

Re-engineering the zinc fingers of PRDM9 reverses hybrid

Nature

530, 171-176

DOI: [10.1038/nature16931](https://doi.org/10.1038/nature16931)

Citation Report

#	ARTICLE	IF	CITATIONS
1	Genetic Linkage Map Construction and QTL Analysis of Two Interspecific Reproductive Isolation Traits in Sponge Gourd. <i>Frontiers in Plant Science</i> , 2016, 7, 980.	1.7	19
2	Interspecific hybrids of dwarf hamsters and Phasianidae birds as animal models for studying the genetic and developmental basis of hybrid incompatibility. <i>Genes and Genetic Systems</i> , 2016, 91, 63-75.	0.2	5
3	The composite regulatory basis of the large X-effect in mouse speciation. <i>Molecular Biology and Evolution</i> , 2017, 34, msw243.	3.5	59
4	X marks the spot: PRDM9 rescues hybrid sterility by finding hidden treasure in the genome. <i>Nature Structural and Molecular Biology</i> , 2016, 23, 267-269.	3.6	8
5	The democratization of gene editing: Insights from site-specific cleavage and double-strand break repair. <i>DNA Repair</i> , 2016, 44, 6-16.	1.3	181
6	Zinc fingers 1, 2, 5 and 6 of transcriptional regulator, PRDM4, are required for its nuclear localisation. <i>Biochemical and Biophysical Research Communications</i> , 2016, 474, 388-394.	1.0	0
7	Evolution: On the Origin of Symmetry, Synapsis, and Species. <i>Current Biology</i> , 2016, 26, R325-R328.	1.8	5
8	Proteomic Analysis of Pachytene Spermatocytes of Sterile Hybrid Male Mice. <i>Biology of Reproduction</i> , 2016, 95, 52-52.	1.2	5
9	The Landscape of Mouse Meiotic Double-Strand Break Formation, Processing, and Repair. <i>Cell</i> , 2016, 167, 695-708.e16.	13.5	240
10	Insights in human epigenomic dynamics through comparative primate analysis. <i>Genomics</i> , 2016, 108, 115-125.	1.3	2
11	Evidence of positive selection and concerted evolution in the rapidly evolving <i>PRDM9</i> zinc finger domain in goats and sheep. <i>Animal Genetics</i> , 2016, 47, 740-751.	0.6	12
12	Positive and strongly relaxed purifying selection drive the evolution of repeats in proteins. <i>Nature Communications</i> , 2016, 7, 13570.	5.8	35
13	Meiotic Pairing Inadequacies at the Levels of X Chromosome, Gene, or Base: Epigenetic Tagging for Transgenerational Error-Correction Guided by a Future Homologous Duplex. <i>Biological Theory</i> , 2016, 11, 150-157.	0.8	8
14	Resolution beyond the diffraction limit. <i>Nature</i> , 2016, 530, 168-169.	13.7	1
15	Asymmetric breaks in DNA cause sterility. <i>Nature</i> , 2016, 530, 167-168.	13.7	5
16	The long zinc finger domain of PRDM9 forms a highly stable and long-lived complex with its DNA recognition sequence. <i>Chromosome Research</i> , 2017, 25, 155-172.	1.0	17
17	Gene Regulation and Speciation. <i>Trends in Genetics</i> , 2017, 33, 68-80.	2.9	149
18	The Red Queen and King in finite populations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5396-E5405.	3.3	21

#	ARTICLE	IF	CITATIONS
19	Structural Variation Shapes the Landscape of Recombination in Mouse. <i>Genetics</i> , 2017, 206, 603-619.	1.2	51
20	In vivo binding of PRDM9 reveals interactions with noncanonical genomic sites. <i>Genome Research</i> , 2017, 27, 580-590.	2.4	67
21	When nuclear-encoded proteins and mitochondrial <i>rRNA</i> s do not get along, species split apart. <i>EMBO Reports</i> , 2017, 18, 8-10.	2.0	4
22	Genomic and chromatin features shaping meiotic double-strand break formation and repair in mice. <i>Cell Cycle</i> , 2017, 16, 1870-1884.	1.3	56
23	Beyond speciation genes: an overview of genome stability in evolution and speciation. <i>Current Opinion in Genetics and Development</i> , 2017, 47, 17-23.	1.5	62
24	The Role of KRAB-ZFPs in Transposable Element Repression and Mammalian Evolution. <i>Trends in Genetics</i> , 2017, 33, 871-881.	2.9	156
25	The Recombination Landscape in Wild House Mice Inferred Using Population Genomic Data. <i>Genetics</i> , 2017, 207, 297-309.	1.2	36
26	Structural basis of human PR/SET domain 9 (PRDM9) allele-specific recognition of its cognate DNA sequence. <i>Journal of Biological Chemistry</i> , 2017, 292, 15994-16002.	1.6	15
27	The Red Queen model of recombination hot-spot evolution: a theoretical investigation. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160463.	1.8	32
28	The impact of recombination on human mutation load and disease. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160465.	1.8	31
29	The consequences of sequence erosion in the evolution of recombination hotspots. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160462.	1.8	26
30	Genetic vs environment influences on house mouse hybrid zone in Iran. <i>Journal of Genetic Engineering and Biotechnology</i> , 2017, 15, 483-488.	1.5	4
31	Ruminant-specific multiple duplication events of PRDM9 before speciation. <i>BMC Evolutionary Biology</i> , 2017, 17, 79.	3.2	3
32	Cytoplasmic-Nuclear Incompatibility Between Wild Isolates of <i>Caenorhabditis nouraguensis</i> . <i>G3: Genes, Genomes, Genetics</i> , 2017, 7, 823-834.	0.8	12
33	A map of human PRDM9 binding provides evidence for novel behaviors of PRDM9 and other zinc-finger proteins in meiosis. <i>ELife</i> , 2017, 6, .	2.8	80
34	The potential of shifting recombination hotspots to increase genetic gain in livestock breeding. <i>Genetics Selection Evolution</i> , 2017, 49, 55.	1.2	18
35	Regulatory remodeling in the allo-tetraploid frog <i>Xenopus laevis</i> . <i>Genome Biology</i> , 2017, 18, 198.	3.8	34
36	Hybrid Sterility, Mouse $\hat{\tau}$. , 2017, , .		0

#	ARTICLE	IF	CITATIONS
37	PRDM9 Methyltransferase Activity Is Essential for Meiotic DNA Double-Strand Break Formation at Its Binding Sites. <i>Molecular Cell</i> , 2018, 69, 853-865.e6.	4.5	110
38	Natural selection interacts with recombination to shape the evolution of hybrid genomes. <i>Science</i> , 2018, 360, 656-660.	6.0	314
39	Interrogating the Functions of PRDM9 Domains in Meiosis. <i>Genetics</i> , 2018, 209, 475-487.	1.2	23
40	The Evolution of Polymorphic Hybrid Incompatibilities in House Mice. <i>Genetics</i> , 2018, 209, 845-859.	1.2	50
41	PRDM9 and Its Role in Genetic Recombination. <i>Trends in Genetics</i> , 2018, 34, 291-300.	2.9	113
42	Construction of PRDM9 allele-specific recombination maps in cattle using large-scale pedigree analysis and genome-wide single sperm genomics. <i>DNA Research</i> , 2018, 25, 183-194.	1.5	15
43	DNA Conformation Induces Adaptable Binding by Tandem Zinc Finger Proteins. <i>Cell</i> , 2018, 173, 221-233.e12.	13.5	52
44	Accurate annotation of accessible chromatin in mouse and human primordial germ cells. <i>Cell Research</i> , 2018, 28, 1077-1089.	5.7	17
45	Extensive sex differences at the initiation of genetic recombination. <i>Nature</i> , 2018, 561, 338-342.	13.7	76
46	PRDM9, a driver of the genetic map. <i>PLoS Genetics</i> , 2018, 14, e1007479.	1.5	85
47	The chromosomal basis of species initiation: Prdm9 as an anti-speciation gene. <i>Biological Journal of the Linnean Society</i> , 2018, 124, 139-150.	0.7	6
48	Modulation of Prdm9-controlled meiotic chromosome asynapsis overrides hybrid sterility in mice. <i>ELife</i> , 2018, 7, .	2.8	54
49	Spermatogenesis and the Evolution of Mammalian Sex Chromosomes. <i>Trends in Genetics</i> , 2018, 34, 722-732.	2.9	47
50	What is Speciation Genomics? The roles of ecology, gene flow, and genomic architecture in the formation of species. <i>Biological Journal of the Linnean Society</i> , 2018, 124, 561-583.	0.7	91
51	Analysis of Meiotic Double-Strand Break Initiation in Mammals. <i>Methods in Enzymology</i> , 2018, 601, 391-418.	0.4	19
52	A rapidly evolved domain, the SCML2 DNA-binding repeats, contributes to chromatin binding of mouse SCML2. <i>Biology of Reproduction</i> , 2019, 100, 409-419.	1.2	5
54	Ordered gold nanoparticle arrays on the tip of silver wrinkled structures for single molecule detection. <i>Sensors and Actuators B: Chemical</i> , 2019, 300, 126846.	4.0	122
55	Heterogeneous transposable elements as silencers, enhancers and targets of meiotic recombination. <i>Chromosoma</i> , 2019, 128, 279-296.	1.0	28

#	ARTICLE	IF	CITATIONS
56	Avian Genomics in Animal Breeding and the End of the Model Organism. , 2019, , 21-67.		3
57	Inference and analysis of population-specific fine-scale recombination maps across 26 diverse human populations. <i>Science Advances</i> , 2019, 5, eaaw9206.	4.7	111
58	Unified single-cell analysis of testis gene regulation and pathology in five mouse strains. <i>ELife</i> , 2019, 8, .	2.8	102
59	High-Throughput Single-Cell Sequencing with Linear Amplification. <i>Molecular Cell</i> , 2019, 76, 676-690.e10.	4.5	82
60	A high-resolution map of non-crossover events reveals impacts of genetic diversity on mammalian meiotic recombination. <i>Nature Communications</i> , 2019, 10, 3900.	5.8	66
61	Genomic Structure of <i>Hstx2</i> Modifier of <i>Prdm9</i> -Dependent Hybrid Male Sterility in Mice. <i>Genetics</i> , 2019, 213, 1047-1063.	1.2	22
62	Fertility Costs of Meiotic Drivers. <i>Current Biology</i> , 2019, 29, R512-R520.	1.8	56
63	Histone methyltransferase PRDM9 is not essential for meiosis in male mice. <i>Genome Research</i> , 2019, 29, 1078-1086.	2.4	34
64	Mouse ANKRD31 Regulates Spatiotemporal Patterning of Meiotic Recombination Initiation and Ensures Recombination between X and Y Sex Chromosomes. <i>Molecular Cell</i> , 2019, 74, 1069-1085.e11.	4.5	74
65	PRDM9 Diversity at Fine Geographical Scale Reveals Contrasting Evolutionary Patterns and Functional Constraints in Natural Populations of House Mice. <i>Molecular Biology and Evolution</i> , 2019, 36, 1686-1700.	3.5	17
66	Factors influencing meiotic recombination revealed by whole-genome sequencing of single sperm. <i>Science</i> , 2019, 363, .	6.0	98
67	Prdm9 and Meiotic Cohesin Proteins Cooperatively Promote DNA Double-Strand Break Formation in Mammalian Spermatocytes. <i>Current Biology</i> , 2019, 29, 1002-1018.e7.	1.8	33
68	Testes Proteases Expression and Hybrid Male Sterility Between Subspecies of <i>Drosophila pseudoobscura</i> . <i>G3: Genes, Genomes, Genetics</i> , 2019, 9, 1065-1074.	0.8	3
69	Positive Selection and Functional Divergence at Meiosis Genes That Mediate Crossing Over Across the <i>Drosophila</i> Phylogeny. <i>G3: Genes, Genomes, Genetics</i> , 2019, 9, 3201-3211.	0.8	5
70	Discovery of a chemical probe for PRDM9. <i>Nature Communications</i> , 2019, 10, 5759.	5.8	24
71	Evolution of the Yeast Recombination Landscape. <i>Molecular Biology and Evolution</i> , 2019, 36, 412-422.	3.5	24
72	The expression of histone methyltransferases and distribution of selected histone methylations in testes of yak and cattle-yak hybrid. <i>Theriogenology</i> , 2020, 144, 164-173.	0.9	17
73	Coupling DNA Damage and Repair: an Essential Safeguard during Programmed DNA Double-Strand Breaks?. <i>Trends in Cell Biology</i> , 2020, 30, 87-96.	3.6	20

#	ARTICLE	IF	CITATIONS
74	<i>Prdm9</i> Intersubspecific Interactions in Hybrid Male Sterility of House Mouse. <i>Molecular Biology and Evolution</i> , 2020, 37, 3423-3438.	3.5	24
75	Reverse genetics reveals single gene of every candidate on Hybrid sterility, X Chromosome QTL 2 (<i>Hstx2</i>) are dispensable for spermatogenesis. <i>Scientific Reports</i> , 2020, 10, 9060.	1.6	2
76	Age and Genetic Background Modify Hybrid Male Sterility in House Mice. <i>Genetics</i> , 2020, 216, 585-597.	1.2	19
77	Molecular structures and mechanisms of DNA break processing in mouse meiosis. <i>Genes and Development</i> , 2020, 34, 806-818.	2.7	46
78	Natural hybridization reveals incompatible alleles that cause melanoma in swordtail fish. <i>Science</i> , 2020, 368, 731-736.	6.0	86
80	Promoter hypermethylation of PIWI/piRNA pathway genes associated with diminished pachytene piRNA production in bovine hybrid male sterility. <i>Epigenetics</i> , 2020, 15, 914-931.	1.3	18
81	The Configuration of RPA, RAD51, and DMC1 Binding in Meiosis Reveals the Nature of Critical Recombination Intermediates. <i>Molecular Cell</i> , 2020, 79, 689-701.e10.	4.5	87
82	Surface softening in palladium nanoparticles: effects of a capping agent on vibrational properties. <i>Nanoscale</i> , 2020, 12, 5876-5887.	2.8	3
83	ATM and PRDM9 regulate SPO11-bound recombination intermediates during meiosis. <i>Nature Communications</i> , 2020, 11, 857.	5.8	81
84	Disrupted Gene Networks in Subfertile Hybrid House Mice. <i>Molecular Biology and Evolution</i> , 2020, 37, 1547-1562.	3.5	22
85	The genetic basis of hybrid male sterility in sympatric <i>Primulina</i> species. <i>BMC Evolutionary Biology</i> , 2020, 20, 49.	3.2	9
86	Mutation-selection balance and compensatory mechanisms in tumour evolution. <i>Nature Reviews Genetics</i> , 2021, 22, 251-262.	7.7	38
87	Male hybrid sterility in the cattle-yak and other bovines: a review. <i>Biology of Reproduction</i> , 2021, 104, 495-507.	1.2	22
88	EWSR1 affects PRDM9-dependent histone 3 methylation and provides a link between recombination hotspots and the chromosome axis protein REC8. <i>Molecular Biology of the Cell</i> , 2021, 32, 1-14.	0.9	14
89	Replacement of surgical vasectomy through the use of wild-type sterile hybrids. <i>Lab Animal</i> , 2021, 50, 49-52.	0.2	4
90	Protein Complexes Form a Basis for Complex Hybrid Incompatibility. <i>Frontiers in Genetics</i> , 2021, 12, 609766.	1.1	13
91	Rat PRDM9 shapes recombination landscapes, duration of meiosis, gametogenesis, and age of fertility. <i>BMC Biology</i> , 2021, 19, 86.	1.7	12
93	Reproductive Isolation Between Taxonomically Controversial Forms of the Gray Voles (<i>Microtus</i>). <i>Tj ETQq1 1 0.784314 rgBT /Overlock</i> 2021, 12, 653837.	1.1	7

#	ARTICLE	IF	CITATIONS
96	Hybrid sterility genes in mice (<i>Mus musculus</i>): a peculiar case of PRDM9 incompatibility. <i>Trends in Genetics</i> , 2021, 37, 1095-1108.	2.9	27
97	Meiotic recombination mirrors patterns of germline replication in mice and humans. <i>Cell</i> , 2021, 184, 4251-4267.e20.	13.5	31
98	The genomic consequences of hybridization. <i>ELife</i> , 2021, 10, .	2.8	128
99	Gene trapping reveals a new transcriptionally active genome element: The chromosome-specific clustered trap region. <i>Genes To Cells</i> , 2021, 26, 874-890.	0.5	0
100	Altering the Binding Properties of PRDM9 Partially Restores Fertility across the Species Boundary. <i>Molecular Biology and Evolution</i> , 2021, 38, 5555-5562.	3.5	9
101	Chromosome-wide characterization of meiotic noncrossovers (gene conversions) in mouse hybrids. <i>Genetics</i> , 2021, 217, 1-14.	1.2	8
111	Meiotic epigenetic factor PRDM9 impacts sperm quality of hybrid mice. <i>Reproduction</i> , 2020, 160, 53-64.	1.1	4
112	Repeated losses of PRDM9-directed recombination despite the conservation of PRDM9 across vertebrates. <i>ELife</i> , 2017, 6, .	2.8	115
113	Cisplatin-induced DNA double-strand breaks promote meiotic chromosome synapsis in PRDM9-controlled mouse hybrid sterility. <i>ELife</i> , 2018, 7, .	2.8	18
114	Dual histone methyl reader ZCWPW1 facilitates repair of meiotic double strand breaks in male mice. <i>ELife</i> , 2020, 9, .	2.8	30
115	ZCWPW1 is recruited to recombination hotspots by PRDM9 and is essential for meiotic double strand break repair. <i>ELife</i> , 2020, 9, .	2.8	31
116	The histone modification reader ZCWPW1 links histone methylation to PRDM9-induced double-strand break repair. <i>ELife</i> , 2020, 9, .	2.8	34
117	PRDM9 activity depends on HELLS and promotes local 5-hydroxymethylcytosine enrichment. <i>ELife</i> , 2020, 9, .	2.8	20
118	The formation and repair of DNA double-strand breaks in mammalian meiosis. <i>Asian Journal of Andrology</i> , 2021, 23, 572.	0.8	11
119	Common Postzygotic Mutational Signatures in Healthy Adult Tissues Related to Embryonic Hypoxia. <i>Genomics, Proteomics and Bioinformatics</i> , 2022, 20, 177-191.	3.0	1
120	Stage-resolved Hi-C analyses reveal meiotic chromosome organizational features influencing homolog alignment. <i>Nature Communications</i> , 2021, 12, 5827.	5.8	34
123	Recent biotechnology tools contributing to the molecular-genetics analysis for non-model animals.. <i>Journal of Animal Genetics</i> , 2017, 45, 19-30.	0.5	0
135	PRDM9 forms a trimer by interactions within the zinc finger array. <i>Life Science Alliance</i> , 2019, 2, e201800291.	1.3	5

#	ARTICLE	IF	CITATIONS
147	Cataloging Human PRDM9 Allelic Variation Using Long-Read Sequencing Reveals PRDM9 Population Specificity and Two Distinct Groupings of Related Alleles. <i>Frontiers in Cell and Developmental Biology</i> , 2021, 9, 675286.	1.8	13
148	De novo deletions and duplications at recombination hotspots in mouse germlines. <i>Cell</i> , 2021, 184, 5970-5984.e18.	13.5	25
150	Bioadhesion design of hydrogels: adhesion strategies and evaluation methods for biological interfaces. <i>Journal of Adhesion Science and Technology</i> , 2023, 37, 335-369.	1.4	0
151	Unraveling patterns of disrupted gene expression across a complex tissue. <i>Evolution; International Journal of Organic Evolution</i> , 2022, 76, 275-291.	1.1	14
152	Predicting PRDM9 Binding Sites by a Convolutional Neural Network and Verification Using Genetic Recombination Map. <i>IPSI Transactions on Bioinformatics</i> , 2022, 15, 9-16.	0.2	0
153	<i>PRDM9</i> losses in vertebrates are coupled to those of paralogs <i>ZCWPW1</i> and <i>ZCWPW2</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, .	3.3	24
154	Genome-wide recombination map construction from single sperm sequencing in cattle. <i>BMC Genomics</i> , 2022, 23, 181.	1.2	4
155	Evolution of the recombination regulator PRDM9 in minke whales. <i>BMC Genomics</i> , 2022, 23, 212.	1.2	4
156	Stage-specific disruption of X chromosome expression during spermatogenesis in sterile house mouse hybrids. <i>G3: Genes, Genomes, Genetics</i> , 2022, 12, .	0.8	8
157	Parental inflammatory bowel disease and autism in children. <i>Nature Medicine</i> , 2022, 28, 1406-1411.	15.2	18
158	Mouse oocytes carrying metacentric Robertsonian chromosomes have fewer crossover sites and higher aneuploidy rates than oocytes carrying acrocentric chromosomes alone. <i>Scientific Reports</i> , 2022, 12, .	1.6	0
160	Genic and chromosomal components of <i>Prdm9</i> -driven hybrid male sterility in mice (<i>Mus</i>) Tj ETQq1 1 0.784314 rgBT /Overlock	1.2	7
161	Orchestrating recombination initiation in mice and men. <i>Current Topics in Developmental Biology</i> , 2023, , 27-42.	1.0	6
162	Differences in Adipose Gene Expression Profiles between Male and Female Even Reindeer (<i>Rangifer</i>) Tj ETQq1 1 0.784314 rgBT /Overlock	1.0	1
164	The exploration of miRNAs and mRNA profiles revealed the molecular mechanisms of cattle-yak male infertility. <i>Frontiers in Veterinary Science</i> , 0, 9, .	0.9	1
165	The contribution of sex chromosome conflict to disrupted spermatogenesis in hybrid house mice. <i>Genetics</i> , 2022, 222, .	1.2	2
167	Modelling speciation: Problems and implications. <i>In Silico Biology</i> , 2022, , 1-20.	0.4	1
168	Genome-Wide Association Screening Determines Peripheral Players in Male Fertility Maintenance. <i>International Journal of Molecular Sciences</i> , 2023, 24, 524.	1.8	2

#	ARTICLE	IF	CITATIONS
170	Meiotic Recognition of Evolutionarily Diverged Homologs: Chromosomal Hybrid Sterility Revisited. <i>Molecular Biology and Evolution</i> , 2023, 40, .	3.5	5
171	2022 William Allan Award. <i>American Journal of Human Genetics</i> , 2023, 110, 404-408.	2.6	0
173	Sequence Motif Analysis of PRDM9 and Short Inverted Repeats Suggests Their Contribution to Human Microdeletion and Microduplication Syndromes. <i>BioMedInformatics</i> , 2023, 3, 267-279.	1.0	1
174	Comparative proteomic analysis identifies differentially expressed proteins associated with meiotic arrest in cattleâ€yak hybrids. <i>Proteomics</i> , 0, , .	1.3	0
186	Divergence and conservation of the meiotic recombination machinery. <i>Nature Reviews Genetics</i> , 0, , .	7.7	4
192	Mapping Meiotic DNA Breaks: Two Fully-Automated Pipelines to Analyze Single-Strand DNA Sequencing Data, hotSSDS and hotSSDS-extra. <i>Methods in Molecular Biology</i> , 2024, , 227-261.	0.4	0