

# Comparative evolutionary genetics of spontaneous mutations in rhabditid nematodes

Proceedings of the National Academy of Sciences of the United States of America  
102, 5785-5790

DOI: [10.1073/pnas.0406056102](https://doi.org/10.1073/pnas.0406056102)

Citation Report

#	ARTICLE	IF	CITATIONS
1	Is It What We Know or Who We Know? Choice of Organism and Robustness of Inference in Ecology and Evolutionary Biology. <i>American Naturalist</i> , 2006, 167, 303-314.	1.0	24
2	A GENERAL MULTIVARIATE EXTENSION OF FISHER'S GEOMETRICAL MODEL AND THE DISTRIBUTION OF MUTATION FITNESS EFFECTS ACROSS SPECIES. <i>Evolution; International Journal of Organic Evolution</i> , 2006, 60, 893-907.	1.1	183
3	Three-dimensional reconstruction of the nose epidermal cells in the microbial feeding nematode, <i>Acrobeles complexus</i> (Nematoda: Rhabditida). <i>Journal of Morphology</i> , 2006, 267, 1257-1272.	0.6	22
4	A GENERAL MULTIVARIATE EXTENSION OF FISHER'S GEOMETRICAL MODEL AND THE DISTRIBUTION OF MUTATION FITNESS EFFECTS ACROSS SPECIES. <i>Evolution; International Journal of Organic Evolution</i> , 2006, 60, 893.	1.1	60
5	Negative environmental perturbations may improve species persistence. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2006, 273, 2501-2506.	1.2	12
6	High Nucleotide Polymorphism and Rapid Decay of Linkage Disequilibrium in Wild Populations of <i>Caenorhabditis remanei</i> . <i>Genetics</i> , 2006, 174, 901-913.	1.2	112
7	Cumulative Effects of Spontaneous Mutations for Fitness in <i>Caenorhabditis</i> : Role of Genotype, Environment and Stress. <i>Genetics</i> , 2006, 174, 1387-1395.	1.2	49
8	The Relative Roles of Three DNA Repair Pathways in Preventing <i>Caenorhabditis elegans</i> Mutation Accumulation. <i>Genetics</i> , 2006, 174, 57-65.	1.2	48
9	Patterns of Nucleotide Polymorphism Distinguish Temperate and Tropical Wild Isolates of <i>Caenorhabditis briggsae</i> . <i>Genetics</i> , 2006, 173, 2021-2031.	1.2	100
10	Low Impact of Germline Transposition on the Rate of Mildly Deleterious Mutation in <i>Caenorhabditis elegans</i> . <i>Genetics</i> , 2006, 174, 2129-2136.	1.2	21
11	Estimation of the upper limit of the mutation rate and mean heterozygous effect of deleterious mutations. <i>Genetical Research</i> , 2006, 88, 137.	0.3	2
12	Understanding the Evolutionary Fate of Finite Populations: The Dynamics of Mutational Effects. <i>PLoS Biology</i> , 2007, 5, e94.	2.6	172
13	Mutational Bias for Body Size in Rhabditid Nematodes. <i>Genetics</i> , 2007, 176, 1653-1661.	1.2	35
14	Mating Systems and the Efficacy of Selection at the Molecular Level. <i>Genetics</i> , 2007, 177, 905-916.	1.2	98
15	Experimental Estimate of the Abundance and Effects of Nearly Neutral Mutations in the RNA Virus $\phi$ 6. <i>Genetics</i> , 2007, 176, 467-476.	1.2	28
16	Mutation rate variation in multicellular eukaryotes: causes and consequences. <i>Nature Reviews Genetics</i> , 2007, 8, 619-631.	7.7	389
17	Direct estimation of per nucleotide and genomic deleterious mutation rates in <i>Drosophila</i> . <i>Nature</i> , 2007, 445, 82-85.	13.7	381
18	Hemiclonal reproduction slows down the speed of Muller's ratchet in the hybridogenetic frog <i>Rana esculenta</i> . <i>Journal of Evolutionary Biology</i> , 2007, 20, 650-660.	0.8	13

#	ARTICLE	IF	CITATIONS
19	Distinct patterns of genetic variation in <i>Pristionchus pacificus</i> and <i>Caenorhabditis elegans</i> , two partially selfing nematodes with cosmopolitan distribution. <i>Molecular Ecology</i> , 2007, 16, 1267-1280.	2.0	24
20	On the potential for extinction by Muller's Ratchet in <i>Caenorhabditis elegans</i> . <i>BMC Evolutionary Biology</i> , 2008, 8, 125.	3.2	38
21	Muller's Ratchet and compensatory mutation in <i>Caenorhabditis briggsae</i> mitochondrial genome evolution. <i>BMC Evolutionary Biology</i> , 2008, 8, 62.	3.2	77
22	Evolutionary origins of invasive populations. <i>Evolutionary Applications</i> , 2008, 1, 427-448.	1.5	198
23	<i>Oscheius tipulae</i> , a widespread hermaphroditic soil nematode, displays a higher genetic diversity and geographical structure than <i>Caenorhabditis elegans</i> . <i>Molecular Ecology</i> , 2008, 17, 1523-1534.	2.0	35
24	Patterns of Molecular Evolution in <i>Caenorhabditis</i> Preclude Ancient Origins of Selfing. <i>Genetics</i> , 2008, 178, 2093-2104.	1.2	87
25	Sexual Selection and Maintenance of Sex: Evidence from Comparisons of Rates of Genomic Accumulation of Mutations and Divergence of Sex-Related Genes in Sexual and Hermaphroditic Species of <i>Caenorhabditis</i> . <i>Molecular Biology and Evolution</i> , 2008, 25, 972-979.	3.5	32
26	Spontaneous Mutational and Standing Genetic (Co)variation at Dinucleotide Microsatellites in <i>Caenorhabditis briggsae</i> and <i>Caenorhabditis elegans</i> . <i>Molecular Biology and Evolution</i> , 2008, 26, 659-669.	3.5	31
27	Increased Transmission of Mutations by Low-Condition Females: Evidence for Condition-Dependent DNA Repair. <i>PLoS Biology</i> , 2008, 6, e30.	2.6	66
28	Divergence Times in <i>Caenorhabditis</i> and <i>Drosophila</i> Inferred from Direct Estimates of the Neutral Mutation Rate. <i>Molecular Biology and Evolution</i> , 2008, 25, 778-786.	3.5	220
29	Spontaneous mutations in diploid <i>Saccharomyces cerevisiae</i> : another thousand cell generations. <i>Genetical Research</i> , 2008, 90, 229-241.	0.3	59
30	Quantifying the Decanalizing Effects of Spontaneous Mutations in Rhabditid Nematodes. <i>American Naturalist</i> , 2008, 172, 272-281.	1.0	36
31	A genome-wide view of <i>Caenorhabditis elegans</i> base-substitution mutation processes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 16310-16314.	3.3	251
32	Genetic (Co)Variation for Life Span in Rhabditid Nematodes: Role of Mutation, Selection, and History. <i>Journals of Gerontology - Series A Biological Sciences and Medical Sciences</i> , 2009, 64A, 1134-1145.	1.7	12
33	Evolution of the <i>Caenorhabditis elegans</i> Genome. <i>Molecular Biology and Evolution</i> , 2009, 26, 1199-1234.	3.5	109
34	Comparing Mutational and Standing Genetic Variability for Fitness and Size in <i>Caenorhabditis briggsae</i> and <i>C. elegans</i> . <i>Genetics</i> , 2009, 183, 685-692.	1.2	18
35	Analysis and implications of mutational variation. <i>Genetica</i> , 2009, 136, 359-369.	0.5	43
37	Spontaneous Mutation Accumulation Studies in Evolutionary Genetics. <i>Annual Review of Ecology, Evolution, and Systematics</i> , 2009, 40, 151-172.	3.8	396

#	ARTICLE	IF	CITATIONS
38	High Rate of Large Deletions in <i>Caenorhabditis briggsae</i> Mitochondrial Genome Mutation Processes. <i>Genome Biology and Evolution</i> , 2010, 2, 29-38.	1.1	48
39	RAPID DECLINE IN FITNESS OF MUTATION ACCUMULATION LINES OF GONOCHORISTIC (OUTCROSSING) CAENORHABDITIS NEMATODES. <i>Evolution; International Journal of Organic Evolution</i> , 2010, 64, 3242-3253.	1.1	15
40	Molecular population genetics and phenotypic sensitivity to ethanol for a globally diverse sample of the nematode <i>Caenorhabditis briggsae</i> . <i>Molecular Ecology</i> , 2010, 19, 798-809.	2.0	37
41	Purging Deleterious Mutations under Self Fertilization: Paradoxical Recovery in Fitness with Increasing Mutation Rate in <i>Caenorhabditis elegans</i> . <i>PLoS ONE</i> , 2010, 5, e14473.	1.1	11
42	<i>Caenorhabditis elegans</i> as a platform for molecular quantitative genetics and the systems biology of natural variation. <i>Genetical Research</i> , 2010, 92, 331-348.	0.3	61
43	Bias and Evolution of the Mutationally Accessible Phenotypic Space in a Developmental System. <i>PLoS Genetics</i> , 2010, 6, e1000877.	1.5	63
44	Natural variation in life history and aging phenotypes is associated with mitochondrial DNA deletion frequency in <i>Caenorhabditis briggsae</i> . <i>BMC Evolutionary Biology</i> , 2011, 11, 11.	3.2	33
45	No Evidence of Elevated Germline Mutation Accumulation Under Oxidative Stress in <i>Caenorhabditis elegans</i> . <i>Genetics</i> , 2011, 189, 1439-1447.	1.2	32
46	Mutation Rates and Intraspecific Divergence of the Mitochondrial Genome of <i>Pristionchus pacificus</i> . <i>Molecular Biology and Evolution</i> , 2011, 28, 2317-2326.	3.5	39
47	Reproductive isolation in <i>Caenorhabditis briggsae</i> . <i>Worm</i> , 2012, 1, 189-195.	1.0	25
48	<i>Caenorhabditis elegans</i> vulval cell fate patterning. <i>Physical Biology</i> , 2012, 9, 045001.	0.8	21
49	Variation in Base-Substitution Mutation in Experimental and Natural Lineages of <i>Caenorhabditis Nematodes</i> . <i>Genome Biology and Evolution</i> , 2012, 4, 513-522.	1.1	114
50	Invariance (?) of Mutational Parameters for Relative Fitness Over 400 Generations of Mutation Accumulation in <i>Caenorhabditis elegans</i> . <i>G3: Genes, Genomes, Genetics</i> , 2012, 2, 1497-1503.	0.8	9
51	Mutation Load: The Fitness of Individuals in Populations Where Deleterious Alleles Are Abundant. <i>Annual Review of Ecology, Evolution, and Systematics</i> , 2012, 43, 115-135.	3.8	163
52	Evidence for elevated mutation rates in low-quality genotypes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 6142-6146.	3.3	85
53	Selfish Little Circles: Transmission Bias and Evolution of Large Deletion-Bearing Mitochondrial DNA in <i>Caenorhabditis briggsae</i> Nematodes. <i>PLoS ONE</i> , 2012, 7, e41433.	1.1	51
54	In Vivo Quantification Reveals Extensive Natural Variation in Mitochondrial Form and Function in <i>Caenorhabditis briggsae</i> . <i>PLoS ONE</i> , 2012, 7, e43837.	1.1	31
55	Robustness and flexibility in nematode vulva development. <i>Trends in Genetics</i> , 2012, 28, 185-195.	2.9	58

#	ARTICLE	IF	CITATIONS
56	TEMPORAL DYNAMICS OF OUTCROSSING AND HOST MORTALITY RATES IN HOST-PATHOGEN EXPERIMENTAL COEVOLUTION. <i>Evolution; International Journal of Organic Evolution</i> , 2013, 67, 1860-1868.	1.1	21
57	The effect of spontaneous mutations on competitive ability. <i>Journal of Evolutionary Biology</i> , 2013, 26, 451-456.	0.8	22
58	Genomic Background and Generation Time Influence Deleterious Mutation Rates in <i>Daphnia</i> . <i>Genetics</i> , 2013, 193, 539-544.	1.2	18
59	Stress-induced hypermutation as a physical property of life, a force of natural selection and its role in four thought experiments. <i>Physical Biology</i> , 2013, 10, 026001.	0.8	0
60	Temperature, stress and spontaneous mutation in <i>Caenorhabditis briggsae</i> and <i>Caenorhabditis elegans</i> . <i>Biology Letters</i> , 2013, 9, 20120334.	1.0	61
61	The evolution of mutation rate in an antagonistic coevolutionary model with maternal transmission of parasites. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2013, 280, 20130647.	1.2	8
62	The Rate and Effects of Spontaneous Mutation on Fitness Traits in the Social Amoeba, <i>Dictyostelium discoideum</i> . <i>G3: Genes, Genomes, Genetics</i> , 2013, 3, 1115-1127.	0.8	19
64	Evolution of a Higher Intracellular Oxidizing Environment in <i>Caenorhabditis elegans</i> under Relaxed Selection. <i>PLoS ONE</i> , 2013, 8, e65604.	1.1	7
65	The Interaction between Selection, Demography and Selfing and How It Affects Population Viability. <i>PLoS ONE</i> , 2014, 9, e86125.	1.1	8
66	Precise estimates of mutation rate and spectrum in yeast. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, E2310-8.	3.3	362
67	Opposing Forces of A/T-Biased Mutations and G/C-Biased Gene Conversions Shape the Genome of the Nematode <i>Pristionchus pacificus</i> . <i>Genetics</i> , 2014, 196, 1145-1152.	1.2	42
68	Mainstreaming <i>Caenorhabditis elegans</i> in experimental evolution. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2014, 281, 20133055.	1.2	52
69	SPONTANEOUS MUTATION ACCUMULATION IN MULTIPLE STRAINS OF THE GREEN ALGA, <i>CHLAMYDOMONAS REINHARDTII</i> . <i>Evolution; International Journal of Organic Evolution</i> , 2014, 68, 2589-2602.	1.1	34
70	Cryptic genetic variation uncovers evolution of environmentally sensitive parameters in <i>Caenorhabditis</i> vulval development. <i>Evolution &amp; Development</i> , 2014, 16, 278-291.	1.1	14
71	Fitness decline in spontaneous mutation accumulation lines of <i>Caenorhabditis elegans</i> with varying effective population sizes. <i>Evolution; International Journal of Organic Evolution</i> , 2015, 69, 104-116.	1.1	37
72	The red death meets the abdominal bristle: Polygenic mutation for susceptibility to a bacterial pathogen in <i>Caenorhabditis elegans</i> . <i>Evolution; International Journal of Organic Evolution</i> , 2015, 69, 508-519.	1.1	6
73	Scaling, Selection, and Evolutionary Dynamics of the Mitotic Spindle. <i>Current Biology</i> , 2015, 25, 732-740.	1.8	73
74	Abiotic stress does not magnify the deleterious effects of spontaneous mutations. <i>Heredity</i> , 2015, 115, 503-508.	1.2	6

#	ARTICLE	IF	CITATIONS
75	Paths of Heritable Mitochondrial DNA Mutation and Heteroplasmy in Reference and gas-1 Strains of <i>Caenorhabditis elegans</i> . <i>Frontiers in Genetics</i> , 2016, 7, 51.	1.1	16
76	Low Genetic Quality Alters Key Dimensions of the Mutational Spectrum. <i>PLoS Biology</i> , 2016, 14, e1002419.	2.6	45
77	The mutational structure of metabolism in <i>Caenorhabditis elegans</i> . <i>Evolution; International Journal of Organic Evolution</i> , 2016, 70, 2239-2246.	1.1	30
78	Mutation rate analysis via parent-progeny sequencing of the perennial peach. I. A low rate in woody perennials and a higher mutagenicity in hybrids. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2016, 283, 20161016.	1.2	64
79	Mutation Is a Sufficient and Robust Predictor of Genetic Variation for Mitotic Spindle Traits in <i>Caenorhabditis elegans</i> . <i>Genetics</i> , 2016, 203, 1859-1870.	1.2	25
80	Experimental Evolution with <i>Caenorhabditis</i> Nematodes. <i>Genetics</i> , 2017, 206, 691-716.	1.2	94
81	Evo-devo: Developmental constraints. <i>Nature Ecology and Evolution</i> , 2017, 1, 128.	3.4	0
82	Developmental constraints shape the evolution of the nematode mid-developmental transition. <i>Nature Ecology and Evolution</i> , 2017, 1, 113.	3.4	67
83	Direct Determination of the Mutation Rate in the Bumblebee Reveals Evidence for Weak Recombination-Associated Mutation and an Approximate Rate Constancy in Insects. <i>Molecular Biology and Evolution</i> , 2017, 34, 119-130.	3.5	93
84	Mutation independently affects reproductive traits and dauer larvae development in mutation accumulation lines of <i>Caenorhabditis elegans</i> . <i>Development Genes and Evolution</i> , 2017, 227, 411-414.	0.4	0
85	Polygenicity and Epistasis Underlie Fitness-Proximal Traits in the <i>Caenorhabditis elegans</i> Multiparental Experimental Evolution (CeMEE) Panel. <i>Genetics</i> , 2017, 207, 1663-1685.	1.2	81
86	Extremely Rare Polymorphisms in <i>Saccharomyces cerevisiae</i> Allow Inference of the Mutational Spectrum. <i>PLoS Genetics</i> , 2017, 13, e1006455.	1.5	13
87	Adaptive Evolution under Extreme Genetic Drift in Oxidatively Stressed <i>Caenorhabditis elegans</i> . <i>Genome Biology and Evolution</i> , 2017, 9, 3008-3022.	1.1	10
88	Development and Evolution through the Lens of Global Gene Regulation. <i>Trends in Genetics</i> , 2018, 34, 11-20.	2.9	20
89	DNA mismatch repair preferentially protects genes from mutation. <i>Genome Research</i> , 2018, 28, 66-74.	2.4	62
90	The mutational decay of male-male and hermaphrodite-hermaphrodite competitive fitness in the androdioecious nematode <i>C. elegans</i> . <i>Heredity</i> , 2018, 120, 1-12.	1.2	11
91	Hierarchical Assessment of Mutation Properties in <i>Daphnia magna</i> . <i>G3: Genes, Genomes, Genetics</i> , 2018, 8, 3481-3487.	0.8	5
92	Network Architecture and Mutational Sensitivity of the <i>C. elegans</i> Metabolome. <i>Frontiers in Molecular Biosciences</i> , 2018, 5, 69.	1.6	4

#	ARTICLE	IF	CITATIONS
93	Complex Transmission Patterns and Age-Related Dynamics of a Selfish mtDNA Deletion. <i>Integrative and Comparative Biology</i> , 2019, 59, 983-993.	0.9	4
94	Evolution of the Mutational Process under Relaxed Selection in <i>Caenorhabditis elegans</i> . <i>Molecular Biology and Evolution</i> , 2019, 36, 239-251.	3.5	46
95	Accelerated rates of large-scale mutations in the presence of copper and nickel. <i>Genome Research</i> , 2019, 29, 64-73.	2.4	13
96	Old Trade, New Tricks: Insights into the Spontaneous Mutation Process from the Partnering of Classical Mutation Accumulation Experiments with High-Throughput Genomic Approaches. <i>Genome Biology and Evolution</i> , 2019, 11, 136-165.	1.1	110
97	Fitness and Genomic Consequences of Chronic Exposure to Low Levels of Copper and Nickel in <i>Daphnia pulex</i> Mutation Accumulation Lines. <i>G3: Genes, Genomes, Genetics</i> , 2019, 9, 61-71.	0.8	10
98	Short-term heritable variation overwhelms 200 generations of mutational variance for metabolic traits in <i>Caenorhabditis elegans</i> . <i>Evolution; International Journal of Organic Evolution</i> , 2020, 74, 2451-2464.	1.1	3
100	Fitness effects of spontaneous mutations in a warming world. <i>Evolution; International Journal of Organic Evolution</i> , 2021, 75, 1513-1524.	1.1	6
103	Mutability of mononucleotide repeats, not oxidative stress, explains the discrepancy between laboratory-accumulated mutations and the natural allele-frequency spectrum in <i>C. elegans</i> . <i>Genome Research</i> , 2021, 31, 1602-1613.	2.4	24
105	Maintaining Genetic Variation in Fitness. , 2009, , 59-81.		11
109	Mitochondrial DNA Variation and Selfish Propagation Following Experimental Bottlenecking in Two Distantly Related <i>Caenorhabditis briggsae</i> Isolates. <i>Genes</i> , 2020, 11, 77.	1.0	5
110	A broad mutational target explains a fast rate of phenotypic evolution. <i>ELife</i> , 2020, 9, .	2.8	13
114	Role of Metabolic Shifts in Protection from Mutation Damage: Characterizing Mitochondrial Membrane Potential in <i>C. Elegans</i> Gas-1 Mutants. <i>PSU McNair Scholars Online Journal</i> , 2015, 9, .	0.3	0
123	Competitive fitness analysis using Convolutional Neural Network. <i>Journal of Nematology</i> , 2020, 52, 1-15.	0.4	1
125	A larger target leads to faster evolution. <i>ELife</i> , 2020, 9, .	2.8	0
126	Mutation, selection, and the prevalence of the <i>Caenorhabditis elegans</i> heat-sensitive mortal germline phenotype. <i>G3: Genes, Genomes, Genetics</i> , 2022, 12, .	0.8	4
140	Fitness effects of somatic mutations accumulating during vegetative growth. <i>Evolutionary Ecology</i> , 2022, 36, 767-785.	0.5	6
141	Selection in a growing colony biases results of mutation accumulation experiments. <i>Scientific Reports</i> , 2022, 12, .	1.6	6
142	Multigenerational downregulation of insulin/IGF signaling in adulthood improves lineage survival, reproduction, and fitness in <i>C. elegans</i> supporting the developmental theory of ageing. <i>Evolution; International Journal of Organic Evolution</i> , 0, , .	1.1	0

#	ARTICLE	IF	CITATIONS
143	Variation in mutational (co)variances. G3: Genes, Genomes, Genetics, 2023, 13, .	0.8	4