Roel M Schaaper

List of Publications by Year
in descending order

105 papers	5,018 citations	81900 39 h-index	98798 67 g-index
106 all docs	106 docs citations	106 times ranked	2577 citing authors

#	Article	IF	Citations
1	Mechanisms of spontaneous mutagenesis: An analysis of the spectrum of spontaneous mutation in the Escherichia coli lacI gene. Journal of Molecular Biology, 1986, 189, 273-284.	4.2	330
2	Infidelity of DNA synthesis associated with bypass of apurinic sites.. Proceedings of the National Academy of Sciences of the United States of America, 1983, 80, 487-491.	7.1	297
3	Spectra of spontaneous mutations in Escherichia coli strains defective in mismatch correction: the nature of in vivo DNA replication errors.. Proceedings of the National Academy of Sciences of the United States of America, 1987, 84, 6220-6224.	7.1	284
4	Mechanisms of mutagenesis in the Escherichia coli mutator mutD5: role of DNA mismatch repair.. Proceedings of the National Academy of Sciences of the United States of America, 1988, 85, 8126-8130.	7.1	202
5	Depurination causes mutations in SOS-induced cells.. Proceedings of the National Academy of Sciences of the United States of America, 1981, 78, 1773-1777.	7.1	169
6	Depurination-induced infidelity of DNA synthesis with purified DNA replication proteins in vitro. Biochemistry, 1983, 22, 2378-2384.	2.5	153
7	Mutants in the Exo I motif of Escherichia coli dnaQ: defective proofreading and inviability due to error catastrophe.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 2856-2861.	7.1	153
8	Unequal fidelity of leading strand and lagging strand DNA replication on the Escherichia coli chromosome. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 10020-10025.	7.1	151
9	Mechanisms of ultraviolet-induced mutation. Journal of Molecular Biology, 1987, 198, 187-202.	4.2	136
10	The extreme mutator effect of Escherichia coli mutD5 results from saturation of mismatch repair by excessive DNA replication errors.. EMBO Journal, 1989, 8, 3511-3516.	7.8	131
11	DNA replication fidelity in<i>Escherichia coli</i>: a multi-DNA polymerase affair. FEMS Microbiology Reviews, 2012, 36, 1105-1121.	8.6	124
12	Rapid repeated cloning of mutant lac repressor genes. Gene, 1985, 39, 181-189.	2.2	119
13	Genetic requirements and mutational specificity of the Escherichia coli SOS mutator activity. Journal of Bacteriology, 1997, 179, 7435-7445.	2.2	119
14	Interactions among the Escherichia coli mutT, mutM, and mutY damage prevention pathways. DNA Repair, 2003, 2, 159-173.	2.8	110
15	The C-C (6-4) UV photoproduct is mutagenic in Escherichia coli.. Proceedings of the National Academy of Sciences of the United States of America, 1986, 83, 6945-6949.	7.1	97
16	Transcription-repair coupling determines the strandedness of ultraviolet mutagenesis in Escherichia coli.. Proceedings of the National Academy of Sciences of the United States of America, 1992, 89, 11036-11040.	7.1	81
17	N-Acetoxy-N-acetyl-2-aminofluorene-induced mutagenesis in the lacI gene of Escherichia coli. Carcinogenesis, 1990, 11, 1087-1095.	2.8	77
18	Effects of Escherichia coli dnaE antimutator alleles in a proofreading-deficient mutD5 strain. Journal of Bacteriology, 1995, 177, 5979-5986.	2.2	71

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19	Mutagenesis resulting from depurination is an SOS process. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1982, 106, 1-9.	1.0	64
20	Role of Escherichia coli DNA Polymerase IV in In Vivo Replication Fidelity. Journal of Bacteriology, 2004, 186, 4802-4807.	2.2	64
21	The Î¸ Subunit of Escherichia coli DNA Polymerase III: a Role in Stabilizing the Îµ Proofreading Subunit. Journal of Bacteriology, 2004, 186, 2774-2780.	2.2	64
22	DNA polymerase II as a fidelity factor in chromosomal DNA synthesis in Escherichia coli. Molecular Microbiology, 2005, 58, 61-70.	2.5	64
23	Reaction Mechanism of the Îµ Subunit of E. coli DNA Polymerase III: Insights into Active Site Metal Coordination and Catalytically Significant Residues. Journal of the American Chemical Society, 2009, 131, 1550-1556.	13.7	64
24	<i>YcbX</i> and <i>yiiM</i>, two novel determinants for resistance of <i>Escherichia coli</i> to <i>N</i>â€hydroxylated base analogues. Molecular Microbiology, 2008, 68, 51-65.	2.5	62
25	Beam image-shift accelerated data acquisition for near-atomic resolution single-particle cryo-electron tomography. Nature Communications, 2021, 12, 1957.	12.8	62
26	The Base Substitution and Frameshift Fidelity of Escherichia coli DNA Polymerase III Holoenzyme in Vitro. Journal of Biological Chemistry, 1998, 273, 23575-23584.	3.4	60
27	SOS mutator activity: Unequal mutagenesis on leading and lagging strands. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 12678-12683.	7.1	58
28	Characterization of mutational specificity within the lacI gene for a mutD5 mutator strain of Escherichia coli defective in 3'----5' exonuclease (proofreading) activity. Journal of Bacteriology, 1986, 167, 130-137.	2.2	56
29	The Î”uvrB mutations in the Ames strains of Salmonella span 15 to 119 genes. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2001, 483, 1-11.	1.0	55
30	Mutational consequences of dNTP pool imbalances in E. coli. DNA Repair, 2013, 12, 73-79.	2.8	48
31	Mutational analysis of the 3'-->5' proofreading exonuclease of Escherichia coli DNA polymerase III. Nucleic Acids Research, 1998, 26, 4005-4011.	14.5	47
32	An Escherichia coli dnaE mutation with suppressor activity toward mutator mutD5. Journal of Bacteriology, 1992, 174, 1974-1982.	2.2	46
33	Metal-induced lethality and mutagenesis: Possible role of apurinic intermediates. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1987, 177, 179-188.	1.0	43
34	Mutator Phenotype Resulting from DNA Polymerase IV Overproduction in Escherichia coli : Preferential Mutagenesis on the Lagging Strand. Journal of Bacteriology, 2005, 187, 6862-6866.	2.2	43
35	Antimutator Mutants in Bacteriophage T4 and Escherichia coli. Genetics, 1998, 148, 1579-1585.	2.9	43
36	Fidelity and Error Specificity of the Î± Catalytic Subunit of Escherichia coli DNA Polymerase III. Journal of Biological Chemistry, 1996, 271, 18947-18953.	3.4	41

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37	Multiple antimutagenesis mechanisms affect mutagenic activity and specificity of the base analog 6-N-hydroxylaminopurine in bacteria and yeast. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1998, 402, 41-50.	1.0	41
38	Saturation of DNA Mismatch Repair and Error Catastrophe by a Base Analogue in Escherichia coli. Genetics, 2002, 161, 1363-1371.	2.9	40
39	Hypersensitivity of Escherichia coli Î”(uvrB-bio) Mutants to 6-Hydroxylaminopurine and Other Base Analogs Is Due to a Defect in Molybdenum Cofactor Biosynthesis. Journal of Bacteriology, 2000, 182, 3361-3367.	2.2	39
40	Role of DNA Polymerase IV in Escherichia coli SOS Mutator Activity. Journal of Bacteriology, 2006, 188, 7977-7980.	2.2	38
41	Inhibition of spontaneous mutagenesis by vanillin and cinnamaldehyde in Escherichia coli: Dependence on recombinational repair. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2006, 602, 54-64.	1.0	36
42	A Â· T â†’ C Â· G transversions and their prevention by the Escherichia coli mutT and mutHLS pathways. Molecular Genetics and Genomics, 1989, 219, 256-262.	2.4	35
43	Hypermutability and error catastrophe due to defects in ribonucleotide reductase. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18596-18601.	7.1	35
44	Molybdenum cofactor-dependent resistance to N-hydroxylated base analogs in Escherichia coli is independent of MobA function. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2007, 619, 9-15.	1.0	34
45	The Î´ and Î´â€² Subunits of the DNA Polymerase III Holoenzyme Are Essential for Initiation Complex Formation and Processive Elongation. Journal of Biological Chemistry, 2001, 276, 35165-35175.	3.4	32
46	Model for the Catalytic Domain of the Proofreading Îµ Subunit ofEscherichia coliDNA Polymerase III Based on NMR Structural Dataâ€. Biochemistry, 2002, 41, 94-110.	2.5	32
47	Base analog N6-hydroxylaminopurine mutagenesis in Escherichia coli: genetic control and molecular specificity. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1996, 357, 1-15.	1.0	31
48	Role of <i>Escherichia coli</i> DNA polymerase I in chromosomal DNA replication fidelity. Molecular Microbiology, 2009, 74, 1114-1127.	2.5	31
49	Novel mutator mutants of E. coli nrdAB ribonucleotide reductase: Insight into allosteric regulation and control of mutation rates. DNA Repair, 2012, 11, 480-487.	2.8	31
50	The C-Terminal Domain of DnaQ Contains the Polymerase Binding Site. Journal of Bacteriology, 1999, 181, 2963-2965.	2.2	31
51	Asymmetry of frameshift mutagenesis during leading and lagging-strand replication in Escherichia coli. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2002, 501, 129-136.	1.0	30
52	Elucidation of the Îµâˆ'Î¸ Subunit Interface of Escherichia coli DNA Polymerase III by NMR Spectroscopy. Biochemistry, 2003, 42, 3635-3644.	2.5	30
53	Structure of the Escherichia coli DNA Polymerase III Ïµ-HOT Proofreading Complex. Journal of Biological Chemistry, 2006, 281, 38466-38471.	3.4	30
54	Iminohydantoin Lesion Induced in DNA by Peracids and Other Epoxidizing Oxidants. Journal of the American Chemical Society, 2009, 131, 6114-6123.	13.7	29

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55	In Vivo Protein Interactions within the <i>Escherichia coli</i> DNA Polymerase III Core. Journal of Bacteriology, 1998, 180, 1563-1566.	2.2	28
56	Effect of dNTP pool alterations on fidelity of leading and lagging strand DNA replication in E. coli. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2014, 759, 22-28.	1.0	27
57	High-accuracy lagging-strand DNA replication mediated by DNA polymerase dissociation. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4212-4217.	7.1	27
58	Suppressors of Escherichia coli mutT: antimutators for DNA replication errors. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1996, 350, 17-23.	1.0	25
59	Mismatch Extension by Escherichia coli DNA Polymerase III Holoenzyme. Journal of Biological Chemistry, 1999, 274, 3705-3710.	3.4	25
60	Role of Accessory DNA Polymerases in DNA Replication in <i>Escherichia coli</i> : Analysis of the <i>dnaX36</i> Mutator Mutant. Journal of Bacteriology, 2008, 190, 1730-1742.	2.2	25
61	Role for CysJ Flavin Reductase in Molybdenum Cofactor-Dependent Resistance of <i>Escherichia coli</i> to 6- <i>N</i> -Hydroxylaminopurine. Journal of Bacteriology, 2010, 192, 2026-2033.	2.2	25
62	Lack of Strand Bias in UV-Induced Mutagenesis in Escherichia coli. Journal of Bacteriology, 2002, 184, 4449-4454.	2.2	22
63	Distinct pathways for repairing mutagenic lesions induced by methylating and ethylating agents. Mutagenesis, 2013, 28, 341-350.	2.6	22
64	A Novel Mutator of Escherichia coli Carrying a Defect in the dgt Gene, Encoding a dGTP Triphosphohydrolase. Journal of Bacteriology, 2008, 190, 6931-6939.	2.2	21
65	dGTP Starvation in Escherichia coli Provides New Insights into the Thymineless-Death Phenomenon. PLoS Genetics, 2014, 10, e1004310.	3.5	21
66	The Escherichia coli galK2 papillation assay: its specificity and application to seven newly isolated mutator strains. Mutation Research - Environmental Mutagenesis and Related Subjects Including Methodology, 1993, 292, 175-185.	0.4	20
67	Mutability of bacteriophage M13 by ultraviolet light: Role of pyrimidine dimers. Molecular Genetics and Genomics, 1982, 185, 404-407.	2.4	19
68	Nuclear Magnetic Resonance Solution Structure of the Escherichia coli DNA Polymerase III Î¸ Subunit. Journal of Bacteriology, 2005, 187, 7081-7089.	2.2	19
69	The Bacteriophage P1 hot Gene Product Can Substitute for the Escherichia coli DNA Polymerase III Î¸ Subunit. Journal of Bacteriology, 2005, 187, 5528-5536.	2.2	19
70	Mutator mutants of Escherichia coli carrying a defect in the DNA polymerase III tau subunit. Molecular Microbiology, 2006, 59, 1149-1161.	2.5	18
71	A Critical Role for the Putative NCS2 Nucleobase Permease YjcD in the Sensitivity of Escherichia coli to Cytotoxic and Mutagenic Purine Analogs. MBio, 2013, 4, e00661-13.	4.1	15
72	Suppression of the E. coli SOS response by dNTP pool changes. Nucleic Acids Research, 2015, 43, 4109-4120.	14.5	15

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73	Stabilization of the Escherichia coli DNA polymerase III Îµ subunit by the Î¸ subunit favors in vivo assembly of the Pol III catalytic core. Archives of Biochemistry and Biophysics, 2012, 523, 135-143.	3.0	14
74	Structure of Escherichia coli dGTP Triphosphohydrolase. Journal of Biological Chemistry, 2015, 290, 10418-10429.	3.4	14
75	Insufficient levels of the <i>nrdAB</i>â€encoded ribonucleotide reductase underlie the severe growth defect of the Î”<i>hda E. coli</i> strain. Molecular Microbiology, 2017, 104, 377-399.	2.5	13
76	Phage Like It HOT. Structure, 2004, 12, 2221-2231.	3.3	12
77	Specialized mismatch repair function of Glu339 in the Phe-X-Glu motif of yeast Msh6. DNA Repair, 2007, 6, 293-303.	2.8	12
78	<i>dnaX36</i> Mutator of <i>Escherichia coli</i> : Effects of the Ï„ Subunit of the DNA Polymerase III Holoenzyme on Chromosomal DNA Replication Fidelity. Journal of Bacteriology, 2011, 193, 296-300.	2.2	11
79	Genetic characterization of moaB mutants of Escherichia coli. Research in Microbiology, 2013, 164, 689-694.	2.1	10
80	Mutagenesis in the lacI gene target of E. coli: Improved analysis for lacId and lacO mutants. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2014, 770, 79-84.	1.0	10
81	Binding of MutS protein to oligonucleotides containing a methylated or an ethylated guanine residue, and correlation with mutation frequency. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2008, 640, 107-112.	1.0	9
82	Proofreading deficiency of Pol I increases the levels of spontaneous rpoB mutations in E. coli. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2011, 712, 28-32.	1.0	9
83	TusA (YhhP) and IscS are required for molybdenum cofactorâ€dependent baseâ€analog detoxification. MicrobiologyOpen, 2013, 2, 743-755.	3.0	9
84	Extreme dNTP pool changes and hypermutability in dcd ndk strains. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2016, 784-785, 16-24.	1.0	9
85	Mutator and Antimutator Effects of the Bacteriophage P1 hot Gene Product. Journal of Bacteriology, 2006, 188, 5831-5838.	2.2	8
86	The <i>dgt</i> gene of <i>Escherichia coli</i> facilitates thymine utilization in thymineâ€requiring strains. Molecular Microbiology, 2011, 81, 1221-1232.	2.5	8
87	Complete Genome Sequence of Escherichia coli BL21-AI. Microbiology Resource Announcements, 2020, 9, .	0.6	8
88	Introduction, rescue and expression of plasmid genes in mammalian cells and Escherichia coli. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1986, 163, 3-13.	1.0	7
89	Effect of Escherichia coli dnaE antimutator mutants on mutagenesis by the base analog N4-aminocytidine. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 1998, 402, 23-28.	1.0	7
90	A continuous spectrophotometric enzyme-coupled assay for deoxynucleoside triphosphate triphosphohydrolases. Analytical Biochemistry, 2016, 496, 43-49.	2.4	7

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91	Transcriptome Analysis of Escherichia coli during dGTP Starvation. Journal of Bacteriology, 2016, 198, 1631-1644.	2.2	7
92	A preliminary CD and NMR study of theEscherichia coli DNA polymerase III ? subunit. , 1999, 36, 111-116.		6
93	Enhanced mutagenesis of <i>Salmonella</i> tester strains due to deletion of genes other than <i>uvrB</i>. Environmental and Molecular Mutagenesis, 2007, 48, 694-705.	2.2	6
94	The antimutator phenotype of E. coli mud is only apparent and results from delayed appearance of mutants. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2001, 480-481, 71-75.	1.0	5
95	The bacteriophage P1 hot gene, encoding a homolog of the E. coli DNA polymerase III Î¸ subunit, is expressed during both lysogenic and lytic growth stages. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2007, 624, 1-8.	1.0	5
96	Comment on â€œA commensal strain of <i>Staphylococcus epidermidis</i> protects against skin neoplasiaâ€•by Nakatsuji <i>et al</i> .. Science Advances, 2019, 5, eaaw3915.	10.3	5
97	Heat mutagenesis of bacteriophage Î¦X174 in SOS-induced bacteria. Mutation Research-Fundamental and Molecular Mechanisms of Mutagenesis, 1982, 105, 19-22.	1.1	4
98	Replication fidelity in E. coli: Differential leading and lagging strand effects for dnaE antimutator alleles. DNA Repair, 2019, 83, 102643.	2.8	3
99	Mechanisms of Spontaneous Mutagenesis: Clues from Mutational Specificity. , 1986, 38, 425-437.		3
100	The role of the mutT gene of Escherichia coli in maintaining replication fidelity. FEMS Microbiology Reviews, 1997, 21, 43-54.	8.6	3
101	High-resolution structures of the SAMHD1 dGTPase homolog from Leeuwenhoekiella blandensis reveal a novel mechanism of allosteric activation by dATP. Journal of Biological Chemistry, 2022, , 102073.	3.4	3
102	Binding specificities of the mismatch binding protein, MutS, to oligonucleotides containing modified bases. Nucleic Acids Symposium Series, 2001, 1, 221-222.	0.3	2
103	Heat mutagenesis of bacteriophage Ï†X174 in SOS-induced bacteria. Mutation Research-Fundamental and Molecular Mechanisms of Mutagenesis, 1982, 104, 75-78.	1.1	1
104	Suppressors of dGTP Starvation in Escherichia coli. Journal of Bacteriology, 2017, 199, .	2.2	1
105	Mismatch repair in Escherichia coli: A mechanism of mutation avoidance for the correction of mispairing based upon methylation-instructed strand. Mutation Research - Environmental Mutagenesis and Related Subjects Including Methodology, 1979, 64, 105.	0.4	0