just the beginning. 2016 , 531, 156-9	57
1812	Compact and highly active next-generation libraries for CRISPR-mediated gene repression and activation. 2016 , 5,	343
1811	Emerging Technologies to Create Inducible and Genetically Defined Porcine Cancer Models. 2016 , 7, 28	13

1810	Genome Engineering with TALE and CRISPR Systems in Neuroscience. 2016, 7, 47	21
1809	CRISPR/Cas9: Implications for Modeling and Therapy of Neurodegenerative Diseases. 2016, 9, 30	34
1808	The Development of a Viral Mediated CRISPR/Cas9 System with Doxycycline Dependent gRNA Expression for Inducible In vitro and In vivo Genome Editing. 2016, 9, 70	42
1807	RNA Interference in the Age of CRISPR: Will CRISPR Interfere with RNAi?. 2016, 17, 291	46
1806	Using CRISPR/Cas9-Mediated GLA Gene Knockout as an In Vitro Drug Screening Model for Fabry Disease. 2016, 17,	14
1805	Gene Disruption Technologies Have the Potential to Transform Stored Product Insect Pest Control. 2016, 7,	23
1804	The MYC 3' Wnt-Responsive Element Drives Oncogenic MYC Expression in Human Colorectal Cancer Cells. 2016, 8,	10
1803	The CRISPR/Cas Genome-Editing Tool: Application in Improvement of Crops. 2016, 7, 506	161
1802	An Overview of CRISPR-Based Tools and Their Improvements: New Opportunities in Understanding Plant-Pathogen Interactions for Better Crop Protection. 2016, 7, 765	36
1801	CRISPR-Cas9: Tool for Qualitative and Quantitative Plant Genome Editing. 2016, 7, 1740	49
1800	An Effective Molecular Target Site in Hepatitis B Virus S Gene for Cas9 Cleavage and Mutational Inactivation. 2016, 12, 1104-13	26
1799	Microalgae and Cyanobacteria as Green Molecular Factories: Tools and Perspectives. 2016,	7
1798	Current and future study of genome editing tools. 2016, 44, 23-34	
1797	Design, execution, and analysis of pooled in vitro CRISPR/Cas9 screens. 2016, 283, 3170-80	49
1796	CRISPR guide RNA design for research applications. 2016, 283, 3232-8	56
1795	Next stop for the CRISPR revolution: RNA-guided epigenetic regulators. 2016, 283, 3181-93	52
1794	CRISPR/Cas9: a breakthrough in generating mouse models for endocrinologists. 2016, 57, R81-92	8
1793	Biocatalysis for Drug Discovery and Development. 2016, 421-455	

1792	Gene transcription repression in <i>Clostridium beijerinckii</i> using CRISPR-dCas9. 2016 , 113, 2739-2743	35
1791	Current and future prospects for CRISPR-based tools in bacteria. 2016 , 113, 930-43	79
1790	Biotechnology and synthetic biology approaches for metabolic engineering of bioenergy crops. 2016 , 87, 103-17	34
1789	A Powerful CRISPR/Cas9-Based Method for Targeted Transcriptional Activation. 2016 , 128, 6562-6566	2
1788	Efficient CRISPR/Cas9-Based Genome Engineering in Human Pluripotent Stem Cells. 2016 , 88, 21.4.1-21.4.23	12
1787	A Powerful CRISPR/Cas9-Based Method for Targeted Transcriptional Activation. 2016 , 55, 6452-6	11
1786	Gene Editing: Powerful New Tools for Nephrology Research and Therapy. 2016 , 27, 2940-2947	18
1785	A simple, flexible and high-throughput cloning system for plant genome editing via CRISPR-Cas system. 2016 , 58, 705-12	44
1784	Bacterial disease management: challenges, experience, innovation and future prospects: Challenges in Bacterial Molecular Plant Pathology. 2016 , 17, 1506-1518	83
1783	Applying CRISPR-Cas9 tools to identify and characterize transcriptional enhancers. 2016 , 17, 597-604	42
1782	Correction of aberrant imprinting by allele-specific epigenome editing. 2016 , 99, 482-4	9
1781	Using CRISPR/Cas to study gene function and model disease in vivo. 2016 , 283, 3194-203	30
1780	Efficient CRISPR-Mediated Post-Transcriptional Gene Silencing in a Hyperthermophilic Archaeon Using Multiplexed crRNA Expression. 2016 , 6, 3161-3168	18
1779	Mechanosensing by the β -integrin confers an invasive fibroblast phenotype and mediates lung fibrosis. 2016 , 7, 12564	72
1778	Overview of CRISPR-Cas9 Biology. 2016 , 2016,	10
1777	tCRISPRi: tunable and reversible, one-step control of gene expression. 2016 , 6, 39076	39
1776	Perturb-Seq: Dissecting Molecular Circuits with Scalable Single-Cell RNA Profiling of Pooled Genetic Screens. <i>Cell</i> , 2016 , 167, 1853-1866.e17	56.2 675
1775	A Multiplexed Single-Cell CRISPR Screening Platform Enables Systematic Dissection of the Unfolded Protein Response. <i>Cell</i> , 2016 , 167, 1867-1882.e21	56.2 518

1774 Bibliography. 414-430

1773	Road to the future of systems biotechnology: CRISPR-Cas-mediated metabolic engineering for recombinant protein production. 2016 , 32, 74-91	8
1772	Synthetic Biology: An Emerging Approach for Strain Engineering. 2016 , 85-110	2
1771	Genome editing for targeted improvement of plants. 2016 , 10, 327-343	23
1770	Rapid Screening for CRISPR-Directed Editing of the Drosophila Genome Using white Coconversion. 2016 , 6, 3197-3206	27
1769	The Functionality and Evolution of Eukaryotic Transcriptional Enhancers. 2016 , 96, 143-206	23
1768	Expansion of CRISPR targeting sites in Bombyx mori. 2016 , 72, 31-40	36
1767	Designed nucleases for targeted genome editing. 2016 , 14, 448-62	39
1766	Identifying and Visualizing Functional PAM Diversity across CRISPR-Cas Systems. 2016 , 62, 137-47	206
1765	Genetic circuit design automation. 2016 , 352, aac7341	575
1764	Synthetic biology: insights into biological computation. 2016 , 8, 518-32	16
1763	A Comprehensive, CRISPR-based Functional Analysis of Essential Genes in Bacteria. <i>Cell</i> , 2016 , 165, 1493-5106	367
1762	CasHRA (Cas9-facilitated Homologous Recombination Assembly) method of constructing megabase-sized DNA. 2016 , 44, e124	40
1761	Gene editing and its application for hematological diseases. 2016 , 104, 18-28	19
1760	CRISPR/Cas9 for Human Genome Engineering and Disease Research. 2016 , 17, 131-54	65
1759	Gene Repression in Haloarchaea Using the CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)-Cas I-B System. 2016 , 291, 15226-42	48
1758	The future of iPS cells in advancing regenerative medicine. 2016 , 98, e4	5
1757	Translation Initiation is Controlled by RNA Folding Kinetics via a Ribosome Drafting Mechanism. 2016 , 138, 7016-23	77

1756	Synthetic biology approaches in cancer immunotherapy, genetic network engineering, and genome editing. 2016 , 8, 504-17	6
1755	Genome editing in pluripotent stem cells: research and therapeutic applications. 2016 , 473, 665-74	15
1754	Genome engineering through CRISPR/Cas9 technology in the human germline and pluripotent stem cells. 2016 , 22, 411-9	63
1753	CRISPR-mediated control of the bacterial initiation of replication. 2016 , 44, 3801-10	30
1752	CRISPR-on system for the activation of the endogenous human INS gene. 2016 , 23, 543-7	30
1751	An insight into the protospacer adjacent motif of <i>Streptococcus pyogenes</i> Cas9 with artificially stimulated RNA-guided-Cas9 DNA cleavage flexibility. 2016 , 6, 33514-33522	9
1750	The Application of CRISPR/Cas9 Technologies and Therapies in Stem Cells. 2016 , 2, 95-103	2
1749	Rapid generation of CRISPR/dCas9-regulated, orthogonally repressible hybrid T7-lac promoters for modular, tuneable control of metabolic pathway fluxes in <i>Escherichia coli</i> . 2016 , 44, 4472-85	58
1748	Network Architecture Predisposes an Enzyme to Either Pharmacologic or Genetic Targeting. 2016 , 2, 112-121	15
1747	Synthetic biology platform technologies for antimicrobial applications. 2016 , 105, 35-43	35
1746	New tools for experimental diabetes research: Cellular reprogramming and genome editing. 2016 , 121, 146-50	3
1745	Consequences of Cas9 cleavage in the chromosome of <i>Escherichia coli</i> . 2016 , 44, 4243-51	156
1744	Human pluripotent stem cells. 2016 , 101, 1-3	1
1743	Imaging Specific Genomic DNA in Living Cells. 2016 , 45, 1-23	52
1742	A novel process for obtaining pinosylvin using combinatorial bioengineering in <i>Escherichia coli</i> . 2016 , 32, 102	30
1741	Profiling of engineering hotspots identifies an allosteric CRISPR-Cas9 switch. 2016 , 34, 646-51	139
1740	The expanding footprint of CRISPR/Cas9 in the plant sciences. 2016 , 35, 1451-68	25
1739	Applications of CRISPR/Cas9 technology for targeted mutagenesis, gene replacement and stacking of genes in higher plants. 2016 , 35, 1439-50	37

1738	CRISPR/Cas9 for plant genome editing: accomplishments, problems and prospects. 2016 , 35, 1417-27	52
1737	Bacterial Genome Editing with CRISPR-Cas9: Deletion, Integration, Single Nucleotide Modification, and Desirable "Clean" Mutant Selection in <i>Clostridium beijerinckii</i> as an Example. 2016 , 5, 721-32	112
1736	CRISPR/Cas9 in Genome Editing and Beyond. 2016 , 85, 227-64	644
1735	Golden Gate Assembly of CRISPR gRNA expression array for simultaneously targeting multiple genes. 2016 , 73, 4315-4325	38
1734	The CRISPR RNA-guided surveillance complex in <i>Escherichia coli</i> accommodates extended RNA spacers. 2016 , 44, 7385-94	36
1733	A genome editing primer for the hematologist. 2016 , 127, 2525-35	21
1732	Development of Light-Activated CRISPR Using Guide RNAs with Photocleavable Protectors. 2016 , 128, 12628-12632	21
1731	Directing cellular information flow via CRISPR signal conductors. 2016 , 13, 938-944	121
1730	CRISPR-mediated genome editing and human diseases. 2016 , 3, 244-251	51
1729	Applications of CRISPR Genome Engineering in Cell Biology. 2016 , 26, 875-888	58
1728	Applications of CRISPR technologies in research and beyond. 2016 , 34, 933-941	544
1727	Recent Advances in Stem Cells. 2016 ,	1
1726	Cpf1 nucleases demonstrate robust activity to induce DNA modification by exploiting homology directed repair pathways in mammalian cells. 2016 , 11, 46	43
1725	CRISPR-Cas: biology, mechanisms and relevance. 2016 , 371,	168
1724	Using metabolite-responsive gene regulators to improve microbial biosynthesis. 2016 , 14, 93-102	17
1723	CRISPRi engineering <i>E. coli</i> for morphology diversification. 2016 , 38, 358-369	77
1722	Determination of local chromatin composition by CasID. 2016 , 7, 476-484	36
1721	CRISPR-Cas9 for the genome engineering of cyanobacteria and succinate production. 2016 , 38, 293-302	133

1720	Challenges of CRISPR/Cas9 applications for long non-coding RNA genes. 2017 , 45, e12	101
1719	Progress in Gene Editing Transgenesis Genome Manipulation in Mosquitoes. 2016 , 51, 1-35	
1718	Genetic Engineering of Plants Using Zn Fingers, TALENs, and CRISPRs. 2016 , 187-201	2
1717	Genome-Editing Technologies: Principles and Applications. 2016 , 8,	120
1716	Targeted AID-mediated mutagenesis (TAM) enables efficient genomic diversification in mammalian cells. 2016 , 13, 1029-1035	267
1715	Efficient genome engineering approaches for the short-lived African turquoise killifish. 2016 , 11, 2010-2028	36
1714	CRISPR-Cas9 directed knock-out of a constitutively expressed gene using lance array nano-injection. 2016 , 5, 1521	6
1713	Diverse evolutionary roots and mechanistic variations of the CRISPR-Cas systems. 2016 , 353, aad5147	378
1712	CRISPR interference as a titratable, trans-acting regulatory tool for metabolic engineering in the cyanobacterium <i>Synechococcus</i> sp. strain PCC 7002. 2016 , 38, 170-179	127
1711	Genome editing comes of age. 2016 , 11, 1573-8	60
1710	Genome Editing. 2016 ,	3
1709	Extending CRISPR-Cas9 Technology from Genome Editing to Transcriptional Engineering in the Genus <i>Clostridium</i> . 2016 , 82, 6109-6119	44
1708	Targeted Epigenetic Remodeling of Endogenous Loci by CRISPR/Cas9-Based Transcriptional Activators Directly Converts Fibroblasts to Neuronal Cells. 2016 , 19, 406-14	139
1707	CRISPR-based genome editing and expression control systems in <i>Clostridium acetobutylicum</i> and <i>Clostridium beijerinckii</i> . 2016 , 11, 961-72	114
1706	CRISPR/Cas9 genome editing in human pluripotent stem cells: Harnessing human genetics in a dish. 2016 , 245, 788-806	14
1705	System-level genome editing in microbes. 2016 , 33, 113-122	18
1704	Using CRISPR-Cas9 Genome Editing to Enhance Cell Based Therapies for the Treatment of Diabetes Mellitus. 2016 , 127-147	1
1703	Exploring Appetite and Hypothalamic Circuitry through Manipulating Gene Expression. 2016 , 134-150	

1702	Depletion of Undecaprenyl Pyrophosphate Phosphatases Disrupts Cell Envelope Biogenesis in <i>Bacillus subtilis</i> . 2016 , 198, 2925-2935	40
1701	CRISPR-Cas9 nuclear dynamics and target recognition in living cells. 2016 , 214, 529-37	98
1700	Development of Light-Activated CRISPR Using Guide RNAs with Photocleavable Protectors. 2016 , 55, 12440-4	97
1699	CRISPR technologies for bacterial systems: Current achievements and future directions. 2016 , 34, 1180-1209	104
1698	Tools and applications in synthetic biology. 2016 , 105, 20-34	35
1697	CRISPR interference-guided balancing of a biosynthetic mevalonate pathway increases terpenoid production. 2016 , 38, 228-240	95
1696	Whither life? Conjectures on the future evolution of biochemistry. 2016 , 12,	1
1695	Recognizing and engineering digital-like logic gates and switches in gene regulatory networks. 2016 , 33, 74-82	32
1694	TALE proteins search DNA using a rotationally decoupled mechanism. 2016 , 12, 831-7	37
1693	Comprehensive Protocols for CRISPR/Cas9-based Gene Editing in Human Pluripotent Stem Cells. 2016 , 38, 5B.6.1-5B.6.60	23
1692	Biosensing <i>Vibrio cholerae</i> with Genetically Engineered <i>Escherichia coli</i> . 2016 , 5, 1275-1283	29
1691	Novel Technologies for Optimal Strain Breeding. 2017 , 159, 227-254	2
1690	Systems Metabolic Engineering of <i>Escherichia coli</i> . 2016 , 7,	23
1689	Easy regulation of metabolic flux in <i>Escherichia coli</i> using an endogenous type I-E CRISPR-Cas system. 2016 , 15, 195	22
1688	CRISPR-Cas9 technology and its application in haematological disorders. 2016 , 175, 208-225	15
1687	CRISPR/Cas9: a historical and chemical biology perspective of targeted genome engineering. 2016 , 45, 6666-6684	19
1686	Application of CRISPRi in <i>Corynebacterium glutamicum</i> for shikimic acid production. 2016 , 38, 2153-2161	37
1685	Pathway Design, Engineering, and Optimization. 2018 , 162, 77-116	7

1684	Editing DNA Methylation in the Mammalian Genome. <i>Cell</i> , 2016 , 167, 233-247.e17	56.2	690
1683	Enhanced protein and biochemical production using CRISPRi-based growth switches. 2016 , 38, 274-284		58
1682	High-Efficiency Genome Editing of Streptomyces Species by an Engineered CRISPR/Cas System. 2016 , 575, 271-84		16
1681	Efficient sequence-specific isolation of DNA fragments and chromatin by in vitro enChIP technology using recombinant CRISPR ribonucleoproteins. 2016 , 21, 370-7		28
1680	Diversity of CRISPR-Cas-Mediated Mechanisms of Adaptive Immunity in Prokaryotes and Their Application in Biotechnology. 2016 , 81, 653-61		8
1679	Practical Considerations for Using Pooled Lentiviral CRISPR Libraries. 2016 , 115, 31.5.1-31.5.13		11
1678	Outlier analysis of functional genomic profiles enriches for oncology targets and enables precision medicine. 2016 , 17, 455		7
1677	The genome editing revolution: A CRISPR-Cas TALE off-target story. 2016 , 38 Suppl 1, S4-S13		45
1676	Prospects of microbial cell factories developed through systems metabolic engineering. 2016 , 9, 610-7		54
1675	The genome editing revolution: A CRISPR-Cas TALE off-target story. 2016 , 1, 7-16		
1674	Efficient biosynthesis of (2S)-pinocembrin from d-glucose by integrating engineering central metabolic pathways with a pH-shift control strategy. 2016 , 218, 999-1007		29
1673	Investigating essential gene function in Mycobacterium tuberculosis using an efficient CRISPR interference system. 2016 , 44, e143		75
1672	Transient Tcf3 Gene Repression by TALE-Transcription Factor Targeting. 2016 , 180, 1559-1573		2
1671	Libraries of Synthetic TALE-Activated Promoters: Methods and Applications. 2016 , 576, 361-78		6
1670	CRISPR-Cas9 System as a Versatile Tool for Genome Engineering in Human Cells. 2016 , 5, e388		20
1669	Multiplexed Bacterial Cell-Cell Communication via a Genetically Encoded CRISPRi-Based Multiplexer-Demultiplexer Circuit. 2016 ,		2
1668	CRISPR interference (CRISPRi) for gene regulation and succinate production in cyanobacterium <i>S. elongatus</i> PCC 7942. 2016 , 15, 196		96
1667	Gene and cell-based therapies for inherited retinal disorders: An update. 2016 , 172, 349-366		50

1666	N-cadherin is Key to Expression of the Nucleus Pulposus Cell Phenotype under Selective Substrate Culture Conditions. 2016 , 6, 28038	28
1665	Genetics of Combined Pituitary Hormone Deficiency: Roadmap into the Genome Era. 2016 , 37, 636-675	106
1664	NgAgo-based fabp11a gene knockdown causes eye developmental defects in zebrafish. 2016 , 26, 1349-1352	38
1663	Notch regulates BMP responsiveness and lateral branching in vessel networks via SMAD6. 2016 , 7, 13247	59
1662	A Molecular Chipper technology for CRISPR sgRNA library generation and functional mapping of noncoding regions. 2016 , 7, 11178	12
1661	Current challenges of research on filamentous fungi in relation to human welfare and a sustainable bio-economy: a white paper. 2016 , 3, 6	134
1660	Complex transcriptional modulation with orthogonal and inducible dCas9 regulators. 2016 , 13, 1043-1049	178
1659	Highly Efficient Genome Editing of Murine and Human Hematopoietic Progenitor Cells by CRISPR/Cas9. 2016 , 17, 1453-1461	156
1658	A CRISPR-based approach for targeted DNA demethylation. 2016 , 2, 16009	243
1657	Current status of potential applications of repurposed Cas9 for structural and functional genomics of plants. 2016 , 480, 499-507	20
1656	CRISPRi-Manipulation of Genetic Code Expansion via RF1 for Reassignment of Amber Codon in Bacteria. 2016 , 6, 20000	8
1655	Precision Modulation of Neurodegenerative Disease-Related Gene Expression in Human iPSC-Derived Neurons. 2016 , 6, 28420	47
1654	Multigene disruption in undomesticated Bacillus subtilis ATCC 6051a using the CRISPR/Cas9 system. 2016 , 6, 27943	67
1653	Targeting cellular mRNAs translation by CRISPR-Cas9. 2016 , 6, 29652	15
1652	The role of repressor kinetics in relief of transcriptional interference between convergent promoters. 2016 , 44, 6625-38	17
1651	Integration and exchange of split dCas9 domains for transcriptional controls in mammalian cells. 2016 , 7, 13056	41
1650	Ligand-binding domains of nuclear receptors facilitate tight control of split CRISPR activity. 2016 , 7, 12009	73
1649	Directed evolution using dCas9-targeted somatic hypermutation in mammalian cells. 2016 , 13, 1036-1042	288

1648	Genome engineering in the yeast pathogen <i>Candida glabrata</i> using the CRISPR-Cas9 system. 2016 , 6, 35766	66
1647	Empower multiplex cell and tissue-specific CRISPR-mediated gene manipulation with self-cleaving ribozymes and tRNA. 2017 , 45, e28	47
1646	Biochemical Analysis of Genome Functions Using Locus-Specific Chromatin Immunoprecipitation Technologies. 2016 , 10, 1-9	11
1645	Isolation of Specific Genomic Regions and Identification of Associated Molecules by enChIP. 2016 , e53478	2
1644	Microinjection for Transgenesis and Genome Editing in Threespine Sticklebacks. 2016 ,	12
1643	Developing genetically engineered mouse models using engineered nucleases: Current status, challenges, and the way forward. 2016 , 20, 13-20	3
1642	Phage-mediated Delivery of Targeted sRNA Constructs to Knock Down Gene Expression in <i>E. coli</i> . 2016 ,	3
1641	Konditionale Kontrolle der CRISPR/Cas9-Funktion. 2016 , 128, 5482-5487	5
1640	Applications of CRISPR-Cas in its natural habitat. 2016 , 34, 30-36	5
1639	New and improved tools and methods for enhanced biosynthesis of natural products in microorganisms. 2016 , 42, 159-168	18
1638	Versatile in vivo regulation of tumor phenotypes by dCas9-mediated transcriptional perturbation. 2016 , 113, E3892-900	76
1637	Computational Framework for Modeling Multiple Noncooperative Transcription Factor Binding and Its Application to the Analysis of Nuclear Factor Kappa B Oscillatory Response. 2016 , 23, 923-933	1
1636	CRISPR/Cas9 mediated knockout of the abdominal-A homeotic gene in the global pest, diamondback moth (<i>Plutella xylostella</i>). 2016 , 75, 98-106	82
1635	Insert, remove or replace: A highly advanced genome editing system using CRISPR/Cas9. 2016 , 1863, 2333-44	66
1634	Transcriptional regulation with CRISPR-Cas9: principles, advances, and applications. 2016 , 40, 177-184	53
1633	Development of a CRISPR-Cas9 Tool Kit for Comprehensive Engineering of <i>Bacillus subtilis</i> . 2016 , 82, 4876-95	118
1632	Engineering cell-based therapies to interface robustly with host physiology. 2016 , 105, 55-65	12
1631	Novel Immunotherapeutic Approaches to the Treatment of Cancer. 2016 ,	1

1630	CRISPR/Cas9: From Genome Engineering to Cancer Drug Discovery. 2016 , 2, 313-324	32
1629	CHOPCHOP v2: a web tool for the next generation of CRISPR genome engineering. 2016 , 44, W272-6	527
1628	Evaluation of 3-hydroxypropionate biosynthesis in vitro by partial introduction of the 3-hydroxypropionate/4-hydroxybutyrate cycle from <i>Metallosphaera sedula</i> . 2016 , 43, 1313-21	6
1627	Transcriptional Interference in Convergent Promoters as a Means for Tunable Gene Expression. 2016 , 5, 1331-1341	20
1626	Benchmarking of TALE- and CRISPR/dCas9-Based Transcriptional Regulators in Mammalian Cells for the Construction of Synthetic Genetic Circuits. 2016 , 5, 1050-1058	16
1625	Cellular Therapies: Gene Editing and Next-Gen CAR T Cells. 2016 , 203-247	1
1624	Optimizing sgRNA position markedly improves the efficiency of CRISPR/dCas9-mediated transcriptional repression. 2016 , 44, e141	78
1623	Conditional Control of CRISPR/Cas9 Function. 2016 , 55, 5394-9	36
1622	Engineering Synthetic Gene Circuits in Living Cells with CRISPR Technology. 2016 , 34, 535-547	82
1621	Editing the epigenome: technologies for programmable transcription and epigenetic modulation. 2016 , 13, 127-37	272
1620	Precision control of recombinant gene transcription for CHO cell synthetic biology. 2016 , 34, 492-503	24
1619	Expanding the CRISPR imaging toolset with <i>Staphylococcus aureus</i> Cas9 for simultaneous imaging of multiple genomic loci. 2016 , 44, e75	122
1618	Casilio: a versatile CRISPR-Cas9-Pumilio hybrid for gene regulation and genomic labeling. 2016 , 26, 254-7	86
1617	CRISPR-Based Typing and Next-Generation Tracking Technologies. 2016 , 7, 395-411	47
1616	Specific Reactivation of Latent HIV-1 by dCas9-SunTag-VP64-mediated Guide RNA Targeting the HIV-1 Promoter. 2016 , 24, 508-21	54
1615	Tools and Principles for Microbial Gene Circuit Engineering. 2016 , 428, 862-88	68
1614	Chromatin organization in pluripotent cells: emerging approaches to study and disrupt function. 2016 , 15, 305-14	3
1613	Unique features of long non-coding RNA biogenesis and function. 2016 , 17, 47-62	2042

1612	Spell Checking Nature: Versatility of CRISPR/Cas9 for Developing Treatments for Inherited Disorders. 2016 , 98, 90-101	67
1611	Beyond editing: repurposing CRISPR-Cas9 for precision genome regulation and interrogation. 2016 , 17, 5-15	538
1610	Applications of CRISPR-Cas systems in neuroscience. 2016 , 17, 36-44	165
1609	The contribution of mass spectrometry-based proteomics to understanding epigenetics. 2016 , 8, 429-45	28
1608	Modeling Alzheimer's disease with human induced pluripotent stem (iPS) cells. 2016 , 73, 13-31	67
1607	Revolutionizing plant biology: multiple ways of genome engineering by CRISPR/Cas. 2016 , 12, 8	103
1606	Programmable RNA Tracking in Live Cells with CRISPR/Cas9. <i>Cell</i> , 2016 , 165, 488-96	56.2 358
1605	Functional screening of guide RNAs targeting the regulatory and structural HIV-1 viral genome for a cure of AIDS. 2016 , 30, 1163-74	47
1604	Using RNA as Molecular Code for Programming Cellular Function. 2016 , 5, 795-809	36
1603	Strategies of genome editing in mycobacteria: Achievements and challenges. 2016 , 98, 132-8	13
1602	Energy biotechnology in the CRISPR-Cas9 era. 2016 , 38, 79-84	21
1601	Into new territory: improved microbial synthesis through engineering of the essential metabolic network. 2016 , 38, 106-11	33
1600	Molecular Titration Promotes Oscillations and Bistability in Minimal Network Models with Monomeric Regulators. 2016 , 5, 321-33	35
1599	Cyanobacterial chassis engineering for enhancing production of biofuels and chemicals. 2016 , 100, 3401-13	60
1598	Quantitative Analyses of Core Promoters Enable Precise Engineering of Regulated Gene Expression in Mammalian Cells. 2016 , 5, 395-404	46
1597	Activation of RNase L is dependent on OAS3 expression during infection with diverse human viruses. 2016 , 113, 2241-6	141
1596	Synthetic biology to access and expand nature's chemical diversity. 2016 , 14, 135-49	314
1595	Programmed Self-Assembly of an Active P22-Cas9 Nanocarrier System. 2016 , 13, 1191-6	53

1594	Advances and perspectives on the use of CRISPR/Cas9 systems in plant genomics research. 2016 , 30, 70-7	82
1593	Effective knockdown of Drosophila long non-coding RNAs by CRISPR interference. 2016 , 44, e84	41
1592	Chemical and Biophysical Modulation of Cas9 for Tunable Genome Engineering. 2016 , 11, 681-8	72
1591	A transcription activator-like effector (TALE) induction system mediated by proteolysis. 2016 , 12, 254-60	24
1590	Programmable control of bacterial gene expression with the combined CRISPR and antisense RNA system. 2016 , 44, 2462-73	69
1589	Small Genetic Circuits and MicroRNAs: Big Players in Polymerase II Transcriptional Control in Plants. 2016 , 28, 286-303	20
1588	Plastic and Evolved Responses to Global Change: What Can We Learn from Comparative Transcriptomics?. 2016 , 107, 71-81	71
1587	Harnessing the Prokaryotic Adaptive Immune System as a Eukaryotic Antiviral Defense. 2016 , 24, 294-306	19
1586	Corynebacterium glutamicum Metabolic Engineering with CRISPR Interference (CRISPRi). 2016 , 5, 375-85	175
1585	Foundations and Emerging Paradigms for Computing in Living Cells. 2016 , 428, 893-915	16
1584	Repurposing the CRISPR-Cas9 system for targeted DNA methylation. 2016 , 44, 5615-28	475
1583	Targeted Gene Manipulation in Plants Using the CRISPR/Cas Technology. 2016 , 43, 251-62	41
1582	Transcriptional induction of protein kinase C delta by p53 tumor suppressor in the apoptotic response to DNA damage. 2016 , 374, 167-174	10
1581	CRISPR/Cas9: A powerful tool for crop genome editing. 2016 , 4, 75-82	98
1580	Next Generation Prokaryotic Engineering: The CRISPR-Cas Toolkit. 2016 , 34, 575-587	95
1579	Functional Genomic Strategies for Elucidating Human-Virus Interactions: Will CRISPR Knockout RNAi and Haploid Cells?. 2016 , 94, 1-51	22
1578	Chemical Biology Approaches to Genome Editing: Understanding, Controlling, and Delivering Programmable Nucleases. 2016 , 23, 57-73	35
1577	Functionalization of an Antisense Small RNA. 2016 , 428, 889-92	3

1576	CRISPR Interference Efficiently Induces Specific and Reversible Gene Silencing in Human iPSCs. 2016 , 18, 541-53	271
1575	Quantitative CRISPR interference screens in yeast identify chemical-genetic interactions and new rules for guide RNA design. 2016 , 17, 45	110
1574	Plant Growth Beyond Limits. 2016 , 21, 102-109	21
1573	CRISPR/Cas9 advances engineering of microbial cell factories. 2016 , 34, 44-59	152
1572	Development of a genome editing technique using the CRISPR/Cas9 system in the industrial filamentous fungus <i>Aspergillus oryzae</i> . 2016 , 38, 637-42	146
1571	Essential RNA-Based Technologies and Their Applications in Plant Functional Genomics. 2016 , 34, 106-123	39
1570	CRISPR Technology for Genome Activation and Repression in Mammalian Cells. 2016 , 2016, pdb.prot090175	16
1569	An Introduction to CRISPR Technology for Genome Activation and Repression in Mammalian Cells. 2016 , 2016, pdb.top086835	6
1568	Multi-gene engineering in plants with RNA-guided Cas9 nuclease. 2016 , 37, 69-75	24
1567	Epigenome Editing: State of the Art, Concepts, and Perspectives. 2016 , 32, 101-113	127
1566	Multiple Gene Repression in Cyanobacteria Using CRISPRi. 2016 , 5, 207-12	163
1565	Machine Learning in Genomic Medicine: A Review of Computational Problems and Data Sets. 2016 , 104, 176-197	132
1564	Programming Biology: Expanding the Toolset for the Engineering of Transcription. 2016 , 1-64	2
1563	Xenobiotic Life. 2016 , 337-357	
1562	CRISPR/dCas9-mediated Transcriptional Inhibition Ameliorates the Epigenetic Dysregulation at D4Z4 and Represses DUX4-fl in FSH Muscular Dystrophy. 2016 , 24, 527-35	59
1561	Exploiting CRISPR-Cas immune systems for genome editing in bacteria. 2016 , 37, 61-68	50
1560	Potent and Targeted Activation of Latent HIV-1 Using the CRISPR/dCas9 Activator Complex. 2016 , 24, 488-98	91
1559	CRISPR-mediated Activation of Latent HIV-1 Expression. 2016 , 24, 499-507	70

1558	Orthogonal Modular Gene Repression in Escherichia coli Using Engineered CRISPR/Cas9. 2016 , 5, 81-8	40
1557	Nanomedicine-mediated cancer stem cell therapy. 2016 , 74, 1-18	100
1556	Controlling transcription in human pluripotent stem cells using CRISPR-effectors. 2016 , 101, 36-42	13
1555	Synthetic Biology. 2016 ,	1
1554	Synthetic Biology--Toward Therapeutic Solutions. 2016 , 428, 945-62	24
1553	Preface. 2016 , 1358, v-viii	2
1552	Transcriptional Regulation with CRISPR/Cas9 Effectors in Mammalian Cells. 2016 , 1358, 43-57	18
1551	Cell-Cell Communication in Yeast Using Auxin Biosynthesis and Auxin Responsive CRISPR Transcription Factors. 2016 , 5, 279-86	35
1550	Plant-pathogen interactions: toward development of next-generation disease-resistant plants. 2017 , 37, 229-237	45
1549	Targeted genome regulation via synthetic programmable transcriptional regulators. 2017 , 37, 429-440	18
1548	Programmable Genome Editing Tools and their Regulation for Efficient Genome Engineering. 2017 , 15, 146-160	63
1547	Genome engineering of stem cell organoids for disease modeling. 2017 , 8, 315-327	23
1546	Bioinformatic prediction and functional characterization of human KIAA0100 gene. 2017 , 7, 10-18	4
1545	Towards a CRISPR view of early human development: applications, limitations and ethical concerns of genome editing in human embryos. 2017 , 144, 3-7	30
1544	Development of a genome-editing CRISPR/Cas9 system in thermophilic fungal species and its application to hyper-cellulase production strain engineering. 2017 , 10, 1	305
1543	CRISPR-Cas type II-based Synthetic Biology applications in eukaryotic cells. 2017 , 14, 1286-1293	8
1542	Directing traffic on DNA-How transcription factors relieve or induce transcriptional interference. 2017 , 8, 120-125	16
1541	Rapid and Efficient Genome Editing in Staphylococcus aureus by Using an Engineered CRISPR/Cas9 System. 2017 , 139, 3790-3795	59

1540	Transcriptome-Level Signatures in Gene Expression and Gene Expression Variability during Bacterial Adaptive Evolution. 2017 , 2,	21
1539	Improving acetyl-CoA biosynthesis in via the overexpression of pantothenate kinase and PDH bypass. 2017 , 10, 41	29
1538	CRISPR/CAS9 Technologies. 2017 , 32, 883-888	14
1537	The Impact of DNA Topology and Guide Length on Target Selection by a Cytosine-Specific Cas9. 2017 , 6, 1103-1113	17
1536	T-ALL and thymocytes: a message of noncoding RNAs. 2017 , 10, 66	19
1535	Application of CRISPR/Cas9 in plant biology. 2017 , 7, 292-302	94
1534	Towards combinatorial transcriptional engineering. 2017 , 35, 390-405	15
1533	Polyhydroxyalkanoates: Sustainability, Production, and Industrialization. 2017 , 11-33	9
1532	Site-specific recruitment of epigenetic factors with a modular CRISPR/Cas system. 2017 , 8, 279-286	16
1531	Obtaining a Panel of Cascade Promoter-5'-UTR Complexes in Escherichia coli. 2017 , 6, 1065-1075	48
1530	Programmable transcriptional repression in mycobacteria using an orthogonal CRISPR interference platform. 2017 , 2, 16274	204
1529	Effect of TCEA3 on the differentiation of bovine skeletal muscle satellite cells. 2017 , 484, 827-832	4
1528	LncRNA AK023948 is a positive regulator of AKT. 2017 , 8, 14422	70
1527	Gene Editing With CRISPR/Cas9 RNA-Directed Nuclease. 2017 , 120, 876-894	49
1526	Genome Editing in Clostridium saccharoperbutylacetonicum N1-4 with the CRISPR-Cas9 System. 2017 , 83,	57
1525	Fusion of SpCas9 to E. coli Rec A protein enhances CRISPR-Cas9 mediated gene knockout in mammalian cells. 2017 , 247, 42-49	19
1524	Mutagenesis and Transgenesis in Zebrafish. 2017 , 1-31	1
1523	Systematic testing of enzyme perturbation sensitivities via graded dCas9 modulation in Saccharomyces cerevisiae. 2017 , 40, 14-22	72

1522	Therapeutic genome engineering via CRISPR-Cas systems. 2017 , 9, e1380	17
1521	A systematic optimization of medium chain fatty acid biosynthesis via the reverse beta-oxidation cycle in <i>Escherichia coli</i> . 2017 , 41, 115-124	45
1520	Applications of the CRISPR-Cas9 system in kidney research. 2017 , 92, 324-335	9
1519	Advancing chimeric antigen receptor T cell therapy with CRISPR/Cas9. 2017 , 8, 634-643	64
1518	Elimination of the cryptic plasmid in <i>Leuconostoc citreum</i> by CRISPR/Cas9 system. 2017 , 251, 151-155	15
1517	Construction of a Gene Knockdown System Based on Catalytically Inactive ("Dead") Cas9 (dCas9) in <i>Staphylococcus aureus</i> . 2017 , 83,	27
1516	Enhancing Protein Production Yield from Chinese Hamster Ovary Cells by CRISPR Interference. 2017 , 6, 1509-1519	20
1515	High-throughput CRISPRi phenotyping identifies new essential genes in. 2017 , 13, 931	135
1514	Amino Acid Fermentation. 2017 ,	5
1513	Locus-specific histone deacetylation using a synthetic CRISPR-Cas9-based HDAC. 2017 , 8, 15315	130
1512	CRISPR/Cas system for yeast genome engineering: advances and applications. 2017 , 17,	103
1511	Live-cell CRISPR imaging in plants reveals dynamic telomere movements. 2017 , 91, 565-573	81
1510	Identification of physical interactions between genomic regions by enChIP-Seq. 2017 , 22, 506-520	21
1509	A lentivirus-free inducible CRISPR-Cas9 system for efficient targeting of human genes. 2017 , 530, 40-49	4
1508	CRISPRi mediated phosphoenolpyruvate carboxylase regulation to enhance the production of lipid in <i>Chlamydomonas reinhardtii</i> . 2017 , 245, 1527-1537	91
1507	CRISPR Editing in Biological and Biomedical Investigation. 2017 , 118, 4152-4162	5
1506	Programming mRNA decay to modulate synthetic circuit resource allocation. 2017 , 8, 15128	39
1505	CRISPR-Cpf1 assisted genome editing of <i>Corynebacterium glutamicum</i> . 2017 , 8, 15179	198

1504	AssemblX: a user-friendly toolkit for rapid and reliable multi-gene assemblies. 2017 , 45, e80	16
1503	Genetic suppression: Extending our knowledge from lab experiments to natural populations. 2017 , 39, 1700023	5
1502	Switchable Cas9. 2017 , 48, 119-126	32
1501	Repurposing a Two-Component System-Based Biosensor for the Killing of <i>Vibrio cholerae</i> . 2017 , 6, 1403-1415	43
1500	Genome Engineering of Stem Cells for Autonomously Regulated, Closed-Loop Delivery of Biologic Drugs. 2017 , 8, 1202-1213	52
1499	CRISPR-Cas9 technology: applications in genome engineering, development of sequence-specific antimicrobials, and future prospects. 2017 , 9, 109-122	33
1498	Polycistronic tRNA and CRISPR guide-RNA enables highly efficient multiplexed genome engineering in human cells. 2017 , 482, 889-895	37
1497	CRISPRi-sRNA: Transcriptional-Translational Regulation of Extracellular Electron Transfer in <i>Shewanella oneidensis</i> . 2017 , 6, 1679-1690	51
1496	Applications of CRISPR-Cas for synthetic biology and genetic recording. 2017 , 5, 9-15	12
1495	Cartilage repair by mesenchymal stem cells: Clinical trial update and perspectives. 2017 , 9, 76-88	115
1494	Controlling microbial PHB synthesis via CRISPRi. 2017 , 101, 5861-5867	33
1493	CRISPR system in filamentous fungi: Current achievements and future directions. 2017 , 627, 212-221	45
1492	Toward a genetic tool development pipeline for host-associated bacteria. 2017 , 38, 156-164	26
1491	Bacteriophages Infecting Lactic Acid Bacteria. 2017 , 249-272	2
1490	Application of CRISPR-Cas9 in eye disease. 2017 , 161, 116-123	7
1489	From bench to bedside: The long journey of long non-coding RNAs. 2017 , 3, 119-124	17
1488	Neuroepigenomics in Aging and Disease. 2017 ,	3
1487	CRISPR/dCas9-mediated inhibition of gene expression in <i>Staphylococcus aureus</i> . 2017 , 139, 79-86	16

1486	Epigenome Editing in the Brain. 2017 , 978, 409-424	6
1485	Asymmetric positioning of Cas1-2 complex and Integration Host Factor induced DNA bending guide the unidirectional homing of protospacer in CRISPR-Cas type I-E system. 2017 , 45, 367-381	38
1484	RNA Activation. 2017 ,	1
1483	Disruptive non-disruptive applications of CRISPR/Cas9. 2017 , 48, 203-209	6
1482	One-Step piggyBac Transposon-Based CRISPR/Cas9 Activation of Multiple Genes. 2017 , 8, 64-76	15
1481	Optimization of a CRISPR/Cas9-mediated Knock-in Strategy at the Porcine Rosa26 Locus in Porcine Foetal Fibroblasts. 2017 , 7, 3036	25
1480	State of the art technologies to explore long non-coding RNAs in cancer. 2017 , 21, 3120-3140	44
1479	Mammalian Synthetic Biology: Engineering Biological Systems. 2017 , 19, 249-277	36
1478	CRISPR/Cas9-Based Genome Editing for Disease Modeling and Therapy: Challenges and Opportunities for Nonviral Delivery. 2017 , 117, 9874-9906	287
1477	Progress and Application of CRISPR/Cas Technology in Biological and Biomedical Investigation. 2017 , 118, 3061-3071	6
1476	Alagille syndrome: Genetics and Functional Models. 2017 , 5, 233-241	21
1475	A Versatile Toolbox for the Control of Protein Levels Using N-Acetyl-L-lysine Dependent Amber Suppression. 2017 , 6, 1892-1902	13
1474	ROC'n'Ribo: Characterizing a Riboswitching Expression System by Modeling Single-Cell Data. 2017 , 6, 1211-1224	11
1473	Multiplex gene regulation by CRISPR-ddCpf1. 2017 , 3, 17018	109
1472	Engineering RGB color vision into Escherichia coli. 2017 , 13, 706-708	101
1471	Complementary information derived from CRISPR Cas9 mediated gene deletion and suppression. 2017 , 8, 15403	65
1470	Digital logic circuits in yeast with CRISPR-dCas9 NOR gates. 2017 , 8, 15459	120
1469	Application of CRISPR/Cas9 to the study of brain development and neuropsychiatric disease. 2017 , 82, 157-166	19

1468	Engineered CRISPR Systems for Next Generation Gene Therapies. 2017 , 6, 1614-1626	24
1467	RNA-Guided Activation of Pluripotency Genes in Human Fibroblasts. 2017 , 19, 189-198	14
1466	Synthetic Biology of Polyhydroxyalkanoates (PHA). 2018 , 162, 147-174	27
1465	Aio-Casilio: a robust CRISPR-Cas9-Pumilio system for chromosome labeling. 2017 , 48, 293-299	6
1464	Progress and perspective of biosynthetic platform for higher-order biofuels. 2017 , 80, 801-826	9
1463	Mutation of nucleotides around the +1 position of type 3 polymerase III promoters: The effect on transcriptional activity and start site usage. 2017 , 8, 275-287	23
1462	Inhibition Mechanism of an Anti-CRISPR Suppressor AcrIIA4 Targeting SpyCas9. 2017 , 67, 117-127.e5	103
1461	Increasing the yield of middle silk gland expression system through transgenic knock-down of endogenous sericin-1. 2017 , 292, 823-831	
1460	CRISPR-Cas9 epigenome editing enables high-throughput screening for functional regulatory elements in the human genome. 2017 , 35, 561-568	241
1459	New variants of CRISPR RNA-guided genome editing enzymes. 2017 , 15, 917-926	63
1458	A G-quadruplex structure at the 5' end of the H19 coding region regulates H19 transcription. 2017 , 8, 45815	16
1457	Using Morpholinos to Probe Gene Networks in Sea Urchin. 2017 , 1565, 87-104	6
1456	Large, Diverse Population Cohorts of hiPSCs and Derived Hepatocyte-like Cells Reveal Functional Genetic Variation at Blood Lipid-Associated Loci. 2017 , 20, 558-570.e10	102
1455	Purified Cas9 Fusion Proteins for Advanced Genome Manipulation. 2017 , 1, 1600052	9
1454	Recursive DNA Assembly Using Protected Oligonucleotide Duplex Assisted Cloning (PODAC). 2017 , 6, 943-949	7
1453	Genome-scale CRISPR-Cas9 knockout and transcriptional activation screening. 2017 , 12, 828-863	459
1452	Genome Engineering of Virulent Lactococcal Phages Using CRISPR-Cas9. 2017 , 6, 1351-1358	58
1451	CRISPR/Cas 9 genome editing and its applications in organoids. 2017 , 312, G257-G265	81

1450	Precision Genome Editing for Systems Biology Δ Temporal Perspective. 2017 , 367-392	
1449	Efficient de novo synthesis of resveratrol by metabolically engineered <i>Escherichia coli</i> . 2017 , 44, 1083-1095	48
1448	Methods for decoding Cas9 protospacer adjacent motif (PAM) sequences: A brief overview. 2017 , 121-122, 3-8	15
1447	Efficient Transcriptional Gene Repression by Type V-A CRISPR-Cpf1 from <i>Eubacterium eligens</i> . 2017 , 6, 1273-1282	46
1446	CRISPR applications in ophthalmologic genome surgery. 2017 , 28, 252-259	20
1445	A method for high-throughput production of sequence-verified DNA libraries and strain collections. 2017 , 13, 913	26
1444	Genome editing approaches: manipulating of lovastatin and taxol synthesis of filamentous fungi by CRISPR/Cas9 system. 2017 , 101, 3953-3976	42
1443	Achieving large dynamic range control of gene expression with a compact RNA transcription-translation regulator. 2017 , 45, 5614-5624	36
1442	Choosing CRISPR-based screens in cancer. 2017 , 14, 343-346	4
1441	CRISPRtools: a flexible computational platform for performing CRISPR/Cas9 experiments in the mouse. 2017 , 28, 283-290	5
1440	Reassessing <i>Escherichia coli</i> as a cell factory for biofuel production. 2017 , 45, 92-103	39
1439	CRISPR-Cas9 cleavage efficiency correlates strongly with target-sgRNA folding stability: from physical mechanism to off-target assessment. 2017 , 7, 143	43
1438	Functional interrogation of non-coding DNA through CRISPR genome editing. 2017 , 121-122, 118-129	19
1437	Live cell imaging of low- and non-repetitive chromosome loci using CRISPR-Cas9. 2017 , 8, 14725	139
1436	Transcriptional reprogramming in yeast using dCas9 and combinatorial gRNA strategies. 2017 , 16, 46	75
1435	CRISPR/Cas9-mediated genome editing in plants. 2017 , 121-122, 94-102	39
1434	Genome engineering for breaking barriers in lignocellulosic bioethanol production. 2017 , 74, 1080-1107	26
1433	Introduction to Telomeres and Telomerase. 2017 , 1587, 1-13	

1432	Conceptual and methodological advances for holobiont research. 2017 , 9, 30-32	2
1431	Genome editing as a tool to achieve the crop ideotype and de novo domestication of wild relatives: Case study in tomato. 2017 , 256, 120-130	85
1430	Inhibition of CRISPR-Cas9 with Bacteriophage Proteins. <i>Cell</i> , 2017 , 168, 150-158.e10	56.2 310
1429	Genome engineering in human pluripotent stem cells. 2017 , 15, 56-67	1
1428	Robust Synthetic Circuits for Two-Dimensional Control of Gene Expression in Yeast. 2017 , 6, 545-554	41
1427	Probing the structural dynamics of the CRISPR-Cas9 RNA-guided DNA-cleavage system by coarse-grained modeling. 2017 , 85, 342-353	14
1426	Genome-wide mapping of mutations at single-nucleotide resolution for protein, metabolic and genome engineering. 2017 , 35, 48-55	217
1425	The application of powerful promoters to enhance gene expression in industrial microorganisms. 2017 , 33, 23	21
1424	Molecular basis, applications and challenges of CRISPR/Cas9: a continuously evolving tool for genome editing. 2017 , 16, 211-216	8
1423	CRISPR-Cas9 : la révolution dans l'édition du génome dans les maladies rhumatologiques. 2017 , 84, 1-5	
1422	Using the CRISPR/Cas9 system to understand neuropeptide biology and regulation. 2017 , 64, 19-25	2
1421	CRISPRi-based genome-scale identification of functional long noncoding RNA loci in human cells. 2017 , 355,	404
1420	Gene delivery ability of polyethylenimine and polyethylene glycol dual-functionalized nanographene oxide in 11 different cell lines. 2017 , 4, 170822	13
1419	Control of Adipogenic Differentiation in Mesenchymal Stem Cells via Endogenous Gene Activation Using CRISPR-Cas9. 2017 , 6, 2191-2197	20
1418	Lipid nanoparticle-mediated efficient delivery of CRISPR/Cas9 for tumor therapy. 2017 , 9, e441-e441	83
1417	An ApiAP2 member regulates expression of clonally variant genes of the human malaria parasite <i>Plasmodium falciparum</i> . 2017 , 7, 14042	23
1416	Chemical genomics reveals mechanistic hypotheses for uncharacterized bioactive molecules in bacteria. 2017 , 39, 42-47	6
1415	Systematic analysis of human telomeric dysfunction using inducible telosome/shelterin CRISPR/Cas9 knockout cells. 2017 , 3, 17034	31

1414	Tissue-specific genome editing of laminA/C in the posterior silk glands of <i>Bombyx mori</i> . 2017 , 44, 451-459	10
1413	Molecular tools for gene manipulation in filamentous fungi. 2017 , 101, 8063-8075	38
1412	Wheat Biotechnology. 2017 ,	4
1411	CRISPR-mediated Ophthalmic Genome Surgery. 2017 , 5, 199-206	10
1410	High-Throughput Approaches to Pinpoint Function within the Noncoding Genome. 2017 , 68, 44-59	37
1409	Methods and Applications of CRISPR-Mediated Base Editing in Eukaryotic Genomes. 2017 , 68, 26-43	160
1408	CRISPR/Cas9-Based Engineering of the Epigenome. 2017 , 21, 431-447	147
1407	RNA Metabolism and Gene Expression in Archaea. 2017 ,	3
1406	Genome editing technologies to fight infectious diseases. 2017 , 15, 1001-1013	9
1405	CRISPR/Cas9 Genome-Editing System in Human Stem Cells: Current Status and Future Prospects. 2017 , 9, 230-241	61
1404	Transcription control engineering and applications in synthetic biology. 2017 , 2, 176-191	53
1403	Functional Genomics. 2017 ,	3
1402	Establishment of the CRISPR/Cas9 System for Targeted Gene Disruption and Gene Tagging. 2017 , 1654, 165-176	3
1401	Gene Editing and Human Pluripotent Stem Cells: Tools for Advancing Diabetes Disease Modeling and Beta-Cell Development. 2017 , 17, 116	9
1400	Logic Synthesis of Recombinase-Based Genetic Circuits. 2017 , 7, 12873	8
1399	Engineering nucleic acid structures for programmable molecular circuitry and intracellular biocomputation. 2017 , 9, 1056-1067	186
1398	Genome Editing in Neurosciences. 2017 ,	2
1397	A metabolic pathway for catabolizing levulinic acid in bacteria. 2017 , 2, 1624-1634	44

1396	How do lncRNAs regulate transcription?. 2017 , 3, eaao2110	338
1395	Multiplex Enhancer Interference Reveals Collaborative Control of Gene Regulation by Estrogen Receptor Bound Enhancers. 2017 , 5, 333-344.e5	47
1394	Targeted Delivery of CRISPR/Cas9-Mediated Cancer Gene Therapy via Liposome-Templated Hydrogel Nanoparticles. 2017 , 27, 1703036	136
1393	Advancing the design and delivery of CRISPR antimicrobials. 2017 , 4, 57-64	16
1392	Gene Expression Knockdown by Modulating Synthetic Small RNA Expression in Escherichia coli. 2017 , 5, 418-426.e4	57
1391	Impeding Transcription of Expanded Microsatellite Repeats by Deactivated Cas9. 2017 , 68, 479-490.e5	73
1390	Computational design of small transcription activating RNAs for versatile and dynamic gene regulation. 2017 , 8, 1051	80
1389	YaliBricks, a versatile genetic toolkit for streamlined and rapid pathway engineering in. 2017 , 5, 68-77	77
1388	Dynamic pathway regulation: recent advances and methods of construction. 2017 , 41, 28-35	62
1387	A Broad-Spectrum Inhibitor of CRISPR-Cas9. <i>Cell</i> , 2017 , 170, 1224-1233.e15	56.2 145
1386	The Timing of Transcriptional Regulation in Synthetic Gene Circuits. 2017 , 6, 1996-2002	16
1385	CRISPRi repression of nonhomologous end-joining for enhanced genome engineering via homologous recombination in <i>Yarrowia lipolytica</i> . 2017 , 114, 2896-2906	73
1384	Long Non Coding RNA Biology. 2017 ,	9
1383	Emerging Gene Therapies for Genetic Hearing Loss. 2017 , 18, 649-670	55
1382	Combining CRISPR and CRISPRi Systems for Metabolic Engineering of <i>E. coli</i> and 1,4-BDO Biosynthesis. 2017 , 6, 2350-2361	57
1381	Rapid and reversible epigenome editing by endogenous chromatin regulators. 2017 , 8, 560	88
1380	Edited course of biomedical research: leaping forward with CRISPR. 2017 , 125, 258-265	5
1379	Hyper-O-GlcNAcylation induces cisplatin resistance via regulation of p53 and c-Myc in human lung carcinoma. 2017 , 7, 10607	17

1378	APOBEC: From mutator to editor. 2017 , 44, 423-437	37
1377	The emerging molecular biology toolbox for the study of long noncoding RNA biology. 2017 , 9, 1317-1327	21
1376	Genome and metabolic engineering in non-conventional yeasts: Current advances and applications. 2017 , 2, 198-207	79
1375	Fundamental CRISPR-Cas9 tools and current applications in microbial systems. 2017 , 2, 219-225	27
1374	Design and Assembly of CRISPR/Cas9 Reagents for Gene Knockout, Targeted Insertion, and Replacement in Wheat. 2017 , 1679, 187-212	6
1373	Transposons As Tools for Functional Genomics in Vertebrate Models. 2017 , 33, 784-801	39
1372	Using CRISPR-Cas systems as antimicrobials. 2017 , 37, 155-160	65
1371	Enabling tools for high-throughput detection of metabolites: Metabolic engineering and directed evolution applications. 2017 , 35, 950-970	80
1370	Beyond Native Cas9: Manipulating Genomic Information and Function. 2017 , 35, 983-996	54
1369	The Discovery, Mechanisms, and Evolutionary Impact of Anti-CRISPRs. 2017 , 4, 37-59	114
1368	A CRISPR/Cas9 guidance RNA screen platform for HIV provirus disruption and HIV/AIDS gene therapy in astrocytes. 2017 , 7, 5955	17
1367	Targeted DNA methylation in human cells using engineered dCas9-methyltransferases. 2017 , 7, 6732	51
1366	Prioritising Causal Genes at Type 2 Diabetes Risk Loci. 2017 , 17, 76	21
1365	Genetic manipulations in crops: Challenges and opportunities. 2017 , 109, 494-505	37
1364	Evaluating Synthetic Activation and Repression of Neuropsychiatric-Related Genes in hiPSC-Derived NPCs, Neurons, and Astrocytes. 2017 , 9, 615-628	46
1363	Epigenome profiling and editing of neocortical progenitor cells during development. 2017 , 36, 2642-2658	60
1362	Genome editing in crop improvement: Present scenario and future prospects. 2017 , 31, 453-559	42
1361	Sugarcane Biotechnology: Challenges and Prospects. 2017 ,	3

1360	Recent advances in CRISPR/Cas mediated genome editing for crop improvement. 2017 , 11, 193-207	24
1359	CRISPR-Cas9 System as a Genome Editing Tool in Sugarcane. 2017 , 155-172	3
1358	CRISPR-Cas9-mediated functional dissection of 3'-UTRs. 2017 , 45, 10800-10810	21
1357	Targeted genome editing in <i>Caenorhabditis elegans</i> using CRISPR/Cas9. 2017 , 6, e287	10
1356	Technological Developments in lncRNA Biology. 2017 , 1008, 283-323	195
1355	Mammalian Synthetic Promoters. 2017 ,	3
1354	Computational Sequence Design with R2oDNA Designer. 2017 , 1651, 249-262	9
1353	The epigenome editors: How tools such as CRISPR offer new details about epigenetics. 2017 , 23, 900-903	6
1352	Suppression of HBV replication by the expression of nickase- and nuclease dead-Cas9. 2017 , 7, 6122	11
1351	An all-in-one UniSam vector system for efficient gene activation. 2017 , 7, 6394	6
1350	Recent Developments on Genetic Engineering of Microalgae for Biofuels and Bio-Based Chemicals. 2017 , 12, 1600644	109
1349	Chemically Controlled Epigenome Editing through an Inducible dCas9 System. 2017 , 139, 11337-11340	41
1348	Engineering cell signaling using tunable CRISPR-Cpf1-based transcription factors. 2017 , 8, 2095	72
1347	A small cassette enables conditional gene inactivation by CRISPR/Cas9. 2017 , 7, 16770	8
1346	In Vivo Target Gene Activation via CRISPR/Cas9-Mediated Trans-epigenetic Modulation. <i>Cell</i> , 2017 , 171, 1495-1507.e15	56.2 250
1345	Programmable DNA looping using engineered bivalent dCas9 complexes. 2017 , 8, 1628	43
1344	Techniques and strategies employing engineered transcription factors. 2017 , 4, 152-162	0
1343	Combinatorial metabolic engineering using an orthogonal tri-functional CRISPR system. 2017 , 8, 1688	164

1342	CRISPR-Cas9 for Drug Discovery in Oncology. 2017 , 61-85	1
1341	Live Cell Fluorescence Microscopy to Observe Essential Processes During Microbial Cell Growth. 2017 ,	13
1340	A potent Cas9-derived gene activator for plant and mammalian cells. 2017 , 3, 930-936	117
1339	Characterizing a thermostable Cas9 for bacterial genome editing and silencing. 2017 , 8, 1647	74
1338	Targeted Gene Editing in Human Pluripotent Stem Cells Using Site-Specific Nucleases. 2018 , 163, 169-186	4
1337	Genetic circuit characterization and debugging using RNA-seq. 2017 , 13, 952	53
1336	Precision Medicine, CRISPR, and Genome Engineering. 2017 ,	0
1335	From Reductionism to Holism: Toward a More Complete View of Development Through Genome Engineering. 2017 , 1016, 45-74	5
1334	A Transgenic Core Facility's Experience in Genome Editing Revolution. 2017 , 1016, 75-90	20
1333	CRISPR: From Prokaryotic Immune Systems to Plant Genome Editing Tools. 2017 , 1016, 101-120	1
1332	Optimization of CRISPR/Cas9 genome editing for loss-of-function in the early chick embryo. 2017 , 432, 86-97	48
1331	The new frontiers of synthetic biology. 2017 , 5, iv-v	
1330	The pigmented epithelium, a bright partner against photoreceptor degeneration. 2017 , 31, 203-215	10
1329	Functional roles of intrinsic disorder in CRISPR-associated protein Cas9. 2017 , 13, 1770-1780	4
1328	Synthetic lethality and cancer. 2017 , 18, 613-623	273
1327	Label-Free Dynamic Mass Redistribution and Bio-Impedance Methods for Drug Discovery. 2017 , 77, 9.24.1-9.24.2	
1326	A Novel Regulatory Mechanism of Smooth Muscle α -Actin Expression by NRG-1/circACTA2/miR-548f-5p Axis. 2017 , 121, 628-635	75
1325	Targeted DNA methylation in vivo using an engineered dCas9-MQ1 fusion protein. 2017 , 8, 16026	113

1324	Type II CRISPR/Cas9 approach in the oncological therapy. 2017 , 36, 80	11
1323	Switching dynein motors on and off. 2017 , 24, 557-559	3
1322	Chromatin-enriched lncRNAs: a novel class of enhancer RNAs. 2017 , 24, 556-557	10
1321	A convenient method to pre-screen candidate guide RNAs for CRISPR/Cas9 gene editing by NHEJ-mediated integration of a 'self-cleaving' GFP-expression plasmid. 2017 , 24, 609-621	15
1320	Air Pollution and the Epigenome: A Model Relationship for the Exploration of Toxicopigenetics. 2017 , 6, 18-25	7
1319	Effective gene editing by high-fidelity base editor 2 in mouse zygotes. 2017 , 8, 601-611	57
1318	Engineering synthetic optogenetic networks for biomedical applications. 2017 , 5, 111-123	1
1317	Generation and characterization of a human oral squamous carcinoma cell line SCC-9 with CRISPR/Cas9-mediated deletion of the p75 neurotrophin receptor. 2017 , 82, 223-232	10
1316	A decade of discovery: CRISPR functions and applications. 2017 , 2, 17092	169
1315	Omics approaches to study gene regulatory networks for development in echinoderms. 2017 , 16, 299-308	8
1314	Insulated transcriptional elements enable precise design of genetic circuits. 2017 , 8, 52	44
1313	Mutation site and context dependent effects of ESR1 mutation in genome-edited breast cancer cell models. 2017 , 19, 60	80
1312	Stabilization of Foxp3 expression by CRISPR-dCas9-based epigenome editing in mouse primary T cells. 2017 , 10, 24	68
1311	Synthetic biology-inspired therapies for metabolic diseases. 2017 , 47, 59-66	17
1310	Aptazyme-embedded guide RNAs enable ligand-responsive genome editing and transcriptional activation. 2017 , 8, 15939	127
1309	Multiplexed Gene Editing and Protein Overexpression Using a Viral Vector. 2017 , 175, 23-35	50
1308	Recent advances in systems metabolic engineering tools and strategies. 2017 , 47, 67-82	149
1307	Comparative analysis of chimeric ZFP-, TALE- and Cas9-piggyBac transposases for integration into a single locus in human cells. 2017 , 45, 8411-8422	28

1306	Time for Genome Editing: Next-Generation Attenuated Malaria Parasites. 2017 , 33, 202-213	18
1305	The discovery and development of the CRISPR system in applications in genome manipulation. 2017 , 95, 203-210	9
1304	CRISPR/Cas9 in zebrafish: an efficient combination for human genetic diseases modeling. 2017 , 136, 1-12	68
1303	CRISPR-Cas9: A revolution in genome editing in rheumatic diseases. 2017 , 84, 1-4	3
1302	Eukaryotic Transcriptional and Post-Transcriptional Gene Expression Regulation. 2017 ,	1
1301	Using an Inducible CRISPR-dCas9-KRAB Effector System to Dissect Transcriptional Regulation in Human Embryonic Stem Cells. 2017 , 1507, 221-233	20
1300	CRISPR-Based Technologies for the Manipulation of Eukaryotic Genomes. <i>Cell</i> , 2017 , 168, 20-36	56.2 545
1299	CRISPR/Cas9 in allergic and immunologic diseases. 2017 , 13, 5-9	5
1298	A Precision Medicine Approach to the Rescue of Function on Malignant Calmodulinopathic Long-QT Syndrome. 2017 , 120, 39-48	93
1297	Gene Editing and Genetic Lung Disease. Basic Research Meets Therapeutic Application. 2017 , 56, 283-290	22
1296	Adaptation of CRISPR nucleases for eukaryotic applications. 2017 , 532, 90-94	7
1295	Causal role of histone acetylations in enhancer function. 2017 , 8, 40-47	35
1294	Efficient Screening of CRISPR/Cas9-Induced Events in Drosophila Using a Co-CRISPR Strategy. 2017 , 7, 87-93	26
1293	Exploring the potential of genome editing CRISPR-Cas9 technology. 2017 , 599, 1-18	90
1292	CRISPR Perturbation of Gene Expression Alters Bacterial Fitness under Stress and Reveals Underlying Epistatic Constraints. 2017 , 6, 94-107	22
1291	A review of genetic engineering biotechnologies for enhanced chronic wound healing. 2017 , 26, 179-185	13
1290	Enhancer RNAs. 2017 ,	1
1289	Targeted Gene Activation Using RNA-Guided Nucleases. 2017 , 1468, 235-50	4

1288	Controlling Citrate Synthase Expression by CRISPR/Cas9 Genome Editing for n-Butanol Production in Escherichia coli. 2017 , 6, 182-189	42
1287	Synthetic Lethality in Cancer Therapeutics. 2017 , 1, 141-161	23
1286	CRISPR/Cas9 Immune System as a Tool for Genome Engineering. 2017 , 65, 233-240	59
1285	In Silico Meets In Vivo: Towards Computational CRISPR-Based sgRNA Design. 2017 , 35, 12-21	71
1284	Efficient targeted DNA methylation with chimeric dCas9-Dnmt3a-Dnmt3L methyltransferase. 2017 , 45, 1703-1713	152
1283	CRISPR/Cas9-based genome editing for simultaneous interference with gene expression and protein stability. 2017 , 45, e171	13
1282	Short body length phenotype is compensated by the upregulation of nidogen family members in a deleterious nid1a mutation of zebrafish. 2017 , 44, 553-556	26
1281	Increasing the permeability of Escherichia coli using MAC13243. 2017 , 7, 17629	45
1280	In vivo genome editing improves motor function and extends survival in a mouse model of ALS. 2017 , 3, eaar3952	80
1279	Dual direction CRISPR transcriptional regulation screening uncovers gene networks driving drug resistance. 2017 , 7, 17693	29
1278	Role of the CRISPR system in controlling gene transcription and monitoring cell fate (Review). 2018 , 17, 1421-1427	12
1277	CRISPR-Cas-Mediated Gene Silencing Reveals RacR To Be a Negative Regulator of YdaS and YdaT Toxins in K-12. 2017 , 2,	11
1276	Distributed biotin-streptavidin transcription roadblocks for mapping cotranscriptional RNA folding. 2017 , 45, e109	22
1275	genotyping of a pooled strain library after characterizing complex phenotypes. 2017 , 13, 947	30
1274	An ultrasensitive motif for robust closed loop control of biomolecular systems. 2017 ,	4
1273	A cautionary tale of sense-antisense gene pairs: independent regulation despite inverse correlation of expression. 2017 , 45, 12496-12508	49
1272	Design of a bistable network using the CRISPR/Cas system. 2017 ,	3
1271	CRISPR/Cas9: A Practical Approach in Date Palm Genome Editing. 2017 , 8, 1469	24

1270	Gene Editing and Crop Improvement Using CRISPR-Cas9 System. 2017 , 8, 1932	177
1269	Correction of Monogenic and Common Retinal Disorders with Gene Therapy. 2017 , 8,	29
1268	New Directions for Epigenetics: Application of Engineered DNA-Binding Molecules to Locus-Specific Epigenetic Research. 2017 , 635-652	2
1267	CRISPR/Cas9. 2017 ,	
1266	CRISPR-based tools for plant genome engineering. 2017 , 1, 135-149	14
1265	Elucidating the Role of Host Long Non-Coding RNA during Viral Infection: Challenges and Paths Forward. 2017 , 5,	8
1264	Use of Crispr/Cas9 for Development of Disease Resistant Cultivars in Plant Breeding. 2017 , 5, 403-409	3
1263	Synthetic Promoters and Transcription Factors for Heterologous Protein Expression in. 2017 , 5, 63	26
1262	Synthetic Gene Expression Circuits for Designing Precision Tools in Oncology. 2017 , 5, 77	5
1261	Opportunities for CRISPR/Cas9 Gene Editing in Retinal Regeneration Research. 2017 , 5, 99	8
1260	How to Train a Cell-Cutting-Edge Molecular Tools. 2017 , 5, 12	7
1259	Genetic Regulation of Virulence and Antibiotic Resistance in <i>Acinetobacter baumannii</i> . 2016 , 8,	48
1258	Genome Editing Tools in Plants. 2017 , 8,	42
1257	Removal of Integrated Hepatitis B Virus DNA Using CRISPR-Cas9. 2017 , 7, 91	62
1256	CRISPR Interference (CRISPRi) Inhibition of luxS Gene Expression in : An Approach to Inhibit Biofilm. 2017 , 7, 214	37
1255	Taming Parasites by Tailoring Them. 2017 , 7, 292	9
1254	CRISPRi Induced Suppression of Fimbriae Gene () of a Uropathogenic : An Approach to Inhibit Microbial Biofilms. 2017 , 8, 1552	17
1253	A Novel and Efficient Method for Bacteria Genome Editing Employing both CRISPR/Cas9 and an Antibiotic Resistance Cassette. 2017 , 8, 812	25

1252	Systematic Optimization of Protein Secretory Pathways in to Increase Expression of Hepatitis B Small Antigen. 2017 , 8, 875	9
1251	Cas9 Nickase-Assisted RNA Repression Enables Stable and Efficient Manipulation of Essential Metabolic Genes in. 2017 , 8, 1744	14
1250	Transcriptomic Changes in Response to Putrescine Production in Metabolically Engineered. 2017 , 8, 1987	11
1249	Challenges and Advances for Genetic Engineering of Non-model Bacteria and Uses in Consolidated Bioprocessing. 2017 , 8, 2060	46
1248	The Implications and Future Perspectives of Nanomedicine for Cancer Stem Cell Targeted Therapies. 2017 , 4, 52	15
1247	The Impact of CRISPR/Cas9 Technology on Cardiac Research: From Disease Modelling to Therapeutic Approaches. 2017 , 2017, 8960236	19
1246	Transgenesis and Gene Edition in Mammals. 2017 ,	
1245	CRISPR Libraries and Screening. 2017 , 152, 69-82	7
1244	When Long Noncoding RNAs Meet Genome Editing in Pluripotent Stem Cells. 2017 , 2017, 3250624	1
1243	CRISPRi is not strand-specific at all loci and redefines the transcriptional landscape. 2017 , 6,	19
1242	[CRISPR-Cas systems as weapons against pathogenic bacteria]. 2017 , 211, 265-270	0
1241	CRISPR History: Discovery, Characterization, and Prosperity. 2017 , 152, 1-21	12
1240	Psp1/p52 regulates posterior Hoxa genes through activation of lncRNA Hottip. 2017 , 13, e1006677	19
1239	Integrative analysis of genomic alterations in triple-negative breast cancer in association with homologous recombination deficiency. 2017 , 13, e1006853	32
1238	CRISPR interference-guided multiplex repression of endogenous competing pathway genes for redirecting metabolic flux in Escherichia coli. 2017 , 16, 188	46
1237	Development of a CRISPR/Cas9 genome editing toolbox for Corynebacterium glutamicum. 2017 , 16, 205	68
1236	Process optimization for enhancing production of cis-4-hydroxy-L-proline by engineered Escherichia coli. 2017 , 16, 210	6
1235	A highly efficient ligation-independent cloning system for CRISPR/Cas9 based genome editing in plants. 2017 , 13, 86	9

1234	Construction of an easy-to-use CRISPR-Cas9 system by patching a newly designed EXIT circuit. 2017 , 11, 32	7
1233	Crossing enhanced and high fidelity SpCas9 nucleases to optimize specificity and cleavage. 2017 , 18, 190	72
1232	Current status and perspectives of genome editing technology for microalgae. 2017 , 10, 267	65
1231	CRISPR Cas9-guided chromatin immunoprecipitation identifies miR483 as an epigenetic modulator of IGF2 imprinting in tumors. 2017 , 8, 34177-34190	21
1230	The Smart Programmable CRISPR Technology: A Next Generation Genome Editing Tool for Investigators. 2017 , 18, 1653-1663	7
1229	Targeted delivery of CRISPR/Cas9 to prostate cancer by modified gRNA using a flexible aptamer-cationic liposome. 2017 , 8, 9375-9387	65
1228	Origins and Applications of CRISPR-Mediated Genome Editing. 2016 , 31, 2-5	3
1227	. 2017 , 6,	44
1226	Advanced Gene Manipulation Methods for Stem Cell Theranostics. 2017 , 7, 2775-2793	9
1225	CRISPR-Cas Genome Surgery in Ophthalmology. 2017 , 6, 13	12
1224	Recent developments in genome editing for potential use in plants. 2017 , 10,	3
1223	Biofuels: Greenhouse Gas Mitigation and Global Warming. 2018 ,	9
1222	New and emerging uses of CRISPR/Cas9 to genetically manipulate apicomplexan parasites. 2018 , 145, 1119-1126	20
1221	Engineering cell wall synthesis mechanism for enhanced PHB accumulation in E. coli. 2018 , 45, 32-42	51
1220	Efficient and Scalable Precision Genome Editing in through Conditional Recombineering and CRISPR/Cas9-Mediated Counterselection. 2018 , 9,	29
1219	Exploiting endogenous CRISPR-Cas system for multiplex genome editing in Clostridium tyrobutyricum and engineer the strain for high-level butanol production. 2018 , 47, 49-59	123
1218	Construction of synthetic T7 RNA polymerase expression systems. 2018 , 143, 110-120	11
1217	Editing the Epigenome: Overview, Open Questions, and Directions of Future Development. 2018 , 1767, 3-18	14

1216	Transgenic mouse lines expressing the 3xFLAG-dCas9 protein for enChIP analysis. 2018 , 23, 318-325	8
1215	Assessing sufficiency and necessity of enhancer activities for gene expression and the mechanisms of transcription activation. 2018 , 32, 202-223	103
1214	Mapping a functional cancer genome atlas of tumor suppressors in mouse liver using AAV-CRISPR-mediated direct in vivo screening. 2018 , 4, eao5508	37
1213	Rewiring Calcium Signaling for Precise Transcriptional Reprogramming. 2018 , 7, 814-821	27
1212	Engineering and Application of Pluripotent Stem Cells. 2018 ,	
1211	CRISPR-based methods for high-throughput annotation of regulatory DNA. 2018 , 52, 32-41	11
1210	Diagnosis and therapy with CRISPR advanced CRISPR based tools for point of care diagnostics and early therapies. 2018 , 656, 22-29	19
1209	CRISPR-Cas9-Mediated Silencing of CD44 in Human Highly Metastatic Osteosarcoma Cells. 2018 , 46, 1218-1230	20
1208	The LINC01138 drives malignancies via activating arginine methyltransferase 5 in hepatocellular carcinoma. 2018 , 9, 1572	116
1207	Escherichia coli as a host for metabolic engineering. 2018 , 50, 16-46	153
1206	The potential of CRISPR/Cas9 genome editing for the study and treatment of intervertebral disc pathologies. 2018 , 1, e1003	16
1205	Computational Re-design of Synthetic Genetic Oscillators for Independent Amplitude and Frequency Modulation. 2018 , 6, 508-520.e5	21
1204	Metabolic engineering of Pichia pastoris. 2018 , 50, 2-15	99
1203	AldB controls persister formation in Escherichia coli depending on environmental stress. 2018 , 62, 299-309	5
1202	Modular Ligation Extension of Guide RNA Operons (LEGO) for Multiplexed dCas9 Regulation of Metabolic Pathways in Saccharomyces cerevisiae. 2018 , 13, e1700582	16
1201	Non-viral delivery systems for CRISPR/Cas9-based genome editing: Challenges and opportunities. 2018 , 171, 207-218	180
1200	CRISPR-Cas9; an efficient tool for precise plant genome editing. 2018 , 39, 47-52	5
1199	CRISPR-Cas9: A Precise Approach to Genome Engineering. 2018 , 52, 701-707	3

1198	Quantitative Characterization of Translational Riboregulators Using an in Vitro Transcription-Translation System. 2018 , 7, 1269-1278	10
1197	Targeting Alzheimer's disease with gene and cell therapies. 2018 , 284, 2-36	23
1196	CRISPyS: Optimal sgRNA Design for Editing Multiple Members of a Gene Family Using the CRISPR System. 2018 , 430, 2184-2195	10
1195	CRISPR/Cas approach: A new way of looking at plant-abiotic interactions. 2018 , 224-225, 156-162	44
1194	Evolutionary engineering of industrial microorganisms-strategies and applications. 2018 , 102, 4615-4627	28
1193	Regulated Expression of sgRNAs Tunes CRISPRi in E. coli. 2018 , 13, e1800069	30
1192	Rapid identification of unknown carboxyl esterase activity in Corynebacterium glutamicum using RNA-guided CRISPR interference. 2018 , 114, 63-68	14
1191	Applied RNA Bioscience. 2018 ,	1
1190	High-throughput genetic screens using CRISPR-Cas9 system. 2018 , 41, 875-884	15
1189	Genome-wide determination of on-target and off-target characteristics for RNA-guided DNA methylation by dCas9 methyltransferases. 2018 , 7, 1-19	43
1188	Review of CRISPR/Cas9 sgRNA Design Tools. 2018 , 10, 455-465	113
1187	Stochastic expression of lactate dehydrogenase A induces Escherichia coli persister formation. 2018 , 126, 30-37	7
1186	Phenotypic novelty by CRISPR in plants. 2018 , 435, 170-175	15
1185	Hijacking CRISPR-Cas for high-throughput bacterial metabolic engineering: advances and prospects. 2018 , 50, 146-157	46
1184	The multiplexed CRISPR targeting platforms. 2018 , 28, 53-61	5
1183	Hallmarks of cancer: The CRISPR generation. 2018 , 93, 10-18	42
1182	Staphylococcal Osteomyelitis: Disease Progression, Treatment Challenges, and Future Directions. 2018 , 31,	127
1181	Molecular Toolkit for Gene Expression Control and Genome Modification in Rhodococcus opacus PD630. 2018 , 7, 727-738	46

1180	Exosome-Liposome Hybrid Nanoparticles Deliver CRISPR/Cas9 System in MSCs. 2018 , 5, 1700611	212
1179	A Cleavage-Responsive Stem-Loop Hairpin for Assaying Guide RNA Activity. 2018 , 13, 461-466	2
1178	Progress of CRISPR-Cas Based Genome Editing in Photosynthetic Microbes. 2018 , 13, e1700591	29
1177	Modulating Gene Expression in Epstein-Barr Virus (EBV)-Positive B Cell Lines with CRISPRa and CRISPRi. 2018 , 121, 31.13.1-31.13.18	4
1176	Metabolic evolution and a comparative omics analysis of <i>Corynebacterium glutamicum</i> for putrescine production. 2018 , 45, 123-139	27
1175	Single plasmid systems for inducible dual protein expression and for CRISPR-Cas9/CRISPRi gene regulation in lactic acid bacterium <i>Lactococcus lactis</i> . 2018 , 8, 1009	57
1174	The evolution of CRISPR/Cas9 and their cousins: hope or hype?. 2018 , 40, 465-477	15
1173	CRISPR/Cas9: A tool for immunological research. 2018 , 48, 576-583	12
1172	Epigenetic editing: How cutting-edge targeted epigenetic modification might provide novel avenues for autoimmune disease therapy. 2018 , 196, 49-58	20
1171	Multilevel Regulation of Bacterial Gene Expression with the Combined STAR and Antisense RNA System. 2018 , 7, 853-865	19
1170	Genomic tools for behavioural ecologists to understand repeatable individual differences in behaviour. 2018 , 2, 944-955	77
1169	Advancing Metabolic Engineering of <i>Saccharomyces cerevisiae</i> Using the CRISPR/Cas System. 2018 , 13, e1700601	34
1168	Lignocellulosic Feedstock Improvement for Biofuel Production Through Conventional Breeding and Biotechnology. 2018 , 107-140	3
1167	Synthetic Biology: Immunotherapy by Design. 2018 , 20, 95-118	21
1166	Glycolysis and Its Metabolic Engineering Applications. 2018 , 1-33	0
1165	A sigma factor toolbox for orthogonal gene expression in <i>Escherichia coli</i> . 2018 , 46, 2133-2144	41
1164	History of CRISPR-Cas from Encounter with a Mysterious Repeated Sequence to Genome Editing Technology. 2018 , 200,	149
1163	Advancing biotechnology with CRISPR/Cas9: recent applications and patent landscape. 2018 , 45, 467-480	18

1162	Effect of ECM2 expression on bovine skeletal muscle-derived satellite cell differentiation. 2018 , 42, 525-532	8
1161	Wheat genome editing expedited by efficient transformation techniques: Progress and perspectives. 2018 , 6, 22-31	19
1160	CRISPR genome editing and its medical applications. 2018 , 32, 286-292	10
1159	CRISPR Approaches to Small Molecule Target Identification. 2018 , 13, 366-375	41
1158	Graphene oxide-mediated Cas9/sgRNA delivery for efficient genome editing. 2018 , 10, 1063-1071	93
1157	Gene therapy comes of age. 2018 , 359,	598
1156	Epigenetic Targeting of Granulin in Hepatoma Cells by Synthetic CRISPR dCas9 Epi-suppressors. 2018 , 11, 23-33	35
1155	Dual gene activation and knockout screen reveals directional dependencies in genetic networks. 2018 , 36, 170-178	87
1154	In vivo simultaneous transcriptional activation of multiple genes in the brain using CRISPR-dCas9-activator transgenic mice. 2018 , 21, 440-446	124
1153	Advances in Engineering the Fly Genome with the CRISPR-Cas System. 2018 , 208, 1-18	83
1152	Systematic and synthetic approaches to rewire regulatory networks. 2018 , 8, 90-96	6
1151	A Robust CRISPR Interference Gene Repression System in Pseudomonas. 2018 , 200,	59
1150	Split Cas9, Not Hairs - Advancing the Therapeutic Index of CRISPR Technology. 2018 , 13, e1700432	19
1149	Rapidly moving new bacteria to model-organism status. 2018 , 51, 116-122	19
1148	Design rules of synthetic non-coding RNAs in bacteria. 2018 , 143, 58-69	32
1147	Implementing CRISPR-Cas technologies in conventional and non-conventional yeasts: Current state and future prospects. 2018 , 36, 641-665	83
1146	Application of CRISPR Interference for Metabolic Engineering of the Heterocyst-Forming Multicellular Cyanobacterium Anabaena sp. PCC 7120. 2018 , 59, 119-127	36
1145	Rapid and Scalable Characterization of CRISPR Technologies Using an E. coli Cell-Free Transcription-Translation System. 2018 , 69, 146-157.e3	117

1144	Identifying Novel Enhancer Elements with CRISPR-Based Screens. 2018 , 13, 326-332	16
1143	A protocol for custom CRISPR Cas9 donor vector construction to truncate genes in mammalian cells using pcDNA3 backbone. 2018 , 19, 3	3
1142	CRISPR/Cas9: the Jedi against the dark empire of diseases. 2018 , 25, 29	14
1141	Engineering CRISPR interference system in <i>Klebsiella pneumoniae</i> for attenuating lactic acid synthesis. 2018 , 17, 56	18
1140	Gene repression via multiplex gRNA strategy in <i>Y. lipolytica</i> . 2018 , 17, 62	42
1139	Toward tunable dynamic repression using CRISPRi. 2018 , 13, e1800152	3
1138	DNA Methylation and Psychiatric Disorders. 2018 , 157, 175-232	17
1137	Harnessing "A Billion Years of Experimentation": The Ongoing Exploration and Exploitation of CRISPR-Cas Immune Systems. 2018 , 1, 141-158	32
1136	Metabolic engineering to enhance heterologous production of hyaluronic acid in <i>Bacillus subtilis</i> . 2018 , 47, 401-413	47
1135	RNA-guided transcriptional silencing in vivo with <i>S. aureus</i> CRISPR-Cas9 repressors. 2018 , 9, 1674	91
1134	In vivo methods for acute modulation of gene expression in the central nervous system. 2018 , 168, 69-85	15
1133	CRISPR interference-mediated metabolic engineering of <i>Corynebacterium glutamicum</i> for homo-butyrate production. 2018 , 115, 2067-2074	21
1132	Mathematical Modeling of RNA-Based Architectures for Closed Loop Control of Gene Expression. 2018 , 7, 1219-1228	29
1131	CRISPR-based genomic tools for the manipulation of genetically intractable microorganisms. 2018 , 16, 333-339	68
1130	Synthetic RNA Scaffolds for Spatial Engineering in Cells. 2018 , 261-278	0
1129	Cancer CRISPR Screens In Vivo. 2018 , 4, 349-358	38
1128	CRISPR Gene Editing in the Kidney. 2018 , 71, 874-883	24
1127	Applications of Gene Editing Technologies to Cellular Therapies. 2018 , 24, 1537-1545	2

1126	Enzymes for Industrial and Pharmaceutical Applications [From Individual to Population Level Impact. 2018 , 309-325	1
1125	Combinatorial pathway engineering using type I-E CRISPR interference. 2018 , 115, 1878-1883	17
1124	Chemical Inducible dCas9-Guided Editing of H3K27 Acetylation in Mammalian Cells. 2018 , 1767, 429-445	3
1123	CRISPR Knockouts in Ciona Embryos. 2018 , 1029, 141-152	8
1122	Dissecting the Functional Consequences of De Novo DNA Methylation Dynamics in Human Motor Neuron Differentiation and Physiology. 2018 , 22, 559-574.e9	36
1121	High-Level dCas9 Expression Induces Abnormal Cell Morphology in Escherichia coli. 2018 , 7, 1085-1094	87
1120	Off and back-on again: a tumor suppressor's tale. 2018 , 37, 3058-3069	7
1119	The physicist's guide to one of biotechnology's hottest new topics: CRISPR-Cas. 2018 , 15, 041002	10
1118	Platelet endothelial aggregation receptor-1 (PEAR1) is involved in C2C12 myoblast differentiation. 2018 , 366, 199-204	5
1117	Metabolic engineering of Escherichia coli for the production of isoprenoids. 2018 , 365,	36
1116	Rational Design of Mini-Cas9 for Transcriptional Activation. 2018 , 7, 978-985	28
1115	Transgenic Ascidians. 2018 ,	1
1114	Understanding Biological Regulation Through Synthetic Biology. 2018 , 47, 399-423	55
1113	Tuning dCas9's ability to block transcription enables robust, noiseless knockdown of bacterial genes. 2018 , 14, e7899	61
1112	Synthetic Transcription Activator-Like Effector-Activated Promoters for Coordinated Orthogonal Gene Expression in Plants. 2018 , 25-42	1
1111	Zinc Fingers, TALEs, and CRISPR Systems: A Comparison of Tools for Epigenome Editing. 2018 , 1767, 19-63	47
1110	Neuroepigenetic Editing. 2018 , 1767, 113-136	12
1109	Allele-Specific Epigenome Editing. 2018 , 1767, 137-146	3

1108	CRISPR/dCas9 Switch Systems for Temporal Transcriptional Control. 2018 , 1767, 167-185	12
1107	Transcription factor EGR1 promotes differentiation of bovine skeletal muscle satellite cells by regulating MyoG gene expression. 2018 , 233, 350-362	20
1106	Genome Engineering and Modification Toward Synthetic Biology for the Production of Antibiotics. 2018 , 38, 229-260	12
1105	CRISPR-engineered genome editing for the next generation neurological disease modeling. 2018 , 81, 459-467	8
1104	Gene therapy and editing: Novel potential treatments for neuronal channelopathies. 2018 , 132, 108-117	20
1103	Recent Advances in CRISPR-Cas9 Genome Editing Technology for Biological and Biomedical Investigations. 2018 , 119, 81-94	56
1102	Prokaryotic Argonaute proteins: novel genome-editing tools?. 2018 , 16, 5-11	60
1101	A technological and regulatory outlook on CRISPR crop editing. 2018 , 119, 1291-1298	37
1100	Engineering Diagnostic and Therapeutic Gut Bacteria. 2017 , 5,	36
1099	Enhanced guide-RNA design and targeting analysis for precise CRISPR genome editing of single and consortia of industrially relevant and non-model organisms. 2018 , 34, 16-23	24
1098	CRISPR/Cas9 and TALENs generate heritable mutations for genes involved in small RNA processing of <i>Glycine max</i> and <i>Medicago truncatula</i> . 2018 , 16, 1125-1137	77
1097	Recent developments in genome editing and applications in plant breeding. 2018 , 137, 1-9	31
1096	PICKLES: the database of pooled in-vitro CRISPR knockout library essentiality screens. 2018 , 46, D776-D780	51
1095	CRISPR/Cas9-mediated noncoding RNA editing in human cancers. 2018 , 15, 35-43	49
1094	Updated summary of genome editing technology in human cultured cells linked to human genetics studies. 2018 , 63, 133-143	3
1093	CRISPRi and CRISPRa Screens in Mammalian Cells for Precision Biology and Medicine. 2018 , 13, 406-416	136
1092	Plant Gene Regulation Using Multiplex CRISPR-dCas9 Artificial Transcription Factors. 2018 , 1676, 197-214	10
1091	Genome Editing: Insights from Chemical Biology to Support Safe and Transformative Therapeutic Applications. 2018 , 13, 333-342	6

1090	Bioengineering Solutions for Manufacturing Challenges in CAR T Cells. 2018 , 13, 1700095	38
1089	Inducible CRISPR genome-editing tool: classifications and future trends. 2018 , 38, 573-586	18
1088	Engineering of cell membrane to enhance heterologous production of hyaluronic acid in <i>Bacillus subtilis</i> . 2018 , 115, 216-231	51
1087	A Single-Chain Photoswitchable CRISPR-Cas9 Architecture for Light-Inducible Gene Editing and Transcription. 2018 , 13, 443-448	75
1086	A CRISPR reimagining: New twists and turns of CRISPR beyond the genome-engineering revolution. 2018 , 119, 1299-1308	6
1085	Synthetic Metabolic Pathways. 2018 ,	2
1084	CRISPR-Cas9 Toolkit for Actinomycete Genome Editing. 2018 , 1671, 163-184	22
1083	Bacterial Genome Editing Strategy for Control of Transcription and Protein Stability. 2018 , 1671, 27-37	2
1082	Inhibition of -GlcNAcase Sensitizes Apoptosis and Reverses Bortezomib Resistance in Mantle Cell Lymphoma through Modification of Truncated Bid. 2018 , 17, 484-496	14
1081	Harnessing CRISPR/Cas systems for programmable transcriptional and post-transcriptional regulation. 2018 , 36, 295-310	60
1080	The Conspicuity of CRISPR-Cpf1 System as a Significant Breakthrough in Genome Editing. 2018 , 75, 107-115	28
1079	Metabolic Engineering of Microorganisms for the Production of Natural Compounds. 2018 , 2, 1700190	55
1078	The Future of Multiplexed Eukaryotic Genome Engineering. 2018 , 13, 313-325	27
1077	Diversion of the long-chain acyl-ACP pool in <i>Synechocystis</i> to fatty alcohols through CRISPRi repression of the essential phosphate acyltransferase PlsX. 2018 , 45, 59-66	80
1076	CRISPR-based strategies for studying regulatory elements and chromatin structure in mammalian gene control. 2018 , 29, 205-228	3
1075	Single-molecule live-cell imaging of bacterial DNA repair and damage tolerance. 2018 , 46, 23-35	6
1074	Engineering <i>Escherichia coli</i> for malate production by integrating modular pathway characterization with CRISPRi-guided multiplexed metabolic tuning. 2018 , 115, 661-672	55
1073	Targeted Gene Repression Using Novel Bifunctional Molecules to Harness Endogenous Histone Deacetylation Activity. 2018 , 7, 38-45	12

1072	Modeling Cancer in the CRISPR Era. 2018 , 2, 111-131	10
1071	Engineering Mammalian Designer Cells for the Treatment of Metabolic Diseases. 2018 , 13, e1700160	6
1070	Noncoding RNAs in the Regulation of Pluripotency and Reprogramming. 2018 , 14, 58-70	22
1069	CRISPR-Cas Expands Dynamic Range of Gene Expression From T7RNAP Promoters. 2018 , 13, e1700167	11
1068	Evaluating different DNA binding domains to modulate L1 ORF2p-driven site-specific retrotransposition events in human cells. 2018 , 642, 188-198	2
1067	CRISPR/Cas9 library screening for drug target discovery. 2018 , 63, 179-186	43
1066	Emerging Approaches for Spatiotemporal Control of Targeted Genome with Inducible CRISPR-Cas9. 2018 , 90, 429-439	26
1065	A heart-enriched antisense long non-coding RNA regulates the balance between cardiac and skeletal muscle triadin. 2018 , 1865, 247-258	11
1064	Cancer induction and suppression with transcriptional control and epigenome editing technologies. 2018 , 63, 187-194	5
1063	DNA molecular markers in plant breeding: current status and recent advancements in genomic selection and genome editing. 2018 , 32, 261-285	272
1062	Advances in Industrial Biotechnology Using CRISPR-Cas Systems. 2018 , 36, 134-146	125
1061	CRISPR-Cas based antiviral strategies against HIV-1. 2018 , 244, 321-332	55
1060	CRISPR editing in biological and biomedical investigation. 2018 , 233, 3875-3891	15
1059	Improvements in algal lipid production: a systems biology and gene editing approach. 2018 , 38, 369-385	51
1058	Genome modularity and synthetic biology: Engineering systems. 2018 , 132, 43-51	6
1057	A Model for Resource Competition in CRISPR-Mediated Gene Repression. 2018 ,	6
1056	. 2018 ,	3
1055	CRISPR/Cas9 System: A Breakthrough in Genome Editing. 2018 , 07,	2

1054 Bibliography. 425-441

1053 Recent advances in functional genome analysis. **2018**, 7, 10

1052 DNA methylation and de-methylation using hybrid site-targeting proteins. **2018**, 19, 187 29

1051 Genome-wide CRISPR-dCas9 screens in *E. coli* identify essential genes and phage host factors. **2018**, 14, e1007749 87

1050 SLIC-CAGE: high-resolution transcription start site mapping using nanogram-levels of total RNA. **2018**, 28, 1943-1956 17

1049 Class 2 CRISPR/Cas: an expanding biotechnology toolbox for and beyond genome editing. **2018**, 8, 59 34

1048 Genetic variant at coronary artery disease and ischemic stroke locus 1p32.2 regulates endothelial responses to hemodynamics. **2018**, 115, E11349-E11358 31

1047 The UniformMu Resource: Construction, Applications, and Opportunities. **2018**, 131-142 3

1046 Development of a multi-locus CRISPR gene drive system in budding yeast. **2018**, 8, 17277 19

1045 Modulating the expression of long non-coding RNAs for functional studies. **2018**, 19, 34

1044 [The CRISPR-Cas system: beyond genome editing]. **2018**, 34, 813-819 1

1043 dCas9-mediated Nanoelectrokinetic Direct Detection of Target Gene for Liquid Biopsy. **2018**, 18, 7642-7650 32

1042 Genome-wide CRISPR Screens in Primary Human T Cells Reveal Key Regulators of Immune Function. *Cell*, **2018**, 175, 1958-1971.e15 56.2 196

1041 Selective Enrichment of Slow-Growing Bacteria in a Metabolism-Wide CRISPRi Library with a TIMER Protein. **2018**, 7, 2775-2782 13

1040 Long Non-coding RNAs as Local Regulators of Pancreatic Islet Transcription Factor Genes. **2018**, 9, 524 11

1039 Active degradation of MarA controls coordination of its downstream targets. **2018**, 14, e1006634 7

1038 Biologic Tools for Genetic Engineering Chronic Wounds. **2018**, 27-35 1

1037 Molecular tools to create new strains for mosquito sexing and vector control. **2018**, 11, 645 6

1036	Optimized libraries for CRISPR-Cas9 genetic screens with multiple modalities. 2018 , 9, 5416	229
1035	Applications of CRISPR-Cas in Bioengineering, Biotechnology, and Translational Research. 2018 , 1, 379-404	7
1034	Engineering CRISPR-Cas9 RNA-Protein Complexes for Improved Function and Delivery. 2018 , 1, 367-378	6
1033	Genome Editing Using Crispr/Cas System: New Era Genetic Technology in Agriculture to Boost Crop Output. 2018 , 07,	2
1032	New Developments in CRISPR Technology: Improvements in Specificity and Efficiency. 2017 , 18, 1038-1054	9
1031	Potential for CRISPR Genetic Engineering to Increase Xenobiotic Degradation Capacities in Model Fungi. 2018 , 61-78	19
1030	Genetically modified pigs are protected from classical swine fever virus. 2018 , 14, e1007193	40
1029	Targeting CD44 by CRISPR-Cas9 in Multi-Drug Resistant Osteosarcoma Cells. 2018 , 51, 1879-1893	19
1028	Dynamic control of endogenous metabolism with combinatorial logic circuits. 2018 , 14, e8605	70
1027	Revolution in Gene Medicine Therapy and Genome Surgery. 2018 , 9,	17
1026	Scaling up genetic circuit design for cellular computing: advances and prospects. 2018 , 17, 833-853	35
1025	Delivery of an Artificial Transcription Regulator dCas9-VPR by Extracellular Vesicles for Therapeutic Gene Activation. 2018 , 7, 2715-2725	22
1024	DNA interference and beyond: structure and functions of prokaryotic Argonaute proteins. 2018 , 9, 5165	27
1023	Applications and potential of genome editing in crop improvement. 2018 , 19, 210	188
1022	Emerging RNA Suppression Technologies to Protect Citrus Trees From Citrus Greening Disease Bacteria. 2018 , 55, 163-197	8
1021	The construction of drug-resistant cancer cell lines by CRISPR/Cas9 system for drug screening. 2018 , 63, 1411-1419	7
1020	Engineered dCas9 with reduced toxicity in bacteria: implications for genetic circuit design. 2018 , 46, 11115-11125	5
1019	Challenges and guidelines toward 4D nucleome data and model standards. 2018 , 50, 1352-1358	29

1018	Mb- and FnCpf1 nucleases are active in mammalian cells: activities and PAM preferences of four wild-type Cpf1 nucleases and of their altered PAM specificity variants. 2018 , 46, 10272-10285	42
1017	Systematic Analysis of Bottlenecks in a Multibranched and Multilevel Regulated Pathway: The Molecular Fundamentals of l-Methionine Biosynthesis in Escherichia coli. 2018 , 7, 2577-2589	36
1016	CRISPR in personalized medicine: Industry perspectives in gene editing. 2018 , 42, 501-507	8
1015	CRISPR-Cas9/Cas12a biotechnology and application in bacteria. 2018 , 3, 135-149	58
1014	CRISPR/Cas9 gene-editing: Research technologies, clinical applications and ethical considerations. 2018 , 42, 487-500	22
1013	Double Selection Enhances the Efficiency of Target-AID and Cas9-Based Genome Editing in Yeast. 2018 , 8, 3163-3171	12
1012	In vivo epigenome editing and transcriptional modulation using CRISPR technology. 2018 , 27, 489-509	17
1011	CRISPR/Cas9-mediated genome editing induces gene knockdown by altering the pre-mRNA splicing in mice. 2018 , 18, 61	11
1010	Downregulation of SNCA Expression by Targeted Editing of DNA Methylation: A Potential Strategy for Precision Therapy in PD. 2018 , 26, 2638-2649	75
1009	CRISPhieRmix: a hierarchical mixture model for CRISPR pooled screens. 2018 , 19, 159	20
1008	CRISPR-Mediated Programmable 3D Genome Positioning and Nuclear Organization. <i>Cell</i> , 2018 , 175, 1405-1417	114
1007	A simple and highly efficient method for gene silencing in Escherichia coli. 2018 , 154, 25-32	1
1006	Programming the Dynamic Control of Bacterial Gene Expression with a Chimeric Ligand- and Light-Based Promoter System. 2018 , 7, 2627-2639	13
1005	Programming Bacteria With Light-Sensors and Applications in Synthetic Biology. 2018 , 9, 2692	39
1004	Microbial production of small medicinal molecules and biologics: From nature to synthetic pathways. 2018 , 36, 2219-2231	15
1003	The CRISPR/Cas revolution continues: From efficient gene editing for crop breeding to plant synthetic biology. 2018 , 60, 1127-1153	66
1002	Minimal PAM specificity of a highly similar SpCas9 ortholog. 2018 , 4, eaau0766	125
1001	Blossom of CRISPR technologies and applications in disease treatment. 2018 , 3, 217-228	13

1000	The chromatin accessibility landscape of primary human cancers. 2018 , 362,	392
999	CRISPR/Cas9 System: A Bacterial Tailor for Genomic Engineering. 2018 , 2018, 3797214	12
998	Heart Genomics. 2018 ,	
997	Gene Therapy and Genomic Application in Heart Disease. 2018 , 337-374	
996	Efficient genome editing using CRISPR-Cas-mediated homology directed repair in the ascidian <i>Ciona robusta</i> . 2018 , 56, e23260	5
995	Overview of Protein Expression Vectors for <i>E. coli</i> . 2018 , 17, e23	4
994	CRISPR Gene Perturbations Provide Insights for Improving Bacterial Biofuel Tolerance. 2018 , 6, 122	13
993	Detection of CRISPR-dCas9 on DNA with Solid-State Nanopores. 2018 , 18, 6469-6474	52
992	L1 retrotransposition in the soma: a field jumping ahead. 2018 , 9, 22	42
991	Cell Therapies: New Frontier for the Management of Diabetic Foot Ulceration. 2018 , 219-235	
990	Highly efficient genome editing by CRISPR-Cpf1 using CRISPR RNA with a uridylylate-rich 3'-overhang. 2018 , 9, 3651	81
989	Comprehensive off-target analysis of dCas9-SAM-mediated HIV reactivation via long noncoding RNA and mRNA profiling. 2018 , 11, 78	7
988	A tetracycline-inducible CRISPR/Cas9 system, targeting two long non-coding RNAs, suppresses the malignant behavior of bladder cancer cells. 2018 , 16, 4309-4316	5
987	Systems Biology. 2018 ,	0
986	Adeno-associated Virus Vectors in Gene Therapy. 2018 , 29-56	
985	Regulation of ATP levels in <i>Escherichia coli</i> using CRISPR interference for enhanced pinocembrin production. 2018 , 17, 147	17
984	Genome-wide screening identifies promiscuous phosphatases impairing terpenoid biosynthesis in <i>Escherichia coli</i> . 2018 , 102, 9771-9780	6
983	Cellular checkpoint control using programmable sequential logic. 2018 , 361,	53

982	Filamentation and restoration of normal growth in Escherichia coli using a combined CRISPRi sgRNA/antisense RNA approach. 2018 , 13, e0198058	16
981	Phage-Encoded Anti-CRISPR Defenses. 2018 , 52, 445-464	77
980	Boolean Computation in Plants Using Post-translational Genetic Control and a Visual Output Signal. 2018 , 7, 2322-2330	5
979	Delivery approaches for CRISPR/Cas9 therapeutics in vivo: advances and challenges. 2018 , 15, 905-913	54
978	A new sRNA-mediated posttranscriptional regulation system for Bacillus subtilis. 2018 , 115, 2986-2995	8
977	CRISPRi allows optimal temporal control of N-acetylglucosamine bioproduction by a dynamic coordination of glucose and xylose metabolism in Bacillus subtilis. 2018 , 49, 232-241	54
976	Multiplexed deactivated CRISPR-Cas9 gene expression perturbations deter bacterial adaptation by inducing negative epistasis. 2018 , 1, 129	7
975	Robust Approaches to Generating Reliable Predictive Models in Systems Biology. 2018 , 301-312	1
974	Targeted Genome Editing for Cotton Improvement. 2018 ,	3
973	Adeno-associated virus-mediated delivery of CRISPR-Cas9 for genome editing in the central nervous system. 2018 , 7, 33-41	2
972	Sharpening the Scissors: Mechanistic Details of CRISPR/Cas9 Improve Functional Understanding and Inspire Future Research. 2018 , 140, 11142-11152	8
971	Measurement of the Lateral Charge Distribution in Silicon Generated by High-Energy Ion Incidence. 2018 ,	
970	Engineering Diagnostic and Therapeutic Gut Bacteria. 2018 , 331-361	1
969	Evaluation of Time Resolution and Comparison of Modern Silicon Photomultipliers. 2018 ,	1
968	Delivering CRISPR: a review of the challenges and approaches. 2018 , 25, 1234-1257	452
967	The new normal of structure/function studies in the era of CRISPR/Cas9. 2018 , 475, 1635-1642	1
966	Tuning Gene Activity by Inducible and Targeted Regulation of Gene Expression in Minimal Bacterial Cells. 2018 , 7, 1538-1552	18
965	Cas9 versus Cas12a/Cpf1: Structure-function comparisons and implications for genome editing. 2018 , 9, e1481	103

964	Metabolic Engineering of <i>Saccharomyces cerevisiae</i> Using a Trifunctional CRISPR/Cas System for Simultaneous Gene Activation, Interference, and Deletion. 2018 , 608, 265-276	2
963	Modeling Rare Bone Diseases in Animals. 2018 , 16, 458-465	3
962	Anaerobic production of medium-chain fatty alcohols via a β -reduction pathway. 2018 , 48, 63-71	30
961	CRISPR/Cas9 mediated targeting of multiple genes in <i>Dictyostelium</i> . 2018 , 8, 8471	35
960	In Situ Gene Therapy via AAV-CRISPR-Cas9-Mediated Targeted Gene Regulation. 2018 , 26, 1818-1827	73
959	Chemical and CRISPR/Cas9 Tools for Functional Characterization of RNA Helicases. 2018 , 221-245	
958	Programmable sequential mutagenesis by inducible Cpf1 crRNA array inversion. 2018 , 9, 1903	5
957	A CRISPRi screen in <i>E. coli</i> reveals sequence-specific toxicity of dCas9. 2018 , 9, 1912	114
956	The CRISPR tool kit for genome editing and beyond. 2018 , 9, 1911	684
955	Applications of the CRISPR/Cas system beyond gene editing. 2018 , 3, bpy002	13
954	CRISPR-Based Targeted Epigenetic Editing Enables Gene Expression Modulation of the Silenced Beta-Galactoside Alpha-2,6-Sialyltransferase 1 in CHO Cells. 2018 , 13, e1700217	29
953	The ER membrane protein complex interacts cotranslationally to enable biogenesis of multipass membrane proteins. 2018 , 7,	92
952	Genome Editing Redefines Precision Medicine in the Cardiovascular Field. 2018 , 2018, 4136473	7
951	Emerging Roles of Non-Coding RNA Transcription. 2018 , 43, 654-667	84
950	CRISPR-Based Technologies for Metabolic Engineering in Cyanobacteria. 2018 , 36, 996-1010	74
949	Pooled CRISPR interference screening enables genome-scale functional genomics study in bacteria with superior performance. 2018 , 9, 2475	91
948	Molecular Techniques Used to Explore Glutamate Receptors in Synaptic Plasticity and Memory. 2018 , 419-443	
947	Mouse medulloblastoma driven by CRISPR activation of cellular Myc. 2018 , 8, 8733	9

946	cis-trans Engineering: Advances and Perspectives on Customized Transcriptional Regulation in Plants. 2018 , 11, 886-898	32
945	Platforms for Investigating LncRNA Functions. 2018 , 23, 493-506	83
944	Synthetic CRISPR-Cas gene activators for transcriptional reprogramming in bacteria. 2018 , 9, 2489	83
943	Live-Cell Imaging of Chromatin Condensation Dynamics by CRISPR. 2018 , 4, 216-235	19
942	Ethical Issues of Using CRISPR Technologies for Research on Military Enhancement. 2018 , 15, 327-335	10
941	Synthetic far-red light-mediated CRISPR-dCas9 device for inducing functional neuronal differentiation. 2018 , 115, E6722-E6730	95
940	RNA-dependent RNA targeting by CRISPR-Cas9. 2018 , 7,	115
939	CRISPR-Cas systems: ushering in the new genome editing era. 2018 , 9, 214-221	15
938	Guiding Lights in Genome Editing for Inherited Retinal Disorders: Implications for Gene and Cell Therapy. 2018 , 2018, 5056279	25
937	Essential function of NHE8 in mouse retina demonstrated by AAV-mediated CRISPR/Cas9 knockdown. 2018 , 176, 29-39	8
936	CRISPR/Cas9 genome surgery for retinal diseases. 2018 , 28, 23-32	7
935	Targeted Genome Editing Techniques in <i>C. elegans</i> and Other Nematode Species. 3-21	
934	Don't Kill the Messenger: Employing Genome Editing to Study Regulatory RNA Interactions. 52-68	
933	Application of TAL Proteins and the CRISPR System to Purification of Specific Genomic Regions for Locus-specific Identification of Chromatin-associated Molecules. 195-208	
932	Development of Toolboxes for Precision Genome/Epigenome Editing and Imaging of Epigenetics. 2018 , 18, 1717-1726	3
931	Molecular parts and genetic circuits for metabolic engineering of microorganisms. 2018 , 365,	14
930	A functional type II-A CRISPR-Cas system from <i>Listeria</i> enables efficient genome editing of large non-integrating bacteriophage. 2018 , 46, 6920-6933	33
929	Combining Zebrafish and CRISPR/Cas9: Toward a More Efficient Drug Discovery Pipeline. 2018 , 9, 703	54

928	Insights into neural crest development from studies of avian embryos. 2018 , 62, 183-194	15
927	CRISPR/Cas9-based In Vivo Models of Cancer. 315-336	1
926	CRISPR-Based Perturbation of Gene Function in Drosophila Cells. 2018 , 193-206	
925	An enChIP system for the analysis of bacterial genome functions. 2018 , 11, 387	4
924	Efficient Genome Editing of AMB-1 by CRISPR-Cas9 System for Analyzing Magnetotactic Behavior. 2018 , 9, 1569	11
923	CRISPR-Cas System: History and Prospects as a Genome Editing Tool in Microorganisms. 2018 , 75, 1675-1683	20
922	Feasibility of a Conditional Knockout System for Based on CRISPR Interference. 2018 , 8, 59	20
921	Genetics of Cardiovascular Disease: Fishing for Causality. 2018 , 5, 60	18
920	From Bioengineering to CRISPR/Cas9 - A Personal Retrospective of 20 Years of Research in Programmable Genome Targeting. 2018 , 9, 5	2
919	Commentary: Programmable base editing of AAT to GTC in genomic DNA without DNA cleavage. 2018 , 9, 21	9
918	Recent Developments of the Synthetic Biology Toolkit for. 2018 , 9, 154	57
917	Analysis of CRISPR-Cas System in and Its Application. 2018 , 9, 257	23
916	Riboregulator elements as tools to engineer gene expression in cyanobacteria. 2018 , 102, 7717-7723	7
915	Metabolic engineering of Bacillus subtilis for l-valine overproduction. 2018 , 115, 2778-2792	14
914	Blue-Light Receptors for Optogenetics. 2018 , 118, 10659-10709	109
913	Applications of CRISPR/Cas System to Bacterial Metabolic Engineering. 2018 , 19,	69
912	CRISPR-Cas Targeting of Host Genes as an Antiviral Strategy. 2018 , 10,	26
911	CRISPR-Cas9 Genetic Analysis of Virus-Host Interactions. 2018 , 10,	18

910	An enhanced CRISPR repressor for targeted mammalian gene regulation. 2018 , 15, 611-616	192
909	CRISPR-Cas9: A cornerstone for the evolution of precision medicine. 2018 , 82, 331-357	9
908	In Vitro Transcription Networks Based on Hairpin Promoter Switches. 2018 , 7, 1937-1945	11
907	Functional Interrogation of Primary Human T Cells via CRISPR Genetic Editing. 2018 , 201, 1586-1598	21
906	Cellomics approach for high-throughput functional annotation of <i>Caenorhabditis elegans</i> neural network. 2018 , 8, 10380	6
905	Nickel(ii)-promoted specific hydrolysis of zinc finger proteins. 2018 , 10, 1089-1098	5
904	Halophiles as Chassis for Bioproduction. 2018 , 2, 1800088	17
903	Making ends meet: targeted integration of DNA fragments by genome editing. 2018 , 127, 405-420	19
902	The importance of DNA methylation of exons on alternative splicing. 2018 , 24, 1351-1362	53
901	Mapping the Genetic Landscape of Human Cells. <i>Cell</i> , 2018 , 174, 953-967.e22	56.2 136
900	Modeling Neuropsychiatric and Neurodegenerative Diseases With Induced Pluripotent Stem Cells. 2018 , 6, 82	13
899	Binary addition in a living cell based on riboregulation. 2018 , 14, e1007548	4
898	CRISPR/Cascade 9-Mediated Genome Editing-Challenges and Opportunities. 2018 , 9, 240	36
897	Metabolic Engineering of the Shikimate Pathway for Production of Aromatics and Derived Compounds-Present and Future Strain Construction Strategies. 2018 , 6, 32	83
896	Enhancing Understanding of the Visual Cycle by Applying CRISPR/Cas9 Gene Editing in Zebrafish. 2018 , 6, 37	7
895	High-yield production of 1,3-propanediol from glycerol by metabolically engineered. 2018 , 11, 104	28
894	Designing and Assembling Plasmids for the Construction of <i>Escherichia coli</i> Biosensor for <i>Vibrio cholerae</i> Detection. 2018 , 1772, 445-456	1
893	CRISPR GENOME SURGERY IN THE RETINA IN LIGHT OF OFF-TARGETING. 2018 , 38, 1443-1455	9

892	Bacterial Genome Editing with CRISPR-Cas9: Taking <i>Clostridium beijerinckii</i> as an Example. 2018 , 1772, 297-325	9
891	CRISPR-Cas9-Mediated Genome Editing and Transcriptional Control in <i>Yarrowia lipolytica</i> . 2018 , 1772, 327-345	12
890	RNA-guided single/double gene repressions in <i>Corynebacterium glutamicum</i> using an efficient CRISPR interference and its application to industrial strain. 2018 , 17, 4	34
889	Multiplexed CRISPR Activation of Cryptic Sugar Metabolism Enables <i>Yarrowia Lipolytica</i> Growth on Cellobiose. 2018 , 13, e1700584	51
888	Engineering a Functional Small RNA Negative Autoregulation Network with Model-Guided Design. 2018 , 7, 1507-1518	22
887	Discovery of proteins associated with a predefined genomic locus via dCas9-APEX-mediated proximity labeling. 2018 , 15, 437-439	100
886	RNA virus interference via CRISPR/Cas13a system in plants. 2018 , 19, 1	409
885	Design principles for nuclease-deficient CRISPR-based transcriptional regulators. 2018 , 18,	24
884	Prospects for engineering dynamic CRISPR-Cas transcriptional circuits to improve bioproduction. 2018 , 45, 481-490	7
883	Exploring of the feature space of de novo developed post-transcriptional riboregulators. 2018 , 14, e1006170	3
882	Genome Editing for Crop Improvement: Status and Prospects. 2018 , 75-104	1
881	A Split Transcriptional Repressor That Links Protein Solubility to an Orthogonal Genetic Circuit. 2018 , 7, 2126-2138	14
880	Programmed cell removal by calreticulin in tissue homeostasis and cancer. 2018 , 9, 3194	67
879	Quorum Sensing and its Biotechnological Applications. 2018 ,	4
878	Transgenic Mouse Models in Cancer Research. 2018 , 8, 268	87
877	Precision gene editing technology and applications in nephrology. 2018 , 14, 663-677	24
876	CRISPR Technology for Breast Cancer: Diagnostics, Modeling, and Therapy. 2018 , 2, 1800132	4
875	RNA-Based dCas9VP64 System Improves the Viability of Cryopreserved Mammalian Cells. 2018 , 08, 1850004	0

874	Methods and advances in RNA characterization and design. 2018 , 143, 1-3	1
873	Improved sgRNA design in bacteria via genome-wide activity profiling. 2018 , 46, 7052-7069	43
872	Targeted Nucleotide Editing Technologies for Microbial Metabolic Engineering. 2018 , 13, e1700596	27
871	CRISPR-Cas Systems Regulate Quorum Sensing Genes and Alter Virulence in Bacteria. 2018 , 143-150	
870	Implementation of the CRISPR-Cas13a system in fission yeast and its repurposing for precise RNA editing. 2018 , 46, e90	31
869	Specificity of RNAi, LNA and CRISPRi as loss-of-function methods in transcriptional analysis. 2018 , 46, 5950-5966	65
868	CRISPR/dCas9-Mediated Multiplex Gene Repression in Streptomyces. 2018 , 13, e1800121	40
867	Therapeutic approaches for cardiac regeneration and repair. 2018 , 15, 585-600	161
866	Human antibody-based chemically induced dimerizers for cell therapeutic applications. 2018 , 14, 112-117	27
865	Scarless genome editing: progress towards understanding genotype-phenotype relationships. 2018 , 64, 1229-1238	3
864	Targeted Repression of Essential Genes To Arrest Growth and Increase Carbon Partitioning and Biofuel Titrers in Cyanobacteria. 2018 , 7, 1669-1675	48
863	Developing a Cas9-based tool to engineer native plasmids in Synechocystis sp. PCC 6803. 2018 , 115, 2305-2314	18
862	CRISPR/dCas9-mediated biosensor for detection of tick-borne diseases. 2018 , 273, 316-321	28
861	Guide RNA selection for CRISPR-Cas9 transfections in Plasmodium falciparum. 2018 , 48, 825-832	15
860	Applications of CRISPR-Cas Enzymes in Cancer Therapeutics and Detection. 2018 , 4, 499-512	55
859	A modular dCas9-SunTag DNMT3A epigenome editing system overcomes pervasive off-target activity of direct fusion dCas9-DNMT3A constructs. 2018 , 28, 1193-1206	77
858	Different Methods of Delivering CRISPR/Cas9 Into Cells. 2018 , 159, 157-176	17
857	Decoding the noncoding genome via large-scale CRISPR screens. 2018 , 52, 70-76	9

856	Rediverting carbon flux in <i>Clostridium ljungdahlii</i> using CRISPR interference (CRISPRi). 2018 , 48, 243-253	54
855	Unexpected binding behaviors of bacterial Argonautes in human cells cast doubts on their use as targetable gene regulators. 2018 , 13, e0193818	4
854	Genome Editing. 2018 , 19-31	0
853	CozEa and CozEb play overlapping and essential roles in controlling cell division in <i>Staphylococcus aureus</i> . 2018 , 109, 615-632	12
852	CRISPR base editors: genome editing without double-stranded breaks. 2018 , 475, 1955-1964	132
851	Synthetic biology strategies toward heterologous phytochemical production. 2018 , 35, 902-920	30
850	CRISPR therapeutic tools for complex genetic disorders and cancer (Review). 2018 , 53, 443-468	21
849	Advances in the development of molecular genetic tools for <i>Mycobacterium tuberculosis</i> . 2018 , 45, 281-281	8
848	Synthetic biology advances and applications in the biotechnology industry: a perspective. 2018 , 45, 449-461	38
847	Dissection of Enhancer Function Using Multiplex CRISPR-based Enhancer Interference in Cell Lines. 2018 ,	5
846	CRISPR-Enabled Tools for Engineering Microbial Genomes and Phenotypes. 2018 , 13, e1700586	20
845	CRISPR-Mediated Genome Editing and Gene Repression in <i>Scheffersomyces stipitis</i> . 2018 , 13, e1700598	29
844	CAPTURE: In Situ Analysis of Chromatin Composition of Endogenous Genomic Loci by Biotinylated dCas9. 2018 , 123, e64	9
843	CRISPR Ethics: Moral Considerations for Applications of a Powerful Tool. 2019 , 431, 88-101	68
842	Chasing bacterial chassis for metabolic engineering: a perspective review from classical to non-traditional microorganisms. 2019 , 12, 98-124	112
841	A CRISPR-dCas Toolbox for Genetic Engineering and Synthetic Biology. 2019 , 431, 34-47	140
840	Gene Editing in Regenerative Medicine. 2019 , 741-759	
839	Temporal and Spatial Epigenome Editing Allows Precise Gene Regulation in Mammalian Cells. 2019 , 431, 111-121	16

838	Programmable activation of Bombyx gene expression using CRISPR/dCas9 fusion systems. 2019 , 26, 983-990	7
837	The Masc gene product controls masculinization in the black cutworm, <i>Agrotis ipsilon</i> . 2019 , 26, 1037-1044	11
836	PAM identification by CRISPR-Cas effector complexes: diversified mechanisms and structures. 2019 , 16, 504-517	82
835	Emerging tools, enabling technologies, and future opportunities for the bioproduction of aromatic chemicals. 2019 , 94, 38-52	8
834	Application of the CRISPRi system to repress <i>sepF</i> expression in <i>Mycobacterium smegmatis</i> . 2019 , 72, 183-190	6
833	CRISPR for Neuromuscular Disorders: Gene Editing and Beyond. 2019 , 34, 341-353	9
832	Visualisation of dCas9 target search in vivo using an open-microscopy framework. 2019 , 10, 3552	33
831	Application of Cas12a and nCas9-activation-induced cytidine deaminase for genome editing and as a non-sexual strategy to generate homozygous/multiplex edited plants in the allotetraploid genome of tobacco. 2019 , 101, 355-371	17
830	Systematic Evaluation of CRISPRa and CRISPRi Modalities Enables Development of a Multiplexed, Orthogonal Gene Activation and Repression System. 2019 , 8, 1998-2006	20
829	Proximity Induced Splicing Utilizing Caged Split Inteins. 2019 , 141, 13708-13712	10
828	Fine-Tuning of Using CRISPRi for Increasing 5-Aminolevulinic Acid Production in. 2019 , 10, 1731	14
827	Multiplexed genome engineering by Cas12a and CRISPR arrays encoded on single transcripts. 2019 , 16, 887-893	103
826	An educational module to explore CRISPR technologies with a cell-free transcription-translation system. 2019 , 4, ysz005	15
825	Single-Nucleotide-Resolution Computing and Memory in Living Cells. 2019 , 75, 769-780.e4	43
824	Genome Engineering of Using Expanded Genetic Tools and the CRISPR-Cas9 System. 2019 , 8, 2059-2068	14
823	CRISPR Tools for Systematic Studies of RNA Regulation. 2019 , 11,	11
822	The Expanding Class 2 CRISPR Toolbox: Diversity, Applicability, and Targeting Drawbacks. 2019 , 33, 503-513	6
821	Transcriptome-wide dynamics of extensive mA mRNA methylation during <i>Plasmodium falciparum</i> blood-stage development. 2019 , 4, 2246-2259	30

820	Recent advances in plasmid-based tools for establishing novel microbial chassis. 2019 , 37, 107433	13
819	Transcription of Bacterial Chromatin. 2019 , 431, 4040-4066	30
818	Long Noncoding RNAs of the Arterial Wall as Therapeutic Agents and Targets in Atherosclerosis. 2019 , 119, 1222-1236	8
817	Mutant CEBPA directly drives the expression of the targetable tumor-promoting factor CD73 in AML. 2019 , 5, eaaw4304	13
816	The emerging and uncultivated potential of CRISPR technology in plant science. 2019 , 5, 778-794	189
815	Versatile transcription control based on reversible dCas9 binding. 2019 , 25, 1457-1469	8
814	Principles and Applications of Nucleic Acid Strand Displacement Reactions. 2019 , 119, 6326-6369	246
813	Regulation and metabolic engineering strategies for permeases of <i>Saccharomyces cerevisiae</i> . 2019 , 35, 112	2
812	Programmable CRISPR-Cas Repression, Activation, and Computation with Sequence-Independent Targets and Triggers. 2019 , 8, 1583-1589	19
811	Multiplexed DNA Identification Using Site Specific dCas9 Barcodes and Nanopore Sensing. 2019 , 4, 2065-2072	32
810	Reverse Engineering of an Aspirin-Responsive Transcriptional Regulator in. 2019 , 8, 1890-1900	3
809	Cutting back malaria: CRISPR/Cas9 genome editing of <i>Plasmodium</i> . 2019 , 18, 281-289	21
808	RNA-guided transposition in human cells. 2019 , 4, ysz018	20
807	Genome Editing for Muscle Gene Therapy. 2019 , 275-287	
806	Epigenetics and addiction. 2019 , 59, 128-136	37
805	Programmable RNA-Guided RNA Effector Proteins Built from Human Parts. <i>Cell</i> , 2019 , 178, 122-134.e1256.2	57
804	Catalytically Active Cas9 Mediates Transcriptional Interference to Facilitate Bacterial Virulence. 2019 , 75, 498-510.e5	26
803	SOX4 regulates invasion of bladder cancer cells via repression of WNT5a. 2019 , 55, 359-370	14

802	Cell derived extracellular vesicles: from isolation to functionalization and biomedical applications. 2019 , 7, 3552-3565	10
801	CRISPR system in the yeast <i>Saccharomyces cerevisiae</i> and its application in the bioproduction of useful chemicals. 2019 , 35, 111	14
800	CRISPR-Cas12a Nucleases Bind Flexible DNA Duplexes without RNA/DNA Complementarity. 2019 , 4, 17140-17147	6
799	Genome Variation, the Epigenome and Cellular Phenotypes. 2019 , 97-126	1
798	CRISPR Toolbox for Mammalian Cell Engineering. 2019 , 185-206	0
797	Magnetically guided virus stamping for the targeted infection of single cells or groups of cells. 2019 , 14, 3205-3219	6
796	Genome editing for horticultural crop improvement. 2019 , 6, 113	49
795	. 2019 ,	1
794	Enhanced scale and scope of genome engineering and regulation using CRISPR/Cas in <i>Saccharomyces cerevisiae</i> . 2019 , 19,	6
793	De novo-designed translation-repressing riboregulators for multi-input cellular logic. 2019 , 15, 1173-1182	48
792	A Toolkit for Rapid Modular Construction of Biological Circuits in Mammalian Cells. 2019 , 8, 2593-2606	21
791	An Easy and Efficient Strategy for the Enhancement of Epothilone Production Mediated by TALE-TF and CRISPR/dcas9 Systems in. 2019 , 7, 334	5
790	A Point of Inflection and Reflection on Systems Chemical Biology. 2019 , 14, 2497-2511	3
789	Chlamydial Infection From Outside to Inside. 2019 , 10, 2329	16
788	Mapping genetic interactions in cancer: a road to rational combination therapies. 2019 , 11, 62	12
787	. 2019 ,	0
786	Coevolutionary Couplings Unravel PAM-Proximal Constraints of CRISPR-SpCas9. 2019 , 117, 1684-1691	2
785	Kinetic characterization of Cas9 enzymes. 2019 , 616, 289-311	3

784	Application of iPSC to Modelling of Respiratory Diseases. 2020 , 1237, 1-16	5
783	Microbial CRISPRi and CRISPRa Systems for Metabolic Engineering. 2019 , 24, 579-591	23
782	Blockade of MDM2 with inactive Cas9 prevents epithelial to mesenchymal transition in retinal pigment epithelial cells. 2019 , 99, 1874-1886	6
781	Engineered CRISPRa enables programmable eukaryote-like gene activation in bacteria. 2019 , 10, 3693	42
780	CRISPR-Cas9 screens identify regulators of antibody-drug conjugate toxicity. 2019 , 15, 949-958	26
779	CRISPRi-Based Downregulation of Transcriptional Feedback Improves Growth and Metabolism of Arginine Overproducing. 2019 , 8, 1983-1990	17
778	Using an Endogenous CRISPR-Cas System for Genome Editing in the Human Pathogen <i>Clostridium difficile</i> . 2019 , 85,	19
777	A CRISPR platform for targeted in vivo screens identifies <i>Toxoplasma gondii</i> virulence factors in mice. 2019 , 10, 3963	25
776	Marine Proteobacteria as a source of natural products: advances in molecular tools and strategies. 2019 , 36, 1333-1350	22
775	CRISPR-mediated live imaging of genome editing and transcription. 2019 , 365, 1301-1305	104
774	Modulating Pathogenesis with Mobile-CRISPRi. 2019 , 201,	15
773	A Broad-Host-Range CRISPRi Toolkit for Silencing Gene Expression in. 2019 , 8, 2372-2384	11
772	Functional Dissection of pri-miR-290~295 in Dgcr8 Knockout Mouse Embryonic Stem Cells. 2019 , 20,	2
771	Targeted delivery of CRISPR interference system against to white adipocytes ameliorates obesity, inflammation, hepatic steatosis, and insulin resistance. 2019 , 29, 1442-1452	29
770	A benchmark of computational CRISPR-Cas9 guide design methods. 2019 , 15, e1007274	17
769	The Role of Noncoding RNAs in Double-Strand Break Repair. 2019 , 10, 1155	10
768	Multi-input chemical control of protein dimerization for programming graded cellular responses. 2019 , 37, 1209-1216	21
767	The fundamental role of chromatin loop extrusion in physiological V(D)J recombination. 2019 , 573, 600-604	60

766	Endogenous Fluorescence Tagging by CRISPR. 2019 , 29, 912-928	23
765	Nuclease dead Cas9 is a programmable roadblock for DNA replication. 2019 , 9, 13292	15
764	Analysis of lipoprotein transport depletion in using CRISPRi. 2019 , 116, 17013-17022	12
763	Tuberculosis drug discovery in the CRISPR era. 2019 , 15, e1007975	15
762	Inhibition of KU70 and KU80 by CRISPR interference, not NgAgo interference, increases the efficiency of homologous recombination in pig fetal fibroblasts. 2019 , 18, 438-448	2
761	CRISPR technologies for stem cell engineering and regenerative medicine. 2019 , 37, 107447	34
760	Emerging Species and Genome Editing Tools: Future Prospects in Cyanobacterial Synthetic Biology. 2019 , 7,	25
759	Design and Generation of a CRISPR Interference System for Genetic Repression and Essential Gene Analysis in the Fungal Pathogen <i>Candida albicans</i> . 2022 , 2377, 69-88	0
758	Computational Approaches for Designing Highly Specific and Efficient sgRNAs. 2022 , 2349, 147-166	
757	New Method for Genome-Scale Functional Genomic Study in Bacteria with Superior Performance: CRISPR Interference Screen. 2022 , 2377, 123-141	
756	Activating natural product synthesis using CRISPR interference and activation systems in <i>Streptomyces</i> .	0
755	Classification of <i>Cattleya Trianae</i> and Its Varieties by Using Colorimetry. 2020 , 35-44	
754	Prospects of Inhibitory Proteins in Imparting Insect Pest Resistance. 2020 , 271-291	
753	Targeting the autosomal <i>Ceratitis capitata</i> transformer gene using Cas9 or dCas9 to masculinize XX individuals without inducing mutations. 2020 , 21, 150	1
752	Regenerating Urethral Striated Muscle by CRISPRi/dCas9-KRAB-Mediated Myostatin Silencing for Obesity-Associated Stress Urinary Incontinence. 2020 , 3, 562-572	1
751	PROSPECTS FOR GENE EDITING USING CRISPR/CAS, OR HOW TO MASTER THE GENETIC SCISSORS Nobel Prize in Chemistry for 2020. 2020 , 31-49	
750	Flapjack: Data Management and Analysis for Genetic Circuit Characterization. 2021 , 10, 183-191	3
749	Gene Editing in Dimorphic Fungi Using CRISPR/Cas9. 2020 , 59, e132	0

- 748 The history of CRISPR: from discovery to the present. **2022**, 1-6
- 747 Cyanobacterial availability for CRISPR-based genome editing: Current and future challenges. **2022**, 231-252
- 746 CRISPR-Cas orthologs and variants. **2022**, 7-38
- 745 A History of Mouse Genetics: From Fancy Mice to Mutations in Every Gene. **2020**, 1236, 1-38 1
- 744 A method for rapid selection of randomly induced mutations in a gene of interest using CRISPR/Cas9 mediated activation of gene expression.
- 743 Role of the CRISPR Technique in Decoding the Principles of Quorum Sensing. **2020**, 49-63
- 742 Application of mouse genetics to human disease: generation and analysis of mouse models. **2020**, 95-108
- 741 System metabolic engineering strategies for cell factories construction. **2020**, 125-151 0
- 740 Mammalian Synbio Sensors. **2020**, 1-21
- 739 Filamentous Fungi as Hosts for Heterologous Production of Proteins and Secondary Metabolites in the Post-Genomic Era. **2020**, 227-265
- 738 Application of Bioinformatics Tools in CRISPR/Cas. **2020**, 31-52 3
- 737 Introduction to Genome Editing Techniques: Implications in Modern Agriculture. **2020**, 1-30 1
- 736 Tuning the Expression of Long Noncoding RNA Loci with CRISPR Interference. **2020**, 2161, 1-16 0
- 735 Introduction to Synthetic Biology. **2020**, 1-15
- 734 *Pichia pastoris* A useful experimental tool in protein engineering and production. **2020**, 287-299
- 733 CRISPR and Food Security: Applications in Cereal Crops. **2020**, 53-67
- 732 Genome Engineering Tools in Immunotherapy. **2020**, 73-102
- 731 Prediction of synonymous corrections by the BE-FF computational tool expands the targeting scope of base editing.

730	A reversibly induced CRISPRi system targeting Photosystem II in the cyanobacterium <i>Synechocystis</i> sp. PCC 6803.	
729	An inducible CRISPR-interference library for genetic interrogation of <i>Saccharomyces cerevisiae</i> biology.	1
728	Exploration of bacterial bottlenecks and <i>Streptococcus pneumoniae</i> pathogenesis by CRISPRi-seq.	0
727	Generation and Validation of Versatile Inducible CRISPRi Embryonic Stem Cell and Mouse Models.	1
726	multicrispr: gRNA design for prime editing and parallel targeting of thousands of targets.	0
725	In situ reprogramming of gut bacteria by oral delivery.	
724	Applications of CRISPR technology to lung cancer research. 2021,	1
723	Synthetic biology toolkit for engineering <i>Cupriavidus necator</i> H16 as a platform for CO valorization. 2021, 14, 212	0
722	Contextual reprogramming of CAR-T cells for treatment of HER2 cancers. 2021, 19, 459	1
721	Human iPSC-Derived Neurons as A Platform for Deciphering the Mechanisms behind Brain Aging. 2021, 9,	0
720	Competitive dCas9 binding as a mechanism for transcriptional control. 2021, 17, e10512	2
719	A multi-omic single-cell landscape of human gynecologic malignancies. 2021, 81, 4924-4941.e10	2
718	Outer Membrane Vesicles from the gut microbiome contribute to tumor immunity by eliciting cross-reactive T cells.	
717	Single adeno-associated virus-based multiplexed CRISPR-Cas9 system to nullify core components of the mammalian molecular clock.	
716	Testing the CRISPR-Cas9 and glmS ribozyme systems in <i>Leishmania tarentolae</i> .	
715	A High-efficacy CRISPRi System for Gene Function Discovery in <i>Zymomonas mobilis</i> .	
714	Genome-wide Cas9 binding specificity in. 2020, 8, e9442	2
713	Identification of a long non-coding RNA regulator of liver carcinoma cell survival.	

- 712 Genome editing of lactic acid bacteria: opportunities for food, feed, pharma and biotech. **2019**, 366, i30-i41
- 711 Novel inhibitors of *E. coli* lipoprotein diacylglycerol transferase are insensitive to resistance caused by *lpp* deletion.
- 710 Targeted-Antibacterial-Plasmids (TAPs) combining conjugation and CRISPR/Cas systems achieve strain-specific antibacterial activity.
- 709 A novel and conserved cell wall enzyme that can substitute for the Lipid II synthase MurG.
- 708 CRISPR-Based Transcriptional Activation Tool for Silent Genes in Filamentous Fungi.
- 707 CRISPR-nRAGE, a Cas9 nickase-reverse transcriptase assisted versatile genetic engineering toolkit for *E. coli*.
- 706 Three-dimensional biofilm growth supports a mutualism involving matrix and nutrient sharing.
- 705 Supervised Application of Internal Validation Measures to Benchmark Dimensionality Reduction Methods in scRNA-seq Data. 1
- 704 RNA LEVER Mediates Long-Range Regulation of β globin by Keeping PRC2 in Check.
- 703 Essential gene analysis in *Acinetobacter baumannii* by high-density transposon mutagenesis and CRISPR interference.
- 702 MrvR, a Group B *Streptococcus* Transcription Factor that Controls Multiple Virulence Traits.
- 701 Intronic enhancer region governs transcript-specific BDNF expression in neurons.
- 700 CRISPR-ERA: A Webserver for Guide RNA Design of Gene Editing and Regulation. **2021**, 2189, 65-69 1
- 699 The CRISPR/Cas9 system for gene editing and its potential application in pain research. **2016**, 1, 22-33 11
- 698 Editing the Neuronal Genome: a CRISPR View of Chromatin Regulation in Neuronal Development, Function, and Plasticity. **2016**, 89, 457-470 3
- 697 CRISPR-Mediated Epigenome Editing. **2016**, 89, 471-486 23
- 696 The Application of CRISPR/Cas9 for the Treatment of Retinal Diseases. **2017**, 90, 533-541 13
- 695 Applications of CRISPR/Cas9 in the Mammalian Central Nervous System. **2017**, 90, 567-581 27

694	Genome Surgery and Gene Therapy in Retinal Disorders. 2017 , 90, 523-532	8
693	[Application Progress of CRISPR/Cas9 System for Gene Editing in Tumor Research]. 2015 , 18, 571-9	
692	CRISPR/Cas9 System for Efficient Genome Editing and Targeting in the Mouse NIH/3T3 Cells. 2019 , 11, 149-155	2
691	Combination of Genetics and Nanotechnology for Down Syndrome Modification: A Potential Hypothesis and Review of the Literature. 2019 , 48, 371-378	1
690	[Development and applications of CRISPR/Cas9 library screening technology in cancer research]. 2019 , 39, 1381-1386	
689	[Development of CRISPR technology and its application in bone and cartilage tissue engineering]. 2019 , 39, 1515-1520	
688	Use of dual-transfection for programmed death cell protein 1 disruption mediated by CRISPR-Cas9 in human peripheral blood mononuclear cells. 2021 , 24, 44-50	
687	Application of CRISPR/Cas9 Gene Editing System in Obtaining Natural Products in Actinomycetes. 2021 , 41, 4279	
686	dCas9 binding inhibits the initiation of base excision repair in vitro. 2021 , 109, 103257	0
685	CRISPR/Cas System and Factors Affecting Its Precision and Efficiency.. 2021 , 9, 761709	0
684	Interferon regulatory factor-7 is required for hair cell development during zebrafish embryogenesis. 2021 ,	
683	Engineering a PAM-flexible SpdCas9 variant as a universal gene repressor. 2021 , 12, 6916	0
682	Gene editing with CRISPR-Cas12a guides possessing ribose-modified pseudoknot handles. 2021 , 12, 6591	2
681	Applications of CRISPR-Cas Technologies to Proteomics. 2021 , 12,	1
680	Recapitulation of patient-specific 3D chromatin conformation using machine learning and validation of identified enhancer-gene targets.	0
679	CRISPR-Cas Technology: Emerging Applications in Clinical Microbiology and Infectious Diseases. 2021 , 14,	2
678	A versatile toolbox for CRISPR-based genome engineering in Pichia pastoris. 2021 , 105, 9211-9218	1
677	Base Editing of Somatic Cells Using CRISPR-Cas9 in. 2021 ,	0

676	Multi-layer CRISPRa/i circuits for dynamic genetic programs in cell-free and bacterial systems. 2021,	0
675	CRISPR-Cas9-Mediated Gene Therapy in Neurological Disorders. 2021, 1	4
674	New Technologies and Strategies for Grapevine Breeding Through Genetic Transformation.. 2021, 12, 767522	1
673	CRISPR/Cas Technologies and Their Applications in. 2021, 9, 762676	2
672	Building Endogenous Gene Connections through RNA Self-Assembly Controlled CRISPR/Cas9 Function. 2021, 143, 19834-19843	0
671	A chemical-genetic map of the pathways controlling drug potency in Mycobacterium tuberculosis.	0
670	Between the Devil and the Deep Blue Sea: Non-Coding RNAs Associated with Transmissible Cancers in Tasmanian Devil, Domestic Dog and Bivalves. 2021, 7,	1
669	CRISPER/CAS: A potential tool for genomes editing. 2021, 7, 122-129	
668	CRISPRi enables fast growth followed by stable aerobic pyruvate formation in without auxotrophy.. 2022, 22, 70-84	2
667	Inherited retinal diseases: Linking genes, disease-causing variants, and relevant therapeutic modalities. 2021, 101029	6
666	Expansion of the Yeast Modular Cloning Toolkit for CRISPR-Based Applications, Genomic Integrations and Combinatorial Libraries. 2021,	2
665	Toward a next-generation diagnostic tool: A review on emerging isothermal nucleic acid amplification techniques for the detection of SARS-CoV-2 and other infectious viruses.. 2022, 1209, 339338	4
664	The power and the promise of CRISPR/Cas9 genome editing for clinical application with gene therapy. 2021,	0
663	The Miniature CRISPR-Cas12m Effector Binds DNA To Block Transcription.	
662	Synthetic Gene Circuits: Design, Implement, and Apply. 2021, 1-18	
661	Toward Multiplexed Optogenetic Circuits.. 2021, 9, 804563	1
660	Beyond Genome Editing: CRISPR Approaches. 2022, 187-218	0
659	CRISPR for Rewriting Genetic Code. 2022, 255-283	

658	Moving toward genome-editing therapies for cardiovascular diseases.. 2022 , 132,	2
657	Resonator nanophotonic standing-wave array trap for single-molecule manipulation and measurement.. 2022 , 13, 77	1
656	CRISPR/Cas9 Ribonucleoprotein-Mediated Genome and Epigenome Editing in Mammalian Cells.. 2021 , 114087	1
655	NudC guides client transfer between the Hsp40/70 and Hsp90 chaperone systems.. 2022 ,	3
654	Expanding the plant genome editing toolbox with recently developed CRISPR-Cas systems.. 2022 ,	4
653	Synthetic gene circuits for higher-order information processing. 2022 , 373-395	0
652	The CRISPR-Cas toolbox and gene editing technologies.. 2021 ,	15
651	Uncovering the Distinct Properties of a Bacterial Type I-E CRISPR Activation System.. 2022 ,	0
650	CRISPR Interference Modules as Low-Burden Logic Inverters in Synthetic Circuits.. 2021 , 9, 743950	
649	Identification of putative essential protein domains from high-density transposon insertion sequencing.. 2022 , 12, 962	1
648	CRISPRi-seq for genome-wide fitness quantification in bacteria.. 2022 ,	1
647	Molecular reporters for CRISPR/Cas: From design principles to engineering for bioanalytical and diagnostic applications. 2022 , 149, 116539	1
646	History and Classification of CRISPR/Cas System. 2022 , 29-52	0
645	Applications of CRISPR/Cas System in Plants. 2022 , 285-309	
644	The Role of Recombinant AAV in Precise Genome Editing.. 2021 , 3, 799722	1
643	Cure and Long-Term Remission Strategies.. 2022 , 2407, 391-428	1
642	The roles of transcription, chromatin organisation and chromosomal processes in holocentromere establishment and maintenance.. 2022 ,	0
641	Deciphering the Design Rules of Toehold-Gated sgRNA for Conditional Activation of Gene Expression and Protein Degradation in Mammalian Cells.. 2022 , 11, 397-405	0

- 640 High-throughput navigation of the sequence space. **2022**, 123-146
- 639 Toward improved terpenoids biosynthesis: strategies to enhance the capabilities of cell factories. **2022**, 9, 0
- 638 Interaction of Bare dSpCas9, Scaffold gRNA, and Type II Anti-CRISPR Proteins Highly Favors the Control of Gene Expression in the Yeast .. **2022**, 11, 176-190 1
- 637 CRISPR-based genome editing through the lens of DNA repair.. **2022**, 82, 348-388 5
- 636 Implication of a gene deletion on a Salmonella Enteritidis phage growth parameters.. **2021**, 308, 198654 0
- 635 Bioinformatic Tools in CRISPR/Cas Platform. **2022**, 53-111
- 634 CRISPR ERA: Current Applications and Future Perspectives on Actinobacteria. **2022**, 181-202
- 633 CRISPR-CAS mediated transcriptional control and epi-mutagenesis.. **2022**, 1
- 632 Advances and application of CRISPR-Cas systems. **2022**, 331-348
- 631 Application of CRISPR/Cas system in iPSC-based disease model of hereditary deafness. **2022**, 225-245
- 630 Experimental methods to study protein-nucleic acid interactions. **2022**, 137-161
- 629 Sumoylation of Cas9 at lysine 848 regulates protein stability and DNA binding.. **2022**, 5, 1
- 628 In Vivo Rapid Investigation of CRISPR-Based Base Editing Components in (IRI-CCE): A Platform for Evaluating Base Editing Tools and Their Components.. **2022**, 23, 2
- 627 Systematic decomposition of sequence determinants governing CRISPR/Cas9 specificity.. **2022**, 13, 474 2
- 626 Analysis of epigenetic features characteristic of L1 loci expressed in human cells.. **2022**, 0
- 625 Highly efficient activation of endogenous gene in grape using CRISPR/dCas9-based transcriptional activators.. **2022**, 1
- 624 Advances in Modeling Polyglutamine Diseases Using Genome Editing Tools.. **2022**, 11, 0
- 623 Gradients in gene essentiality reshape antibacterial research.. **2022**,

622	Development of a CRISPR interference system for selective gene knockdown in <i>Acidithiobacillus ferrooxidans</i> . 2021 , 133, 105-105	0
621	Model-based dynamic engineering of <i>Escherichia coli</i> for N-acetylglucosamine overproduction. 2022 , 3, 15-24	0
620	In Ovo Gain- and Loss-of-Function Approaches to Study Gut Morphogenesis.. 2022 , 2438, 163-181	1
619	Determinants of heritable gene silencing for KRAB-dCas9 ⁺ DNMT3 and Ezh2-dCas9 ⁺ DNMT3 hit-and-run epigenome editing.. 2022 ,	2
618	High-content CRISPR screening. 2022 , 2,	10
617	The ubiquitous catechol moiety elicits siderophore and angucycline production in <i>Streptomyces</i> . 2022 , 5,	0
616	CRISPR-Cas system in microbial hosts for terpenoid production.. 2022 , 1-18	0
615	Bifunctional optogenetic switch for improving shikimic acid production in <i>E. coli</i> .. 2022 , 15, 13	1
614	Synthetic metabolic pathways for conversion of CO into secreted short-to medium-chain hydrocarbons using cyanobacteria.. 2022 , 72, 14-23	1
613	Maybe you can turn me on: CRISPRa-based strategies for therapeutic applications.. 2022 , 79, 130	1
612	The use of new CRISPR tools in cardiovascular research and medicine.. 2022 ,	1
611	How to train your cell - Towards controlling phenotypes by harnessing the epigenome of Chinese hamster ovary production cell lines.. 2022 , 56, 107924	0
610	Advances in amplification-free detection of nucleic acid: CRISPR/Cas system as a powerful tool.. 2022 , 114593	1
609	Gene Editing with CRISPR/Cas Methodology and Thyroid Cancer: Where Are We?. 2022 , 14,	1
608	A programmable high-expression yeast platform responsive to user-defined signals.. 2022 , 8, eab15166	2
607	CRISPR Therapeutics for Duchenne Muscular Dystrophy.. 2022 , 23,	2
606	Synthetic metabolism approaches - a valuable resource for systems biology. 2022 , 30, 100417	0
605	dCas9-based gene editing for cleavage-free genomic knock-in of long sequences.. 2022 , 24, 268-278	3

604	Delivery Strategies for CRISPR/Cas Genome editing tool for Retinal Dystrophies: challenges and opportunities. 2022 ,	3
603	Next-Generation Cell Engineering Platform for Improving Recombinant Protein Production in Mammalian Cells. 2021 , 189-224	0
602	Tailoring Disease Resilience Crops through CRISPR/Cas. 2022 , 187-209	
601	Genomic Designing for Abiotic Stress Tolerance in Mungbean and Urdbean. 2022 , 271-343	
600	Potential of CRISPR/Cas9-Based Genome Editing in the Fields of Industrial Biotechnology: Strategies, Challenges, and Applications. 2022 , 667-690	0
599	Genome Editing Prospects to Develop Disease/Pest-Resistant Potato Varieties. 2022 , 413-434	
598	Recent Advances in Plant Gene Silencing Methods.. 2022 , 2408, 1-22	0
597	CRISPR Guides. 2022 , 227-240	
596	Development and Vision of CRISPR-Based Technology. 2022 , 1-22	
595	Genome Editing and Designer Crops for the Future.. 2022 , 2408, 37-69	1
594	GuideMaker: Software to design CRISPR-Cas guide RNA pools in non-model genomes.. 2022 , 11,	1
593	Current applications and future perspective of CRISPR/Cas9 gene editing in cancer.. 2022 , 21, 57	7
592	Different transcriptional responses by the CRISPRa system in distinct types of heterochromatin in <i>Drosophila melanogaster</i> .	
591	Antisense non-coding transcription represses the PHO5 model gene via remodelling of promoter chromatin structure.	
590	Combining CRISPRi and metabolomics for functional annotation of compound libraries.. 2022 ,	5
589	Past, Current, and Future Strategies to Target ERG Fusion-Positive Prostate Cancer.. 2022 , 14,	0
588	Assessment of mitophagy in human iPSC-derived cardiomyocytes.. 2022 , 1-14	1
587	Powerful CRISPR-Based Biosensing Techniques and Their Integration With Microfluidic Platforms.. 2022 , 10, 851712	0

586	CRISPR in cancer biology and therapy.. 2022,	11
585	Sequence Diversification Screens with CRISPR-Cas9-Guided Base Editors. 2022, 151-164	
584	Synthetic Biology Approaches for Improving Chemical Production in Cyanobacteria.. 2022, 10, 869195	1
583	CRISPR Inhibition of Essential Peptidoglycan Biosynthesis Genes in Mycobacterium abscessus and Its Impact on β -Lactam Susceptibility.. 2022, e0009322	1
582	Genetically Encoded Double-Stranded DNA-Based Nanostructure Folded by a Covalently Bivalent CRISPR/dCas System.. 2022,	1
581	Compact engineered human transactivation modules enable potent and versatile synthetic transcriptional control.	2
580	Epigenome editing and epigenetic gene regulation in disease phenotypes. 1	
579	, a Vintage Model with a Cutting-Edge Profile in Biotechnology.. 2022, 10,	2
578	CRISPRi screen for enhancing heterologous α -amylase yield in Bacillus subtilis.	0
577	DNA Repair Pathways in the Context of Therapeutic Genome Editing. 2022, 177-192	
576	Overcoming leak sensitivity in CRISPRi circuits using antisense RNA sequestration and regulatory feedback.	
575	Gene editing: from technologies to applications in research and beyond.. 2022,	0
574	Engineering the next-generation of CAR T-cells with CRISPR-Cas9 gene editing.. 2022, 21, 78	4
573	Specificity of CRISPR-Cas9 Gene Editing. 2022, 289-312	
572	De Novo Transcriptome Analysis Reveals Putative Genes Involved in Anthraquinone Biosynthesis in .. 2022, 13,	0
571	CRISPR-mediated Synergistic Epigenetic and Transcriptional Control.. 2022,	0
570	Breaking the Restriction Barriers and Applying CRISPRi as a Gene Silencing Tool in .. 2022, 10,	
569	Conditional gene silencing in the Antarctic bacterium Pseudoalteromonas haloplanktis TAC125.. 2022, 103939	0

568	In vitro analysis of genome-engineered muscle-derived stem cells for autoregulated anti-inflammatory and antifibrotic activity.. 2022,	
567	Application of CRISPR/Cas9 in Rapeseed for Gene Function Research and Genetic Improvement. 2022, 12, 824	0
566	Novel Insights into the Therapeutic Potential of Lung-Targeted Gene Transfer in the Most Common Respiratory Diseases.. 2022, 11,	2
565	Principles and Applications of CRISPR Toolkit in Virus Manipulation, Diagnosis, and Virus-Host Interactions.. 2022, 11,	1
564	CRISPR Detection and Research on Screening Mutant Gene of Moyamoya Disease Family Based on Whole Exome Sequencing.. 2022, 9, 846579	0
563	The outer mitochondrial membrane protein TMEM11 is a novel negative regulator of BNIP3/BNIP3L-dependent receptor-mediated mitophagy.	1
562	Applications of CRISPRi and CRISPRa in Drug Discovery. 2022, 139-150	0
561	Predicting base editing outcomes using position-specific sequence determinants.. 2022,	1
560	The physiology and genetics of bacterial responses to antibiotic combinations.. 2022,	3
559	Target residence of Cas9: challenges and opportunities in genome editing. 2022, 3, 57-69	
558	RNA polymerase pausing, stalling and bypass during transcription of damaged DNA: from molecular basis to functional consequences.. 2022,	0
557	Taming transposable elements in vertebrates: from epigenetic silencing to domestication.. 2022,	3
556	Genetic Engineering Technologies for Improving Crop Yield and Quality. 2022, 12, 759	0
555	Genome editing of probiotic bacteria: present status and future prospects. 1	1
554	CRISPR Cas. 2022, 19-46	
553	The PAF1 complex promotes 3' processing of pervasive transcripts.. 2022, 38, 110519	0
552	An Engineered Outer Membrane Defective Secreting Protective Antigens against through the Twin-Arginine Translocation Pathway as a Vaccine.. 2022, 32, 1-8	
551	Genome Editing Technology and Its Application to Metabolic Engineering in Rice.. 2022, 15, 21	0

550	Optogenetic tools for microbial synthetic biology.. 2022 , 107953	0
549	The WalRK two-component system is essential for proper cell envelope biogenesis in <i>Clostridioides difficile</i> .	
548	Development and Application of CRISPR-Cas Based Tools.. 2022 , 10, 834646	2
547	CRISPR and Cardiovascular Diseases.. 2022 ,	0
546	Harnessing cellular perception apparatus for smart metabolic reprogramming.	
545	Sequence-Specific Recognition of Double-Stranded DNA by Peptide Nucleic Acid Forming Double-Duplex Invasion Complex. 2022 , 12, 3677	0
544	Genome-wide analysis of somatic noncoding mutation patterns in cancer.. 2022 , 376, eabg5601	2
543	CRISPR/Cas9 and Nanotechnology Pertinence in Agricultural Crop Refinement.. 2022 , 13, 843575	0
542	Recombinase-mediated cassette exchange-based screening of a CRISPR/Cas9 library for enhanced recombinant protein production in human embryonic kidney cells: Improving resistance to hyperosmotic stress.. 2022 ,	0
541	SgRNA engineering for improved genome editing and expanded functional assays.. 2022 , 75, 102697	1
540	Modular engineering of coculture for efficient production of resveratrol from glucose and arabinose mixture.. 2022 , 7, 718-729	1
539	Data mining of <i>Saccharomyces cerevisiae</i> mutants engineered for increased tolerance towards inhibitors in lignocellulosic hydrolysates.. 2022 , 107947	1
538	CRISPR-Based Genetic Switches and Other Complex Circuits: Research and Application. 2021 , 11,	1
537	Determination of the Length of Target Recognition Sequence in sgRNA Required for CRISPR Interference. 2021 ,	
536	Distinct subcellular autophagy impairments in induced neurons from Huntington's disease patients.. 2021 ,	2
535	A New Class of Cell Wall-Recycling l,d-Carboxypeptidase Determines β -Lactam Susceptibility and Morphogenesis in <i>Acinetobacter baumannii</i> . 2021 , e0278621	0
534	A naturally DNase-free CRISPR-Cas12c enzyme silences gene expression.	0
533	Identifying cancer pathway dysregulations using differential causal effects.. 2021 ,	

532	Applications of CRISPR/Cas gene-editing technology in yeast and fungi.. 2021 , 204, 79	1
531	Systematic identification of genomic elements that regulate FCGR2A expression and harbor variants linked with autoimmune disease.. 2021 ,	0
530	Attachment of Enterohemorrhagic Escherichia coli to Host Cells Reduces O Antigen Chain Length at the Infection Site That Promotes Infection.. 2021 , 12, e0269221	1
529	miRNA- and lncRNA-Based Therapeutics for Non-Hodgkin's Lymphoma: Moving towards an RNA-Guided Precision Medicine.. 2021 , 13,	0
528	CRISPR-Based Approaches for the High-Throughput Characterization of Long Non-Coding RNAs.. 2021 , 7,	0
527	Somatic Lineage Reprogramming. 2021 ,	0
526	State-of-the-art CRISPR for in vivo and cell-based studies in Drosophila.. 2021 ,	2
525	A far-red light-inducible CRISPR-Cas12a platform for remote-controlled genome editing and gene activation. 2021 , 7, eabh2358	6
524	Strain engineering and bioprocessing strategies for biobased production of porphobilinogen in .. 2021 , 8, 122	
523	Gene editing and its applications in biomedicine.. 2022 , 65, 660	3
522	The use of base editing technology to characterize single nucleotide variants.. 2022 , 20, 1670-1680	0
521	Endometriosis organoids: prospects and challenges.. 2022 ,	0
520	Non-coding RNA LEVER sequestration of PRC2 can mediate long range gene regulation.. 2022 , 5, 343	
519	A multi-omic dissection of super-enhancer driven oncogenic gene expression programs in ovarian cancer.	
518	Activity-based annotation: the emergence of systems biochemistry.. 2022 ,	2
517	Overview of advances in CRISPR/deadCas9 technology and its applications in human diseases.. 2022 , 146518	0
516	Host F-Box Protein 22 Enhances the Uptake of Brucella by Macrophages and Drives a Sustained Release of Proinflammatory Cytokines through Degradation of the Anti-Inflammatory Effector Proteins of Brucella.. 2022 , e0006022	
515	Multiplexed genome regulation in vivo with hyper-efficient Cas12a.. 2022 ,	2

- 514 Genome-wide functional perturbation of human microsatellite repeats using engineered zinc finger transcription factors. **2022**, 2, 100119 2
- 513 Rational guide RNA engineering for small-molecule control of CRISPR/Cas9 and gene editing.. **2022**, 0
- 512 Insights to improve the plant nutrient transport by CRISPR/Cas system.. **2022**, 59, 107963 2
- 511 Image_1.tif. **2020**,
- 510 Table_1.docx. **2020**,
- 509 data_sheet_1.PDF. **2018**,
- 508 data_sheet_2.xlsx. **2018**,
- 507 data_sheet_3.xlsx. **2018**,
- 506 Data_Sheet_1.pdf. **2018**,
- 505 Data_Sheet_1.zip. **2020**,
- 504 Data_Sheet_2.docx. **2020**,
- 503 Image1.PDF. **2018**,
- 502 Data_Sheet_1.DOCX. **2020**,
- 501 Table_1.XLSX. **2020**,
- 500 Table_1.DOCX. **2021**,
- 499 Table_1.docx. **2020**,
- 498 Table_1.XLSX. **2020**,
- 497 Image_1.TIF. **2019**,

496 Image_2.TIF. 2019,

495 Image_3.TIF. 2019,

494 Table_1.docx. 2019,

493 Table_2.DOCX. 2019,

492 Data_Sheet_1.PDF. 2018,

491 Video_1.AVI. 2018,

490 Video_2.AVI. 2018,

489 Data_Sheet_1.pdf. 2020,

488 Image_1.pdf. 2018,

487 Table_1.DOCX. 2021,

486 Data_Sheet_1.CSV. 2019,

485 Table_1.XLSX. 2019,

484 Table_2.XLSX. 2019,

483 Table_1.XLSX. 2019,

482 Table_2.XLSX. 2019,

481 Table_3.XLSX. 2019,

480 Efficient Generation of CRISPR/Cas9-Based Mutants Supported by Fluorescent Seed Selection in Different Arabidopsis Accessions.. 2022, 2484, 161-182 ○

479 Recent advancements in CRISPR/Cas technology for accelerated crop improvement.. 2022, 255, 109 ○

478	PRKDC promotes hepatitis B virus transcription through enhancing the binding of RNA Pol II to cccDNA.. 2022 , 13, 404	0
477	Regulatory Considerations for Clinical Trial Applications with CRISPR-Based Medicinal Products.. 2022 ,	0
476	Generating Nonmosaic Mutants in Using CRISPR-Cas in Oocytes. 2021 ,	0
475	Screening of ETO2-GLIS2-induced Super Enhancers identifies targetable cooperative dependencies in acute megakaryoblastic leukemia.. 2022 , 8, eabg9455	1
474	A microRNA-gated thgRNA platform for multiplexed activation of gene expression in mammalian cells.. 2022 ,	0
473	CRISPR/Cas genome editing in grapevine: recent advances, challenges and future prospects. 2022 , 2, 1-10	0
472	CRISPR-Cas9 library screening approach for anti-cancer drug discovery: overview and perspectives.. 2022 , 12, 3329-3344	2
471	Genome-wide CRISPRi screening reveals regulators of Alzheimer's tau pathology shared between exosomal and vesicle-free tau seeds.	
470	Analysis of Xylose Operon from ATCC842 and Development of Tools for Gene Expression.. 2022 , 23,	
469	Natural and Experimental Rewiring of Gene Regulatory Regions.. 2022 ,	0
468	Cytokinins: A Genetic Target for Increasing Yield Potential in the CRISPR Era.. 2022 , 13, 883930	2
467	Co-expression of MEIOTIC-TOPOISOMERASE VIB-dCas9 with guide RNAs specific to a recombination hotspot is insufficient to increase crossover frequency in Arabidopsis.. 2022 ,	0
466	Type I-E CRISPR-Cas System as a Defense System in Saccharomyces cerevisiae.. 2022 , e0003822	
465	PAM-Expanded Streptococcus thermophilus Cas9 C-to-T and C-to-G Base Editors for Programmable Base Editing in Mycobacteria. 2022 ,	0
464	A Leak-Free Inducible CRISPRi/a System for Gene Functional Studies in Plasmodium falciparum.. 2022 , e0278221	0
463	Development of a gRNA Expression and Processing Platform for Efficient CRISPR-Cas9-Based Gene Editing and Gene Silencing in Candida tropicalis.. 2022 , e0005922	
462	Integrating CRISPR/Cas systems with programmable DNA nanostructures for delivery and beyond. 2022 , 104389	0
461	CRISPR/Cas therapeutic strategies for autosomal dominant disorders.. 2022 , 132,	0

- 460 CRISPR/Cas9 in Chronic Lymphocytic Leukemia. **2022**, 2, 928-936 1
- 459 Advance of Clustered Regularly Interspaced Short Palindromic Repeats-Cas9 System and Its Application in Crop Improvement. **2022**, 13, 1
- 458 Engineering cell morphology by CRISPR interference in *Acinetobacter baylyi* ADP1.
- 457 Genetic physical unclonable functions in human cells.. **2022**, 8, eabm4106
- 456 Plant Genome Editing: Advances and Prospects of Market-Ready Food Crops. 213-232
- 455 Recent advances in high-throughput metabolic engineering: Generation of oligonucleotide-mediated genetic libraries.. **2022**, 107970 1
- 454 Integrated genomics and chemical biology herald an era of sophisticated antibacterial discovery, from defining essential genes to target elucidation.. **2022**, 1
- 453 Application and Prospect of CRISPR/Cas9 Technology in Reversing Drug Resistance of Non-Small Cell Lung Cancer. **2022**, 13,
- 452 New Editing Tools for Gene Therapy in Inherited Retinal Dystrophies.. **2022**, 1
- 451 Specific knockdown of Htra2 by CRISPR-CasRx prevents acquired sensorineural hearing loss in mice. **2022**, 28, 643-655 0
- 450 New synthetic biology tools for metabolic control.. **2022**, 76, 102724 1
- 449 SynBioStrainFinder: A microbial strain database of manually curated CRISPR/Cas genetic manipulation system information for biomanufacturing.. **2022**, 21, 87 0
- 448 Epigenetic repression of STING by MYC promotes immune evasion and resistance to immune checkpoint inhibitors in triple negative breast cancer.. **2022**, 0
- 447 Synthetic biology and opportunities within agricultural crops. 0
- 446 Modulation of CRISPR/Cas12a trans-cleavage activity by various DNA-modifying enzymes. **2022**, 107606 0
- 445 The WalRK Two-Component System Is Essential for Proper Cell Envelope Biogenesis in *Clostridioides difficile*.. **2022**, e0012122 0
- 444 Recombineering in *Staphylococcus aureus*.. **2022**, 2479, 135-157
- 443 Genome Editing of *Corynebacterium glutamicum* Using CRISPR-Cpf1 System.. **2022**, 2479, 189-206

442	Synthetic biology and the regulatory roadmap for the commercialization of designer microbes. 2022 , 449-475	
441	Engineered gene circuits with reinforcement learning allow bacteria to master gameplaying.	0
440	Development of an Efficient C-to-T Base-Editing System and Its Application to Cellulase Transcription Factor Precise Engineering in Thermophilic Fungus <i>Myceliophthora thermophila</i> .	0
439	Cybergenetics: Theory and Applications of Genetic Control Systems. 2022 , 110, 631-658	3
438	Deep mutational scanning of essential bacterial proteins can guide antibiotic development.	0
437	Pediatric Sarcomas: The Next Generation of Molecular Studies. 2022 , 14, 2515	
436	The origin of unwanted editing byproducts in gene editing. 2022 ,	0
435	Paired guide RNA CRISPR-Cas9 screening for protein-coding genes and lncRNAs involved in transdifferentiation of human B-cells to macrophages. 2022 , 23,	0
434	Programmable Nucleic Acid-Binding Proteins-Based Nucleic Acid Detection and Biosensing Technologies. 2022 ,	
433	CRISPR-Cas-Based Gene Therapy to Target Viral Infections. 2022 , 85-125	0
432	CRISPRi chemical genetics and comparative genomics identify genes mediating drug potency in <i>Mycobacterium tuberculosis</i> . 2022 , 7, 766-779	3
431	CRISPR-mediated protein-tagging signal amplification systems for efficient transcriptional activation and repression in <i>Saccharomyces cerevisiae</i> .	1
430	Next-Generation Diagnostic with CRISPR/Cas: Beyond Nucleic Acid Detection. 2022 , 23, 6052	1
429	A Novel Breakthrough in <i>Leptospira</i> spp. Mutagenesis: Knockout by Combination of CRISPR/Cas9 and Non-homologous End-Joining Systems. 2022 , 13,	0
428	Speciation and adaptation research meets genome editing. 2022 , 377,	0
427	CRISPR-Cas Systems-Based Bacterial Detection: A Scoping Review. 2022 , 12, 1335	1
426	Epigenetic regulation of T cell exhaustion.	3
425	A <i>Shigella</i> sp. variant is causally linked to intractable functional constipation.	0

- 424 Use of CRISPR/Cas9 with homology-directed repair to silence the human topoisomerase II β intron-19 5 β splice site: Generation of etoposide resistance in human leukemia K562 cells. **2022**, 17, e0265794 1
- 423 CRISPR base editing of cis-regulatory elements enables target gene perturbations.
- 422 Engineering the next generation of cell-based therapeutics. 4
- 421 Improved prediction of bacterial CRISPRi guide efficiency through data integration and automated machine learning. 0
- 420 Tips, Tricks, and Potential Pitfalls of CRISPR Genome Editing in *Saccharomyces cerevisiae*. **2022**, 10, 1
- 419 Engineering a CRISPR interference system targeting AcrAB-TolC efflux pump to prevent multidrug resistance development in *Escherichia coli*. 1
- 418 A naturally DNase-free CRISPR-Cas12c enzyme silences gene expression. **2022**, 82, 2148-2160.e4 0
- 417 Utilizing RNA origami scaffolds in *Saccharomyces cerevisiae* for dCas9-mediated transcriptional control. 1
- 416 A CRISPRi mediated self-inducible system for dynamic regulation of TCA cycle and improvement of itaconic acid production in *Escherichia coli*. **2022**, 0
- 415 A bacterial dual positive and negative selection system for dCas9 activity. **2022**, 17, e0269270
- 414 Gene Silencing through CRISPR Interference in *Mycoplasmas*. **2022**, 10, 1159 0
- 413 Genetic therapeutic advancements for Dravet Syndrome. **2022**, 132, 108741 1
- 412 Model-Based Design of Synthetic Antisense RNA for Predictable Gene Repression. **2022**, 111-124 0
- 411 Design, Characterization, and Application of Targeted Gene Activation in Bacteria Using a Modular CRISPRa System. **2022**, 203-215
- 410 RNP-Based Control Systems for Genetic Circuits in Synthetic Biology Beyond CRISPR. **2022**, 1-31
- 409 Slow vision: Measuring melanopsin-mediated light effects in animal models. **2022**, 0
- 408 Cellular and molecular neurobiology of autism spectrum disorder. **2022**, 215-244 0
- 407 Inhibition of karyopherin β -mediated nuclear import disrupts oncogenic lineage- defining transcription factor activity in small cell lung cancer.

406	Repression of HIV-1 reactivation mediated by CRISPR/dCas9-KRAB in lymphoid and myeloid cell models. 2022 , 19,	1
405	CRISPR activation screen identifies TGFβ-associated PEG10 as a crucial tumor suppressor in Ewing sarcoma. 2022 , 12,	
404	Recent Advances in Cancer Drug Discovery Through the Use of Phenotypic Reporter Systems, Connectivity Mapping, and Pooled CRISPR Screening. 13,	
403	CRISPR Modeling and Correction of Cardiovascular Disease. 2022 , 130, 1827-1850	4
402	Recent Advances in Directed Yeast Genome Evolution. 2022 , 8, 635	0
401	CRISPR-Cas9-Based Technology and Its Relevance to Gene Editing in Parkinson's Disease. 2022 , 14, 1252	2
400	CRISPR-Based Approaches for Gene Regulation in Non-Model Bacteria. 4,	0
399	Application of CRISPR-Mediated Gene Editing for Crop Improvement.	2
398	Finding New Fundamental Pieces for the Bacterial Cell Division Puzzle.	
397	Reprogramming Microbial CO ₂ -Metabolizing Chassis With CRISPR-Cas Systems. 10,	0
396	Amoxicillin-resistant <i>Streptococcus pneumoniae</i> can be resensitized by targeting the mevalonate pathway as indicated by sCRilecs-seq. 11,	0
395	Establishment of genetic tools for genomic DNA engineering of <i>Halomonas</i> sp. KM-1, a bacterium with potential for biochemical production. 2022 , 21,	1
394	On the trail of auxin: reporters and sensors.	
393	Programmable Mixed-Signal Biocomputers in Mammalian Cells.	
392	Dissecting Plant Gene Functions Using CRISPR Toolsets for Crop Improvement. 2022 , 70, 7343-7359	1
391	Combinatorial CRISPR Interference Library for Enhancing 2,3-BDO Production and Elucidating Key Genes in Cyanobacteria. 10,	1
390	Systematic HIV-1 promoter targeting with CRISPR/dCas9-VPR reveals optimal region for activation of the latent provirus. 2022 , 103,	0
389	HideRNAs protect against CRISPR-Cas9 re-cutting after successful single base-pair gene editing. 2022 , 12,	

- 388 DNA origami-based single-molecule CRISPR machines for spatially resolved searching.
- 387 DNA origami-based single-molecule CRISPR machines for spatially resolved searching. 1
- 386 CRISPR-Cas-Systeme der Klasse 1: Genome Engineering und Silencing. **2022**, 28, 370-373
- 385 Origin of the genome editing systems: application for crop improvement.
- 384 dCas9-mediated dysregulation of gene expression in human induced pluripotent stem cells during primitive streak differentiation. **2022**, 73, 70-81
- 383 Genome edited wheat- current advances for the second green revolution. **2022**, 60, 108006 0
- 382 Novel Nanotechnology-Based Vector Delivery in CRISPR System for Transgene-Free Editing. **2022**, 279-294
- 381 Newer therapeutic options for inherited retinal diseases: Gene and cell replacement therapy. **2022**, 70, 2316 0
- 380 Enhanced Myogenesis by Silencing Myostatin with Nonviral Delivery of dCas9 Ribonucleoprotein Complex.
- 379 CRISPR/dCas9-based metabolic pathway engineering for the systematic optimization of exopolysaccharide biosynthesis in *Streptococcus thermophilus*. **2022**, 0
- 378 Outer Membrane Vesicles From The Gut Microbiome Contribute to Tumor Immunity by Eliciting Cross-Reactive T Cells. 12, 1
- 377 Engineering Glucose-to-Glycerol Pathway in *Klebsiella pneumoniae* and Boosting 3-Hydroxypropionic Acid Production Through CRISPR Interference. 10, 0
- 376 Epigenetic Aspects and Prospects in Autoimmune Hepatitis. 13, 0
- 375 Recent advances in yeast genome evolution with stress tolerance for green biological manufacturing. 1
- 374 CASPER: An Integrated Software Platform for Rapid Development of CRISPR Tools.
- 373 Genome centric engineering using ZFNs, TALENs and CRISPR-Cas9 systems for trait improvement and disease control in Animals. 2
- 372 Transcriptional Activation of Biosynthetic Gene Clusters in Filamentous Fungi. 10, 2
- 371 Gene Editing to Tackle Facioscapulohumeral Muscular Dystrophy. 4,

370	Development and application of CRISPR -based genetic tools in Bacillus species and Bacillus phages.	0
369	Message in hand: the application of CRISPRi, RNAi, and LncRNA in adenocarcinoma. 2022 , 39,	
368	Programmable Transcriptional Modulation with a Structured RNA-Mediated CRISPR-dCas9 Complex.	
367	Recent Advances in Improving Gene-Editing Specificity through CRISPR-Cas9 Nuclease Engineering. 2022 , 11, 2186	0
366	CRISPR-Cas12a nucleases function with structurally engineered crRNAs: SynThetic trAcrRNA. 2022 , 12,	1
365	A scalable organoid model of human autosomal dominant polycystic kidney disease for disease mechanism and drug discovery. 2022 , 29, 1083-1101.e7	3
364	Different transcriptional responses by the CRISPRa system in distinct types of heterochromatin in <i>Drosophila melanogaster</i> . 2022 , 12,	
363	Repurposing CRISPR RNA-guided integrases system for one-step, efficient genomic integration of ultra-long DNA sequences.	1
362	Systematic comparison and rational design of theophylline riboswitches for efficient gene repression.	
361	Expanding the scope of bacterial CRISPR activation with PAM-flexible dCas9 variants.	
360	Activating natural product synthesis using CRISPR interference and activation systems in <i>Streptomyces</i> .	0
359	Current Techniques to Study Beneficial Plant-Microbe Interactions. 2022 , 10, 1380	2
358	High-Throughput CRISPR Screening in Hematological Neoplasms. 2022 , 14, 3612	0
357	OMICs Technologies for Natural Compounds-based Drug Development. 2022 , 22,	1
356	DNA nicks induce mutational signatures associated with BRCA1 deficiency. 2022 , 13,	1
355	A multi-omic dissection of super-enhancer driven oncogenic gene expression programs in ovarian cancer. 2022 , 13,	2
354	Designer bacterial cell factories for improved production of commercially valuable non-ribosomal peptides. 2022 , 108023	0
353	Gene Editing and Rett Syndrome: Does It Make the Cut?.	

- 352 Employment of the CRISPR/Cas9 system to improve cellulase production in *Trichoderma reesei*. **2022**, 60, 108022 0
- 351 CRISPR-Cas mediated genome engineering of cyanobacteria. **2022**,
- 350 Functional genomic tools for emerging model species. **2022**, 1
- 349 Transcriptional programming in a *Bacteroides* consortium. **2022**, 13, 1
- 348 Implementation of a tunable t-CRISPRi system for gene regulation in *Giardia duodenalis*. **2022**, 122, 102641
- 347 Systematic comparison of CRISPR-based transcriptional activators uncovers gene-regulatory features of enhancer-promoter interactions. **2022**, 50, 7842-7855 0
- 346 RISC-y Business: Limitations of Short Hairpin RNA-Mediated Gene Silencing in the Brain and a Discussion of CRISPR/Cas-Based Alternatives. 15, 0
- 345 CRISPR-Based Genome Editing for Nutrient Enrichment in Crops: A Promising Approach Toward Global Food Security. 13, 1
- 344 Inducible expression of large gRNA arrays for multiplexed CRISPRai applications. **2022**, 13, 0
- 343 Modular reconstruction and optimization of the trans-4-hydroxy-L-proline synthesis pathway in *Escherichia coli*. **2022**, 21,
- 342 Precision targeting of food biofilm-forming genes by microbial scissors: CRISPR-Cas as an effective modulator. 13,
- 341 An efficient CRISPR /Cas9-based genome editing system for alkaliphilic *Bacillus* sp. N16 -5 and application in engineering xylose utilization for D -lactic acid production.
- 340 Nested epistasis enhancer networks for robust genome regulation. 2
- 339 Comprehending the evolution of gene editing platforms for crop trait improvement. 13, 0
- 338 From Evolution to Revolution: Accelerating Crop Domestication Through Genome Editing. 0
- 337 Overcoming Leak Sensitivity in CRISPRi Circuits Using Antisense RNA Sequestration and Regulatory Feedback. 1
- 336 Developing Bottom-Up Induced Pluripotent Stem Cell Derived Solid Tumor Models Using Precision Genome Editing Technologies. **2022**, 5, 517-535 0
- 335 Application of CRISPR-Cas9 Gene Editing for HIV Host Factor Discovery and Validation. **2022**, 11, 891 0

- 334 Direct conversion of somatic cells into insulin-producing cells by user-defined multiplex-epigenetic-engineering vector (MEEV-1)
- 333 Clustered regularly interspaced short palindromic repeats-Cas system: diversity and regulation in Enterobacteriaceae.
- 332 An Overview: CRISPR/Cas-Based Gene Editing for Viral Vaccine Development.
- 331 Filamentous morphology of bacterial pathogens: regulatory factors and control strategies. 0
- 330 Development of Artificial System to Induce Chromatin Loosening in *Saccharomyces cerevisiae*. **2022**, 12, 1138 1
- 329 The application of CRISPR /Cas mediated gene editing in synthetic biology: Challenges and optimizations. 10,
- 328 CRISPR base editing of cis-regulatory elements enables the perturbation of neurodegeneration-linked genes. **2022**, 1
- 327 Target residence of Cas9-sgRNA influences DNA double-strand break repair pathway choices in CRISPR/Cas9 genome editing. **2022**, 23, 0
- 326 Loss of 2-Cys-Prx affects cellular ultrastructure, disturbs redox poise and impairs photosynthesis in cyanobacteria. 1
- 325 New Advances in Using Virus-like Particles and Related Technologies for Eukaryotic Genome Editing Delivery. **2022**, 23, 8750
- 324 A continuous epistasis model for predicting growth rate given combinatorial variation in gene expression and environment.
- 323 PIWI-Interacting RNA (piRNA) and Epigenetic Editing in Environmental Health Sciences. 1
- 322 CRISPR interference for Sequence-Specific Regulation of Fibroblast Growth Factor Receptor A in *Schistosoma mansoni*.
- 321 Selective TnsC recruitment enhances the fidelity of RNA-guided transposition. 0
- 320 Engineering cell morphology by CRISPR interference in *Acinetobacter baylyi* 'ADP1'. 1
- 319 CRISPR-RNAa: targeted activation of translation using dCas13 fusions to translation initiation factors. **2022**, 50, 8986-8998 0
- 318 A versatile Cas12k-based genetic engineering toolkit (C12KGET) for metabolic engineering in genetic manipulation-deprived strains. **2022**, 50, 8961-8973 1
- 317 CRISPR/dCas9 for hepatic fibrosis therapy: implications and challenges.

316	Applications of CRISPR-Cas9 in Alzheimer's Disease and Related Disorders. 2022 , 23, 8714	1
315	Deciphering causal genomic templates of complex molecular phenotypes.	
314	CRISPR/Cas Systems-Inspired Nano/Biosensors for Detecting Infectious Viruses and Pathogenic Bacteria. 2200794	0
313	Live-cell imaging of genomic loci with Cas9 variants. 2100381	0
312	Inducible CRISPR epigenome systems mimic cocaine induced bidirectional regulation of Nab2 and Egr3.	0
311	Engineering diverse fatty acid compositions of phospholipids in Escherichia coli. 2022 , 74, 11-23	2
310	Dynamic and single cell characterization of a CRISPR-interference toolset in Pseudomonas putida KT2440 for β -ketoadipate production from p-coumarate. 2022 , 15, e00204	0
309	New Directions for Epigenetics: Application of Engineered DNA-binding Molecules to Locus-specific Epigenetic Research. 2023 , 843-868	0
308	Plant Epigenomics. 2023 , 263-286	0
307	Genome editing in cancer: Challenges and potential opportunities. 2023 , 21, 394-402	0
306	Improving isoprenol production via systematic CRISPRi screening in engineered Escherichia coli. 2022 , 24, 6955-6964	0
305	CRISPR-Cas9: current and future utilities in ocular diseases. 2022 , 615-623	0
304	A synthetic biology approach to study carotenoid production in Corynebacterium glutamicum: Read-out by a genetically encoded biosensor combined with perturbing native gene expression by CRISPRi. 2022 , 383-419	0
303	The Molecular Toolset and Techniques Required to Build Cyanobacterial Cell Factories. 2022 ,	0
302	Off-Target Effects of Crop Genome Editing and Its Minimization. 2022 , 185-208	0
301	Genome Editing Is Revolutionizing Crop Improvement. 2022 , 3-41	0
300	Reprogramming CRISPR-Mediated RNA Interference for Silencing of Essential Genes in Sulfolobales. 2022 , 177-201	0
299	CRISPR-Cas9/Cpf1-Based Multigene Editing in Crops. 2022 , 67-94	0

- 298 The Use of CRISPR Technologies for Crop Improvement in Maize. **2022**, 271-294 0
- 297 CRISPR-Cas Technology: A Genome-Editing Powerhouse for Molecular Plant Breeding. **2022**, 803-879 0
- 296 CRISPR Interference as a Tool to Repress Gene Expression in *Haloferax volcanii*. **2022**, 57-85 0
- 295 BEtarget: A versatile web-based tool to design guide RNAs for base editing in plants. **2022**, 20, 4009-4014 0
- 294 Long non-coding RNA in Non-alcoholic fatty liver disease. **2022**, 1-35 0
- 293 CRISPR/Cas-Based Genome Editing to Enhance Heat Stress Tolerance in Crop Plants. **2022**, 281-297 0
- 292 FOXR2 Is an Epigenetically Regulated Pan-Cancer Oncogene That Activates ETS Transcriptional Circuits. **2022**, 82, 2980-3001 1
- 291 Emerging CRISPR Technologies. 0
- 290 CRISPR Screens. **2022**, 213-232 0
- 289 How to Completely Squeeze a Fungus: Advanced Genome Mining Tools for Novel Bioactive Substances. **2022**, 14, 1837 1
- 288 CRISPR/dCas-mediated gene activation toolkit development and its application for parthenogenesis induction in maize. **2022**, 100449 0
- 287 RNA therapeutics: updates and future potential. 1
- 286 Past, Present, and Future of Genome Modification in *Escherichia coli*. **2022**, 10, 1835 1
- 285 Oxidative stress-mediated beta cell death and dysfunction as a target for diabetes management. 13, 0
- 284 Efficient Targeted DNA Methylation with dCas9-Coupled DNMT3A-DNMT3L Methyltransferase. **2023**, 177-188 0
- 283 Quantification of Genome Editing and Transcriptional Control Capabilities Reveals Hierarchies among Diverse CRISPR/Cas Systems in Human Cells. 0
- 282 A comprehensive overview of CRISPR/Cas 9 technology and application thereof in drug discovery. 1
- 281 Activation of lncRNA NEAT1 leads to survival advantage of multiple myeloma cells by supporting a positive regulatory loop with DNA repair proteins. 1

280	RSC and GRFs confer promoter directionality by restricting divergent noncoding transcription. 2022 , 5, e202201394	0
279	Genome-scale mapping of functional genes and loci in bacteria for industrial phenotypes.	0
278	Chemically inducible split protein regulators for mammalian cells.	0
277	Advances in CRISPR/Cas9. 2022 , 2022, 1-13	2
276	Characterization of the self-targeting Type IV CRISPR interference system in <i>Pseudomonas oleovorans</i> .	0
275	Reversibility and Therapeutic Development for Neurodevelopmental Disorders, Insights from Genetic Animal Models. 2022 , 114562	1
274	Cas9-mediated endogenous plasmid loss in <i>Borrelia burgdorferi</i> .	0
273	CRISPRactivation-SMS, a message for PAM sequence independent gene up-regulation in <i>Escherichia coli</i> .	0
272	CRISPR/Cas9 in the era of nanomedicine and synthetic biology. 2022 , 103375	0
271	Targeted Manipulation of Histone Modification in Medaka Embryos. 2023 , 279-293	0
270	Phytoremediation and sequestration of soil metals using the CRISPR/Cas9 technology to modify plants: a review.	3
269	Transgenerationally Transmitted DNA Demethylation of a Spontaneous Epialleles Using CRISPR/dCas9-TET1cd Targeted Epigenetic Editing in Arabidopsis. 2022 , 23, 10492	0
268	Recent Progress and Future Prospect of CRISPR/Cas-Derived Transcription Activation (CRISPRa) System in Plants. 2022 , 11, 3045	1
267	Direct evidence of CRISPR/Cas9-mediated mitochondrial genome editing. 2022 , 100329	0
266	Development and validation of a CRISPR interference system for gene regulation in <i>Campylobacter jejuni</i> . 2022 , 22,	0
265	RNA-Responsive gRNAs for Controlling CRISPR Activity: Current Advances, Future Directions, and Potential Applications.	0
264	Genetic Circuit Design in Rhizobacteria. 2022 , 2022, 1-30	0
263	Optimised whole-genome CRISPR interference screens identify ARID1A-dependent growth regulators in human induced pluripotent stem cells.	0

- 262 The HASTER lncRNA promoter is a cis-acting transcriptional stabilizer of HNF1A. ○
- 261 A logic OR-gate composed of a blue light-induced CRISPR/dCas9 system and a Tet-on system activates cancer suppressor genes to inhibit the growth of cutaneous squamous cell carcinoma cells. **2022**, 2, ○
- 260 The expanding CRISPR toolbox for natural product discovery and engineering in filamentous fungi. ○
- 259 How to Detect CRISPR with CRISPR - Employing SHERLOCK for Doping Control Purposes. ○
- 258 Flavivirus Host Interaction Landscape Visualized through Genome-Wide CRISPR Screens. **2022**, 14, 2164 ○
- 257 IbpAB small heat shock proteins are not host factors for bacteriophage ϕ X174 replication. ○
- 256 Investigating the roles for essential genes in the regulation of the circadian clock in *Synechococcus elongatus* using CRISPR interference. ○
- 255 CasPlay provides a gRNA-barcoded CRISPR-based display platform for antibody repertoire profiling. **2022**, 2, 100318 ○
- 254 Efficient Suppression of Natural Plasmid-Borne Gene Expression in Carbapenem-Resistant *Klebsiella pneumoniae* Using a Compact CRISPR Interference System. ○
- 253 Base and Prime Editing in the Retina From Preclinical Research toward Human Clinical Trials. **2022**, 23, 12375 1
- 252 Point-of-care CRISPR/Cas biosensing technology: A promising tool for preventing the possible COVID-19 resurgence caused by contaminated cold-chain food and packaging. ○
- 251 Missing Causality and Heritability of Autoimmune Hepatitis. ○
- 250 Eco-Friendly Biocontrol Strategies of *Alternaria* Phytopathogen Fungus: A Focus on Gene-Editing Techniques. **2022**, 12, 1722 ○
- 249 G-quadruplex-guided RNA engineering to modulate CRISPR-based genomic regulation. ○
- 248 A genome-wide CRISPR interference screen using an engineered trafficking biosensor reveals a role for RME-8 in opioid receptor regulation. ○
- 247 Opportunities and challenges with CRISPR-Cas mediated homologous recombination based precise editing in plants and animals. 1
- 246 Advances in approaches to study cell-type specific cortical circuits throughout development. 16, ○
- 245 CRISPR-Cas9-based Strategies for Acute Lymphoblastic Leukemia Therapy. ○

- 244 Antisense non-coding transcription represses the PHO5 model gene at the level of promoter chromatin structure. **2022**, 18, e1010432 ○
- 243 Perturbation of Gene Regulation by Genome Editing. **2023**, 59-68 ○
- 242 Application of CRISPR for In Vivo Mouse Cancer Studies. **2022**, 14, 5014 ○
- 241 Discovering DNA Methylation, the History and Future of the Writing on DNA. ○
- 240 Improved chemical and isotopic labeling of biomembranes in *Bacillus subtilis* by leveraging CRISPRi inhibition of beta-ketoacyl-ACP synthase (fabF). 9, ○
- 239 A Reverse Chromatin Immunoprecipitation Technique Based on the CRISPR-dCas9 System. ○
- 238 An overview of structural approaches to study therapeutic RNAs. 9, ○
- 237 Identification of acetic acid sensitive strains through biosensor-based screening of a *Saccharomyces cerevisiae* CRISPRi library. **2022**, 21, ○
- 236 Development and Applications of CRISPR/Cas9-Based Genome Editing in *Lactobacillus*. **2022**, 23, 12852 ○
- 235 The Potential of Novel Gene Editing-Based Approaches in Forages and Rumen Archaea for Reducing Livestock Methane Emissions. **2022**, 12, 1780 ○
- 234 CRISPR Activation/Interference Screen to Identify Genetic Networks in HDAC-Inhibitor-Resistant Cells. **2023**, 429-454 ○
- 233 Advanced genomics and clinical phenotypes in psoriatic arthritis. **2022**, 101665 ○
- 232 Gene regulatory and gene editing tools and their applications for retinal diseases and neuroprotection: From proof-of-concept to clinical trial. 16, ○
- 231 Therapeutic modulation of gene expression in the disease state: Treatment strategies and approaches for the development of next-generation of the epigenetic drugs. 10, ○
- 230 Exploring and engineering PAM-diverse *Streptococci* Cas9 for PAM-directed bifunctional and titratable gene control in bacteria. **2022**, ○
- 229 A machine learning model trained on a high-throughput antibacterial screen increases the hit rate of drug discovery. **2022**, 18, e1010613 ○
- 228 Advances in CRISPR therapeutics. ○
- 227 Unraveling the mechanisms of intrinsic drug resistance in *Mycobacterium tuberculosis*. 12, ○

226	Molecular basis of FAAH-OUT-associated human pain insensitivity.	0
225	PEGG: A computational pipeline for rapid design of prime editing guide RNAs and sensor libraries.	0
224	Developing Genetic Engineering Techniques for Control of Seed Size and Yield. 2022 , 23, 13256	0
223	CRISPRi screening reveals regulators of tau pathology shared between exosomal and vesicle-free tau. 2023 , 6, e202201689	0
222	Hereditary variants of unknown significance in African American women with breast cancer. 2022 , 17, e0273835	0
221	Vacuolin-1 enhances RA-induced differentiation of human myeloblastic leukemia cells: evidence for involvement of a CD11b/FAK/LYN/SLP-76 axis subject to endosomal regulation that drives late differentiation steps. 2022 , 12,	0
220	Genome-wide base editor screen identifies regulators of protein abundance in yeast. 11,	1
219	Profiling cell envelope-antibiotic interactions reveals vulnerabilities to β -lactams in a multidrug-resistant bacterium.	0
218	Fitness and functional landscapes of the <i>E. coli</i> RNase III gene.	0
217	Human variation in population-wide gene expression data predicts gene perturbation phenotype. 2022 , 25, 105328	0
216	Application of CRISPR/Cas system in cereal improvement for biotic and abiotic stress tolerance. 2022 , 256,	0
215	A direct enzymatic evaluation platform (DEEP) to fine-tuning pyridoxal 5'-phosphate-dependent proteins for cadaverine production.	0
214	A CRISPRi-based genetic resource to study essential <i>Staphylococcus aureus</i> genes.	0
213	CRISPRi-enhanced direct photosynthetic conversion of carbon dioxide to succinic acid by metabolically engineered cyanobacteria. 2022 , 366, 128131	1
212	In vivo delivery of CRISPR-Cas9 genome editing components for therapeutic applications. 2022 , 291, 121876	1
211	Isobutanol production by combined in vivo and in vitro metabolic engineering. 2022 , 15, e00210	0
210	A comprehensive study on microbial-surfactants from bioproduction scale-up toward electrokinetics remediation of environmental pollutants: Challenges and perspectives. 2023 , 311, 136979	0
209	The evaluation of active transcriptional repressor domain for CRISPRi in plants. 2023 , 851, 146967	1

208	Transcriptomics and genetic engineering. 2023 , 43-65	0
207	Gene editing hPSCs for modeling neurological disorders. 2023 , 289-311	0
206	Resistance to genetic control. 2023 , 299-327	0
205	New Cas Endonuclease Variants Broadening the Scope of the CRISPR Toolbox. 2022 , 133-141	0
204	Multiplexed Genome Editing in Plants Using CRISPR/Cas-Based Endonuclease Systems. 2022 , 143-169	1
203	Genome Editing: A Review of the Challenges and Approaches. 2022 , 71-101	0
202	Biosensor-assisted titratable CRISPRi high-throughput (BATCH) screening for over-production phenotypes. 2023 , 75, 58-67	0
201	Applications of CRISPR/Cas9 in agriculture, nutrition, health and disease. 2019 , 17, 30-35	0
200	Expanding the Scope of Bacterial CRISPR Activation with PAM-Flexible dCas9 Variants.	0
199	CRISPR/Cas9 Genome-Editing Technology and Potential Clinical Application in Gastric Cancer. 2022 , 13, 2029	0
198	Design of artificial small regulatory trans-RNA for gene knockdown in <i>Bacillus subtilis</i> . 2022 ,	0
197	High-Fidelity Cytosine Base Editing in a GC-Rich <i>Corynebacterium glutamicum</i> with Reduced DNA Off-Target Editing Effects.	0
196	Essential Gene Phenotypes Reveal Antibiotic Mechanisms and Synergies in <i>Acinetobacter baumannii</i> .	0
195	Gene expression changes during the evolution of the tetrapod limb.	0
194	A CRISPR Path to Finding Vulnerabilities and Solving Drug Resistance: Targeting the Diverse Cancer Landscape and Its Ecosystem. 2200014	0
193	Co-production of l-Lysine and Heterologous Squalene in CRISPR/dCas9-Assisted <i>Corynebacterium glutamicum</i> .	0
192	Site-specific genome editing in treatment of inherited diseases: possibility, progress, and perspectives. 2022 ,	0
191	CRISPR-Cas9 Technology for the Creation of Biological Avatars Capable of Modeling and Treating Pathologies: From Discovery to the Latest Improvements. 2022 , 11, 3615	0

- 190 Shifted PAMs generate DNA overhangs and enhance SpCas9 post-catalytic complex dissociation. ○
- 189 Transcription factor antagonism regulates heterogeneity in embryonic stem cell states. **2022**, ○
- 188 Enhanced immunogenicity of Mycobacterium bovis BCG through CRISPRi mediated depletion of AftC. **2022**, 8, 100088 ○
- 187 Biofabrication of synthetic human liver tissue with advanced programmable functions. **2022**, 25, 105503 ○
- 186 Integration of CRISPR/Cas9 with artificial intelligence for improved cancer therapeutics. **2022**, 20, 1
- 185 Current Strategies of Muscular Dystrophy Therapeutics: An Overview. **2023**, 3-30 ○
- 184 Bidirectional epigenetic editing reveals hierarchies in gene regulation. ○
- 183 rAAV-CRISPRa therapy corrects Rai1 haploinsufficiency and rescues selective disease features in Smith-Magenis syndrome mice. **2022**, 102728 ○
- 182 Current strategies employed in the manipulation of gene expression for clinical purposes. **2022**, 20, ○
- 181 Implementation of a mycobacterial CRISPRi platform in Mycobacterium abscessus and demonstration of the essentiality of ftsZ. **2023**, 138, 102292 ○
- 180 Spinal interneurons and cellular engineering. **2023**, 423-444 ○
- 179 Genetic switches based on nucleic acid strand displacement. **2023**, 79, 102867 1
- 178 Multiplexing with CRISPR-Cas Arrays. **2022**, ○
- 177 Harnessing Interactional Sensory Genes for Rationally Reprogramming Chaotic Metabolism. **2022**, 2022, ○
- 176 Genome editing. **2022**, 12, ○
- 175 Cas9-mediated endogenous plasmid loss in Borrelia burgdorferi. **2022**, 17, e0278151 ○
- 174 Application of combined CRISPR screening for genetic and chemical-genetic interaction profiling in Mycobacterium tuberculosis. **2022**, 8, ○
- 173 Gene Editing Technologies to Target HBV cccDNA. **2022**, 14, 2654 ○

- 172 Tumor-intrinsic NLRP3-HSP70-TLR4 axis drives premetastatic niche development and hyperprogression during antiPD-1 immunotherapy. **2022**, 14, ○
- 171 CRISPR-Cas System: A Tool to Eliminate Drug-Resistant Gram-Negative Bacteria. **2022**, 15, 1498 ○
- 170 High-content CRISPR screening in tumor immunology. 13, ○
- 169 TEMPO enables sequential genetic labeling and manipulation of vertebrate cell lineages. **2022**, ○
- 168 CRISPRi in *Deinococcus radiodurans*. ○
- 167 Tuning of Gene Expression in *Clostridium phytofermentans* Using Synthetic Promoters and CRISPRi. **2022**, 11, 4077-4088 ○
- 166 CRISPRi-FGP: web-based genome-scale CRISPRi sgRNA design and validation tool in prokaryotes. ○
- 165 Multiplexed engineering and precision gene editing in cellular immunotherapy. 13, ○
- 164 High-throughput retrieval of target sequences from complex clone libraries using CRISPRi. ○
- 163 Genes in pediatric pulmonary arterial hypertension and the most promising BMP2 gene therapy. 13, ○
- 162 An efficient CRISPR interference-based prediction method for synergistic/additive effects of novel combinations of anti-tuberculosis drugs. **2022**, 168, ○
- 161 CRISPR/Cas9: a tool to eradicate HIV-1. **2022**, 19, ○
- 160 CRISPR screens for functional interrogation of immunity. ○
- 159 A CRISPR-dCas9 System for Assaying and Selecting for RNase III Activity In Vivo in *Escherichia coli*. 1 ○
- 158 Single and multiplexed gene repression in solventogenic *Clostridium* via Cas12a-based CRISPR interference. **2022**, ○
- 157 Optimization of CRISPR-Cas system for clinical cancer therapy. ○
- 156 Genetic Tools for Studying the Roles of Sphingolipids in Viral Infections. **2023**, 1-16 ○
- 155 Plant Genome Editing. **2022**, 205-216 ○

- 154 A Decade of CRISPR-Cas Genome Editing in *C. elegans*. **2022**, 23, 15863
- 153 Common Assays in Mammalian Golgi Studies. **2023**, 303-332
- 152 Enabling Precision Medicine with CRISPR-Cas Genome Editing Technology: A Translational Perspective. **2023**, 315-339
- 151 CRISPRi-Mediated Gene Suppression Reveals Putative Reverse Transcriptase Gene PA0715 to Be a Global Regulator of *Pseudomonas aeruginosa*. Volume 15, 7577-7599
- 150 CRISPR Interference in Regulation of Bacterial Gene Expression. **2022**, 56, 823-829
- 149 CRISPR-Mediated Genome Engineering in Cell Lines. **2023**, 267-278
- 148 Intelligent nanotherapeutic strategies for the delivery of CRISPR system. **2022**,
- 147 Polarity of the CRISPR roadblock to transcription. **2022**, 29, 1217-1227
- 146 De novo engineering of a bacterial lifestyle program.
- 145 An Overview of Genome Editing in Cardiovascular and Metabolic Diseases. **2023**, 3-16
- 144 Thou shalt not cleave DNA—only repress transcription: A compact Cas protein representing a new CRISPR-Cas subtype. **2022**, 82, 4403-4404
- 143 The miniature CRISPR-Cas12m effector binds DNA to block transcription. **2022**, 82, 4487-4502.e7
- 142 CRISPRi screen for enhancing heterologous α -amylase yield in *Bacillus subtilis*.
- 141 Inducible CRISPRi-based operon silencing and selective in trans gene complementation in *Borrelia burgdorferi*.
- 140 From DNA-protein interactions to the genetic circuit design using CRISPR-dCas systems. 9,
- 139 Workflow for Performing Genetic Manipulation in Human Trophoblast Stem Cells Using CRISPR/Cas9 Technology. **2023**,
- 138 Comprehensive computational analysis of epigenetic descriptors affecting CRISPR-Cas9 off-target activity. **2022**, 23,
- 137 Large-Scale CRISPRi and Transcriptomics of *Staphylococcus epidermidis* Identify Genetic Factors Implicated in Lifestyle Versatility. **2022**, 13,

- 136 E. coli Toxin YjjJ (HipH) Is a Ser/Thr Protein Kinase That Impacts Cell Division, Carbon Metabolism, and Ribosome Assembly. ○
- 135 CRISPRi-based programmable logic inverter cascade for antibiotic-free selection and maintenance of multiple plasmids. ○
- 134 CRISPR activation and interference as investigative tools in the cardiovascular system. **2022**, 106348 ○
- 133 CRISPR/Cas12a-mediated genetic circuit cascades for multiplexed pathway optimization. ○
- 132 A central role for regulated protein stability in the control of TFE3 and MITF by nutrients. **2023**, 83, 57-73.e9 ○
- 131 A CRISPR-Cas Cure for HIV/AIDS. **2023**, 24, 1563 ○
- 130 Diversifying Polyhydroxyalkanoates: Synthesis, Properties, Processing and Applications. **2023**, 207-234 ○
- 129 Recent Trends in Genome Editing Technologies for Agricultural Crop Improvement. **2023**, 357-379 ○
- 128 Cre/lox -Mediated CRISPRi Library Reveals Core Genome of a Type I Methanotroph *Methylobacterium buryatense* 5GB1C. ○
- 127 Constitutive and conditional gene knockout mice for the study of intervertebral disc degeneration: Current status, decision considerations, and future possibilities. ○
- 126 Applying multi-omics toward tumor microbiome research. ○
- 125 Deep mutational scanning of essential bacterial proteins can guide antibiotic development. **2023**, 14, ○
- 124 Recent Advances in Genome-Engineering Strategies. **2023**, 14, 129 1
- 123 Making headway toward enduring changes: perspectives on breeding tree crops through genome editing. **2023**, 19, ○
- 122 Metabolically-targeted dCas9 expression in bacteria. ○
- 121 CRISPR interference for sequence-specific regulation of fibroblast growth factor receptor A in *Schistosoma mansoni*. 13, ○
- 120 Nucleic acid drug vectors for diagnosis and treatment of brain diseases. **2023**, 8, ○
- 119 CRISPR/Cas9 therapeutics: progress and prospects. **2023**, 8, ○

- 118 A novel Toxin-Antitoxin system swpAB alters gene expression patterns and reduces virulence expression in enterohaemorrhagic Escherichia coli.
- 117 OptoCRISPRi-HD: engineering a green-light activated CRISPRi system with high dynamic range.
- 116 A novel synthetic sRNA promoting protein overexpression in cell-free systems.
- 115 AcrPred: A hybrid optimization with enumerated machine learning algorithm to predict Anti-CRISPR proteins. **2023**, 228, 706-714
- 114 TAXI-peptide targeted Cas12a ribonuclease protein nanoformulations increase genome editing in hippocampal neurons. **2023**, 354, 188-195
- 113 Programmable synthetic biology tools for developing microbial cell factories. **2023**, 79, 102874
- 112 Metabolic Engineering: Methodologies and Applications.
- 111 Genome editing for vegetatively propagated crops improvement: a new horizon of possibilities.
- 110 Advances in CRISPR-Cas9 for the Baculovirus Vector System: A Systematic Review. **2023**, 15, 54
- 109 CRISPR engineering in organoids for gene repair and disease modelling. **2023**, 1, 32-45
- 108 Construction of a Set of Novel Transposon Vectors for Efficient Silencing of Protein and lncRNA Genes via CRISPR Interference.
- 107 SNP-D-CRISPR: Single Nucleotide Polymorphism-Distinguishable Repression or Enhancement of a Target Gene Expression by CRISPR System. **2023**, 49-62
- 106 Inducible CRISPRi-Based Operon Silencing and Selective in Trans Gene Complementation in Borrelia burgdorferi.
- 105 A dual sgRNA library design to probe genetic modifiers using genome-wide CRISPRi screens.
- 104 CRISPR-Cas Biochemistry and CRISPR-Based Molecular Diagnostics.
- 103 Recent progress in nucleic acid detection with CRISPR.
- 102 Nuclease-dead S.aureusCas9 downregulates alpha-synuclein and reduces mtDNA damage and oxidative stress levels in patient-derived stem cell model of Parkinson's disease.
- 101 CRISPR-Cas Biochemistry and CRISPR-Based Molecular Diagnostics.

- 100 Systematic Comparison and Rational Design of Theophylline Riboswitches for Effective Gene Repression. ○
- 99 A modular plasmid toolkit applied in marine Proteobacteria reveals functional insights during bacteria-stimulated metamorphosis. ○
- 98 Promoter-pervasive transcription causes RNA polymerase II pausing to boost DOG1 expression in response to salt. ○
- 97 Gene Modulation with CRISPR-based Tools in Human iPSC-Cardiomyocytes. ○
- 96 Recent Advances in CRISPR-Cas Technologies for Synthetic Biology. **2023**, 61, 13-36 ○
- 95 Identification of anti-Mycobacterium tuberculosis agents targeting the interaction of bacterial division proteins FtsZ and SepF. **2023**, ○
- 94 Automating the design-build-test-learn cycle towards next-generation bacterial cell factories. **2023**, 74, 1-15 ○
- 93 Roles of innovative genome editing technologies in stem cell engineering, rheumatic diseases and other joint/bone diseases. **2023**, 53-77 ○
- 92 Visualizing the Nucleome Using the CRISPR-Cas9 System: From in vitro to in vivo. **2023**, 88, S123-S149 ○
- 91 Reversing the Central Dogma: RNA-guided control of DNA in epigenetics and genome editing. **2023**, 83, 442-451 ○
- 90 Lipid nanoparticle structure and delivery route during pregnancy dictates mRNA potency, immunogenicity, and health in the mother and offspring. ○
- 89 Toward the Development of Epigenome Editing-Based Therapeutics: Potentials and Challenges. **2023**, 24, 4778 ○
- 88 AspFlex: molecular tools to study gene expression and regulation in *Acinetobacter baumannii*. ○
- 87 Emergence of CRISPR/Cas9-mediated bioimaging: A new dawn of in-situ detection. **2023**, 115302 ○
- 86 Use of CRISPR-based screens to identify mechanisms of chemotherapy resistance. ○
- 85 Hybrid Multitask Learning Reveals Sequence Features Driving Specificity in the CRISPR/Cas9 System. **2023**, 13, 641 ○
- 84 CRISPR/Cas9 system and its applications in nervous system diseases. **2023**, ○
- 83 CRISPRi screen highlights chromatin regulation to be involved in formic acid tolerance in *Saccharomyces cerevisiae*. **2023**, 3, 100076 ○

82	Sequence-specific DNA labelling for fluorescence microscopy. 2023 , 230, 115256	0
81	Potential of the endogenous and artificially inserted CRISPR-Cas system for controlling virulence and antimicrobial resistance of food pathogens. 2023 , 2, 100229	0
80	CRISPR technology: A decade of genome editing is only the beginning. 2023 , 379,	4
79	In Situ Reprogramming of Tumor-Associated Macrophages with Internally and Externally Engineered Exosomes. 2023 , 135,	0
78	In Situ Reprogramming of Tumor-Associated Macrophages with Internally and Externally Engineered Exosomes. 2023 , 62,	1
77	Programmable regulation of translation by harnessing the CRISPR-Cas13 system. 2023 , 59, 2616-2619	2
76	Viral Hemorrhagic Septicemia Virus Activates Integrated Stress Response Pathway and Induces Stress Granules to Regulate Virus Replication. 2023 , 15, 466	0
75	Rare immune diseases paving the road for genome editing-based precision medicine. 5,	0
74	Advances in Plant Epigenome Editing Research and Its Application in Plants. 2023 , 24, 3442	0
73	The PROTECTOR strategy employs dCas orthologs to sterically shield off-target sites from CRISPR/Cas activity. 2023 , 13,	0
72	CRISPRi in <i>Xanthomonas</i> demonstrates functional convergence of transcription activator-like effectors in two divergent pathogens. 2023 , 238, 1593-1604	0
71	Recent advances in nanocomposite-based delivery systems for targeted CRISPR/Cas delivery and therapeutic genetic manipulation.	0
70	CRISPR interference screens reveal tradeoffs between growth rate and robustness in <i>Synechocystis</i> PCC 6803 across trophic conditions.	0
69	Integrative analysis of uterine leiomyoma genetics, epigenomics, and single-cell transcriptomics reveals causal genetic variants, gene targets, and cell types.	0
68	New Target Gene Screening Using Shortened and Random sgRNA Libraries in Microbial CRISPR Interference. 2023 , 12, 800-808	0
67	The outer mitochondrial membrane protein TMEM11 demarcates spatially restricted BNIP3/BNIP3L-mediated mitophagy. 2023 , 222,	0
66	Profiling cell envelope-antibiotic interactions reveals vulnerabilities to β -lactams in a multidrug-resistant bacterium.	0
65	Therapeutic strategies for autism: targeting three levels of the central dogma of molecular biology. 2023 , 13,	0

- 64 Engineering the plant metabolic system by exploiting metabolic regulation. ○
- 63 CRISPR/Cas genome editing in plants: Dawn of Agrobacterium transformation for recalcitrant and transgene-free plants for future crop breeding. **2023**, 196, 724-730 ○
- 62 Shoot-root signal circuit: Phytoremediation of heavy metal contaminated soil. 14, ○
- 61 Delivery challenges for CRISPR/Cas9 genome editing for Duchenne muscular dystrophy. **2023**, 4, 011307 ○
- 60 A Split CRISPR/Cas13b System for Conditional RNA Regulation and Editing. **2023**, 145, 5561-5569 ○
- 59 Genetic manipulation and targeted protein degradation in mammalian systems: practical considerations, tips and tricks for discovery research. ○
- 58 Efficient production of d-tagatose via DNA scaffold mediated oxidoreductases assembly in vivo from whey powder. **2023**, 166, 112637 ○
- 57 G-quadruplex-based CRISPR photoswitch for spatiotemporal control of genomic modulation. ○
- 56 Fitness and Functional Landscapes of the E. coli RNase III Gene. **2023**, 40, ○
- 55 Inducible CRISPR Epigenome Systems Mimic Cocaine Induced Bidirectional Regulation of Nab2 and Egr3. **2023**, 43, 2242-2259 ○
- 54 A portable regulatory RNA array design enables tunable and complex regulation across diverse bacteria. ○
- 53 A generalizable Cas9/sgRNA prediction model using machine transfer learning with small high-quality datasets. ○
- 52 Dynamics of Target DNA Binding and Cleavage by Staphylococcus aureus Cas9 as Revealed by High-Speed Atomic Force Microscopy. **2023**, 17, 4629-4641 ○
- 51 Nanoscale, antigen encounter-dependent, IL-12 delivery by CAR T cells plus PD-L1 blockade for cancer treatment. **2023**, 21, ○
- 50 Genome-Editing Tools for Flax Genetic Improvement. **2023**, 235-252 ○
- 49 Metabolic engineering of Escherichia coli to enhance protein production by coupling ShCAST-based optimized transposon system and CRISPR interference. **2023**, 144, 104746 ○
- 48 CRISPR techniques and potential for the detection and discrimination of SARS-CoV-2 variants of concern. **2023**, 161, 117000 ○
- 47 Therapeutic applications of CRISPR /Cas9 gene editing technology for the treatment of ocular diseases. ○

- 46 Synthetic biology tools for engineering *Corynebacterium glutamicum*. **2023**, 21, 1955-1965 ○
- 45 Mechanisms regulating the CRISPR-Cas systems. 14, ○
- 44 Diverse Mechanisms of CRISPR-Cas9 Inhibition by Type II Anti-CRISPR Proteins. **2023**, 435, 168041 ○
- 43 Tuning plant phenotypes by precise, graded downregulation of gene expression. ○
- 42 CRISPR-assisted transcription activation by phase-separation proteins. ○
- 41 Danger Analysis: Risk-Averse on/off-Target Assessment for CRISPR Editing Without a Reference Genome. ○
- 40 Split-tracrRNA as an efficient tracrRNA system with an improved potential of scalability. ○
- 39 CRISPRi-mediated characterization of novel anti-tuberculosis targets: Mycobacterial peptidoglycan modifications promote beta-lactam resistance and intracellular survival. 13, ○
- 38 Seedlessness Trait and Genome Editing [A Review](#). **2023**, 24, 5660 ○
- 37 Bioengineering of fungal endophytes through the CRISPR/Cas9 system. 14, ○
- 36 Cas9 off-target binding to the promoter of bacterial genes leads to silencing and toxicity. ○
- 35 Shared gene regulatory strategies for the p53 and ATF4-dependent transcriptional networks. ○
- 34 Drug discovery processes: When and where the rubber meets the road. **2023**, 339-415 ○
- 33 Emerging roles of circular RNAs in cancer therapy-induced cardiotoxicity. 10, ○
- 32 Periodontal Disease Pathogens, Pathogenesis, and Therapeutics: The CRISPR-Cas Effect. **2023**, 6, 90-98 ○
- 31 Establishment, optimization, and application of genetic technology in *Aspergillus* spp.. 14, ○
- 30 Strategies for Using CRISPR-Cas9 Orthologs to Perform Gene Editing Applications. 30, 108-112 ○
- 29 Examination of the Functional Relationship between PD-L1 DNA Methylation and mRNA Expression in Non-Small-Cell Lung Cancer. **2023**, 15, 1909 ○

- 28 Bioinformatics approaches to analyzing CRISPR screen data: from dropout screens to single-cell CRISPR screens. **2022**, 10, 307 ○
- 27 Perspective Chapter: Epigenetic Therapy - The Future Treatment for Cancer. ○
- 26 CRISPR-Cas-mediated transcriptional modulation: The therapeutic promises of CRISPRa and CRISPRi. **2023**, ○
- 25 Transcriptional activation of endogenous Oct4 via the CRISPR / dCas9 activator ameliorates Hutchinson-Gilford progeria syndrome in mice. ○
- 24 Nanotechnology and CRISPR/Cas9 system for sustainable agriculture. ○
- 23 Recent progress and challenges in CRISPR-Cas9 engineered algae and cyanobacteria. **2023**, 71, 103068 ○
- 22 Current Bioinformatics Tools to Optimize CRISPR/Cas9 Experiments to Reduce Off-Target Effects. **2023**, 24, 6261 ○
- 21 Dynamics of nuclear architecture during early embryonic development and lessons from liveimaging. **2023**, 58, 435-449 ○
- 20 Integrative Genomic Analysis of m6a-SNPs Identifies Potential Functional Variants Associated with Alzheimer's Disease. **2023**, 8, 13332-13341 ○
- 19 Reprogramming Targeted-Antibacterial-Plasmids (TAPs) to achieve broad-host range antibacterial activity. **2023**, 126, 102680 ○
- 18 Transgenesis and Genome Engineering: A Historical Review. **2023**, 1-32 ○
- 17 CRISPR -based KCC2 upregulation attenuates drug-resistant seizure in mouse models of epilepsy. ○
- 16 Coiled Coils as Versatile Modules for Mammalian Cell Regulation. **2023**, 1, 1-10 ○
- 15 Optimized whole-genome CRISPR interference screens identify ARID1A-dependent growth regulators in human induced pluripotent stem cells. **2023**, ○
- 14 Genetic and Genomic Resources for Harnessing the Health-Related Genes in Finger Millet. **2023**, 1-16 ○
- 13 Screening Method for the Identification and Characterization of Transcription Factors Regulating Flesh Fruit Development and Ripening. **2023**, 17-61 ○
- 12 CRISPR-Cas System: The Current and Emerging Translational Landscape. **2023**, 12, 1103 ○
- 11 Identifying widespread and recurrent variants of genetic parts to improve annotation of engineered DNA sequences. ○

- 10 CRISPR-Cas12-Based Diagnostic Applications in Infectious and Zoonotic Diseases. **2023**, 267-278 ○
- 9 CRISPR-cas technology: A key approach for SARS-CoV-2 detection. 11, ○
- 8 Targeted Modulation of Chicken Genes In Vitro Using CRISPRa and CRISPRi Toolkit. **2023**, 14, 906 ○
- 7 All-in-one AAV-delivered epigenome-editing platform: proof-of-concept and therapeutic implications for neurodegenerative disorders. ○
- 6 Genome-scale CRISPRi screening: a powerful tool in engineering microbiology. **2023**, 100089 ○
- 5 CRISPR-Combo-mediated orthogonal genome editing and transcriptional activation for plant breeding. ○
- 4 Mechanisms of the Specificity of the CRISPR/Cas9 System in Genome Editing. **2023**, 57, 258-271 ○
- 3 Inheritable CRISPR based epigenetic modification in a fungus. **2023**, 272, 127397 ○
- 2 Effect of chromosomal integration on catalytic performance of a multi-component P450 system in Escherichia coli. ○
- 1 Discovery of Diverse CRISPR-Cas Systems and Expansion of the Genome Engineering Toolbox. ○