Thomas A Kunkel

List of Publications by Citations

348 papers	45,435 citations	103 h-index	206 g-index
365 ext. papers	48,075 ext. citations	12.2 avg, IF	7.62 L-index

#	Paper	IF	Citations
348	Rapid and efficient site-specific mutagenesis without phenotypic selection. *Proceedings of the National Academy of Sciences of the United States of America*, **1985**, 82, 488-92	11.5	6016
347	Rapid and efficient site-specific mutagenesis without phenotypic selection. *Methods in Enzymology*, **1987**, 154, 367-82	1.7	4910
346	Incidence and functional consequences of hMLH1 promoter hypermethylation in colorectal carcinoma. *Proceedings of the National Academy of Sciences of the United States of America*, **1998**, 95, 6870-5	11.5	1541
345	DNA mismatch repair. *Annual Review of Biochemistry*, **2005**, 74, 681-710	29.1	1014
344	DNA replication fidelity. *Annual Review of Biochemistry*, **2000**, 69, 497-529	29.1	788
343	The accuracy of reverse transcriptase from HIV-1. *Science*, **1988**, 242, 1171-3	33.3	786
342	The Y-family of DNA polymerases. *Molecular Cell*, **2001**, 8, 7-8	17.6	737
341	Fidelity of DNA synthesis by the Thermus aquaticus DNA polymerase. *Biochemistry*, **1988**, 27, 6008-13	3.2	732
340	Efficient site-directed mutagenesis using uracil-containing DNA. *Methods in Enzymology*, **1991**, 204, 125-39	1.7	584
339	Requirement for PCNA in DNA mismatch repair at a step preceding DNA resynthesis. *Cell*, **1996**, 87, 65-73	56.2	479
338	DNA replication fidelity. *Journal of Biological Chemistry*, **2004**, 279, 16895-8	5.4	473
337	Meiotic pachytene arrest in MLH1-deficient mice. *Cell*, **1996**, 85, 1125-34	56.2	473
336	Fidelity of DNA synthesis. *Annual Review of Biochemistry*, **1982**, 51, 429-57	29.1	463
335	Yeast DNA polymerase epsilon participates in leading-strand DNA replication. *Science*, **2007**, 317, 127-30	33.3	410
334	A sensitive genetic assay for the detection of cytosine deamination: determination of rate constants and the activation energy. *Biochemistry*, **1990**, 29, 2532-7	3.2	398
333	Biochemical basis of DNA replication fidelity. *Critical Reviews in Biochemistry and Molecular Biology*, **1993**, 28, 83-126	8.7	385
332	The fidelity of DNA synthesis by eukaryotic replicative and translesion synthesis polymerases. *Cell Research*, **2008**, 18, 148-61	24.7	382

331	Cadmium is a mutagen that acts by inhibiting mismatch repair. *Nature Genetics*, **2003**, 34, 326-9	36.3	374
330	High fidelity DNA synthesis by the Thermus aquaticus DNA polymerase. *Nucleic Acids Research*, **1990**, 18, 3739-44	20.1	354
329	Division of labor at the eukaryotic replication fork. *Molecular Cell*, **2008**, 30, 137-44	17.6	353
328	Misalignment-mediated DNA synthesis errors. *Biochemistry*, **1990**, 29, 8003-11	3.2	332
327	Low fidelity DNA synthesis by human DNA polymerase-eta. *Nature*, **2000**, 404, 1011-3	50.4	323
326	DNA polymerase fidelity and the polymerase chain reaction. *Genome Research*, **1991**, 1, 17-24	9.7	319
325	Mutational specificity of depurination. *Proceedings of the National Academy of Sciences of the United States of America*, **1984**, 81, 1494-8	11.5	315
324	Abundant ribonucleotide incorporation into DNA by yeast replicative polymerases. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 4949-54	11.5	303
323	Mutation in the mismatch repair gene Msh6 causes cancer susceptibility. *Cell*, **1997**, 91, 467-77	56.2	300
322	Genome instability due to ribonucleotide incorporation into DNA. *Nature Chemical Biology*, **2010**, 6, 774-81	11.7	292
321	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, 487-91	11.5	266
320	A genetic screen identifies FAN1, a Fanconi anemia-associated nuclease necessary for DNA interstrand crosslink repair. *Molecular Cell*, **2010**, 39, 36-47	17.6	261
319	A gradient of template dependence defines distinct biological roles for family X polymerases in nonhomologous end joining. *Molecular Cell*, **2005**, 19, 357-66	17.6	259
318	Somatic mutation hotspots correlate with DNA polymerase eta error spectrum. *Nature Immunology*, **2001**, 2, 530-6	19.1	259
317	Eukaryotic DNA polymerase amino acid sequence required for 3P---5Pexonuclease activity. *Proceedings of the National Academy of Sciences of the United States of America*, **1991**, 88, 9473-7	11.5	251
316	A function for cyclin D1 in DNA repair uncovered by protein interactome analyses in human cancers. *Nature*, **2011**, 474, 230-4	50.4	247
315	Eukaryotic DNA Replication Fork. *Annual Review of Biochemistry*, **2017**, 86, 417-438	29.1	239
314	Eukaryotic Mismatch Repair in Relation to DNA Replication. *Annual Review of Genetics*, **2015**, 49, 291-313	14.5	237

313	RNase H2-initiated ribonucleotide excision repair. *Molecular Cell*, **2012**, 47, 980-6	17.6	237
312	Inactivation of Exonuclease 1 in mice results in DNA mismatch repair defects, increased cancer susceptibility, and male and female sterility. *Genes and Development*, **2003**, 17, 603-14	12.6	237
311	Preferential cis-syn thymine dimer bypass by DNA polymerase eta occurs with biased fidelity. *Nature*, **2004**, 428, 97-100	50.4	220
310	Mutagenic processing of ribonucleotides in DNA by yeast topoisomerase I. *Science*, **2011**, 332, 1561-4	33.3	215
309	Dividing the workload at a eukaryotic replication fork. *Trends in Cell Biology*, **2008**, 18, 521-7	18.3	212
308	Functions of DNA polymerases. *Advances in Protein Chemistry*, **2004**, 69, 137-65		196
307	Identification of an intrinsic 5Pdeoxyribose-5-phosphate lyase activity in human DNA polymerase lambda: a possible role in base excision repair. *Journal of Biological Chemistry*, **2001**, 276, 34659-63	5.4	194
306	Fidelity and processivity of DNA synthesis by DNA polymerase kappa, the product of the human DINB1 gene. *Journal of Biological Chemistry*, **2000**, 275, 39678-84	5.4	185
305	Saccharomyces cerevisiae MutLalpha is a mismatch repair endonuclease. *Journal of Biological Chemistry*, **2007**, 282, 37181-90	5.4	183
304	Analyzing fidelity of DNA polymerases. *Methods in Enzymology*, **1995**, 262, 217-32	1.7	183
303	Fidelity of two retroviral reverse transcriptases during DNA-dependent DNA synthesis in vitro. *Molecular and Cellular Biology*, **1989**, 9, 469-76	4.8	181
302	Structural basis for the dual coding potential of 8-oxoguanosine by a high-fidelity DNA polymerase. *EMBO Journal*, **2004**, 23, 3452-61	13	180
301	The fidelity of human DNA polymerase gamma with and without exonucleolytic proofreading and the p55 accessory subunit. *Journal of Biological Chemistry*, **2001**, 276, 38555-62	5.4	180
300	International Commission for Protection Against Environmental Mutagens and Carcinogens. Deoxyribonucleoside triphosphate levels: a critical factor in the maintenance of genetic stability. *Mutation Research - Reviews in Genetic Toxicology*, **1994**, 318, 1-64		174
299	Implication of DNA polymerase lambda in alignment-based gap filling for nonhomologous DNA end joining in human nuclear extracts. *Journal of Biological Chemistry*, **2004**, 279, 805-11	5.4	173
298	5PDeoxyribose phosphate lyase activity of human DNA polymerase iota in vitro. *Science*, **2001**, 291, 2156-9	33.3	172
297	Functional interaction of proliferating cell nuclear antigen with MSH2-MSH6 and MSH2-MSH3 complexes. *Journal of Biological Chemistry*, **2000**, 275, 36498-501	5.4	170
296	DNA-replication fidelity, mismatch repair and genome instability in cancer cells. *FEBS Journal*, **1996**, 238, 297-307		164

295	RNA-templated DNA repair. *Nature*, **2007**, 447, 338-41	50.4	161
294	Exonucleolytic proofreading. *Cell*, **1988**, 53, 837-40	56.2	160
293	Error rate and specificity of human and murine DNA polymerase eta. *Journal of Molecular Biology*, **2001**, 312, 335-46	6.5	155
292	Mutator phenotypes conferred by MLH1 overexpression and by heterozygosity for mlh1 mutations. *Molecular and Cellular Biology*, **1999**, 19, 3177-83	4.8	153
291	Fidelity of mammalian DNA polymerases. *Science*, **1981**, 213, 765-7	33.3	152
290	An Msh2 point mutation uncouples DNA mismatch repair and apoptosis. *Cancer Research*, **2004**, 64, 517-22	12.1	150
289	DNA polymerase lambda, a novel DNA repair enzyme in human cells. *Journal of Biological Chemistry*, **2002**, 277, 13184-91	5.4	149
288	Enzyme-DNA interactions required for efficient nucleotide incorporation and discrimination in human DNA polymerase beta. *Journal of Biological Chemistry*, **1996**, 271, 12141-4	5.4	146
287	The X family portrait: structural insights into biological functions of X family polymerases. *DNA Repair*, **2007**, 6, 1709-25	4.3	145
286	Depurination-induced infidelity of deoxyribonucleic acid synthesis with purified deoxyribonucleic acid replication proteins in vitro. *Biochemistry*, **1983**, 22, 2378-84	3.2	142
285	Ribonucleotides are signals for mismatch repair of leading-strand replication errors. *Molecular Cell*, **2013**, 50, 437-43	17.6	141
284	Mutation of MSH3 in endometrial cancer and evidence for its functional role in heteroduplex repair. *Nature Genetics*, **1996**, 14, 102-5	36.3	139
283	DNA replication fidelity with 8-oxodeoxyguanosine triphosphate. *Biochemistry*, **1994**, 33, 4695-701	3.2	139
282	Evidence that errors made by DNA polymerase alpha are corrected by DNA polymerase delta. *Current Biology*, **2006**, 16, 202-7	6.3	136
281	Mechanisms of mutagenesis in vivo due to imbalanced dNTP pools. *Nucleic Acids Research*, **2011**, 39, 1360-71	26.1	135
280	The 3P->5Pexonuclease of DNA polymerase delta can substitute for the 5Pflap endonuclease Rad27/Fen1 in processing Okazaki fragments and preventing genome instability. *Proceedings of the National Academy of Sciences of the United States of America*, **2001**, 98, 5122-7	11.5	131
279	Mechanism of a genetic glissando: structural biology of indel mutations. *Trends in Biochemical Sciences*, **2006**, 31, 206-14	10.3	130
278	DNA precursor asymmetries in mammalian tissue mitochondria and possible contribution to mutagenesis through reduced replication fidelity. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 4990-5	11.5	130

277	Tracking replication enzymology in vivo by genome-wide mapping of ribonucleotide incorporation. *Nature Structural and Molecular Biology*, **2015**, 22, 185-91	17.6	127
276	Exonuclease-1 deletion impairs DNA damage signaling and prolongs lifespan of telomere-dysfunctional mice. *Cell*, **2007**, 130, 863-77	56.2	127
275	A closed conformation for the Pol lambda catalytic cycle. *Nature Structural and Molecular Biology*, **2005**, 12, 97-8	17.6	127
274	RNase H and postreplication repair protect cells from ribonucleotides incorporated in DNA. *Molecular Cell*, **2012**, 45, 99-110	17.6	126
273	Unequal human immunodeficiency virus type 1 reverse transcriptase error rates with RNA and DNA templates. *Proceedings of the National Academy of Sciences of the United States of America*, **1992**, 89, 6919-23	11.5	125
272	DNA loop repair by human cell extracts. *Science*, **1994**, 266, 814-6	33.3	124
271	Frameshift errors initiated by nucleotide misincorporation. *Proceedings of the National Academy of Sciences of the United States of America*, **1990**, 87, 4946-50	11.5	123
270	Replication infidelity via a mismatch with Watson-Crick geometry. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 1862-7	11.5	122
269	Evidence for preferential mismatch repair of lagging strand DNA replication errors in yeast. *Current Biology*, **2003**, 13, 744-8	6.3	121
268	The major roles of DNA polymerases epsilon and delta at the eukaryotic replication fork are evolutionarily conserved. *PLoS Genetics*, **2011**, 7, e1002407	6	118
267	Evolving views of DNA replication (in)fidelity. *Cold Spring Harbor Symposia on Quantitative Biology*, **2009**, 74, 91-101	3.9	115
266	The fidelity of DNA polymerase beta during distributive and processive DNA synthesis. *Journal of Biological Chemistry*, **1999**, 274, 3642-50	5.4	114
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264	Functional overlap in mismatch repair by human MSH3 and MSH6. *Genetics*, **1998**, 148, 1637-46	4	113
263	Active site mutation in DNA polymerase gamma associated with progressive external ophthalmoplegia causes error-prone DNA synthesis. *Journal of Biological Chemistry*, **2002**, 277, 15225-8	5.4	112
262	Heterogeneous polymerase fidelity and mismatch repair bias genome variation and composition. *Genome Research*, **2014**, 24, 1751-64	9.7	111
261	Reduced frameshift fidelity and processivity of HIV-1 reverse transcriptase mutants containing alanine substitutions in helix H of the thumb subdomain. *Journal of Biological Chemistry*, **1995**, 270, 1951-23	5.4	111
260	Side chains that influence fidelity at the polymerase active site of Escherichia coli DNA polymerase I (Klenow fragment). *Journal of Biological Chemistry*, **1999**, 274, 3067-75	5.4	110

259	Processing ribonucleotides incorporated during eukaryotic DNA replication. *Nature Reviews Molecular Cell Biology*, **2016**, 17, 350-63	48.7	110
258	Ribonucleotides in DNA: origins, repair and consequences. *DNA Repair*, **2014**, 19, 27-37	4.3	109
257	The efficiency and specificity of apurinic/apyrimidinic site bypass by human DNA polymerase eta and Sulfolobus solfataricus Dpo4. *Journal of Biological Chemistry*, **2003**, 278, 50537-45	5.4	108
256	A structural solution for the DNA polymerase lambda-dependent repair of DNA gaps with minimal homology. *Molecular Cell*, **2004**, 13, 561-72	17.6	107
255	Topoisomerase 1-mediated removal of ribonucleotides from nascent leading-strand DNA. *Molecular Cell*, **2013**, 49, 1010-5	17.6	106
254	Low-fidelity DNA synthesis by human DNA polymerase theta. *Nucleic Acids Research*, **2008**, 36, 3847-56	20.1	106
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252	A minor groove binding track in reverse transcriptase. *Nature Structural Biology*, **1997**, 4, 194-7		105
251	Investigating the role of the little finger domain of Y-family DNA polymerases in low fidelity synthesis and translesion replication. *Journal of Biological Chemistry*, **2004**, 279, 32932-40	5.4	104
250	Direct visualization of asymmetric adenine-nucleotide-induced conformational changes in MutL alpha. *Molecular Cell*, **2008**, 29, 112-21	17.6	103
249	Saccharomyces cerevisiae DNA polymerase delta: high fidelity for base substitutions but lower fidelity for single- and multi-base deletions. *Journal of Biological Chemistry*, **2005**, 280, 29980-7	5.4	103
248	The fidelity of DNA synthesis by yeast DNA polymerase zeta alone and with accessory proteins. *Nucleic Acids Research*, **2006**, 34, 4731-42	20.1	102
247	Fidelity of mammalian DNA replication and replicative DNA polymerases. *Biochemistry*, **1991**, 30, 11751-9	3.2	102
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245	In vivo consequences of putative active site mutations in yeast DNA polymerases alpha, epsilon, delta, and zeta. *Genetics*, **2001**, 159, 47-64	4	98
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243	Error-prone replication of repeated DNA sequences by T7 DNA polymerase in the absence of its processivity subunit. *Proceedings of the National Academy of Sciences of the United States of America* , **1994**, 91, 6830-4	11.5	96
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237	Altered spectra of hypermutation in antibodies from mice deficient for the DNA mismatch repair protein PMS2. *Proceedings of the National Academy of Sciences of the United States of America*, **1998** , 95, 6953-8	11.5	92
236	Exonucleolytic proofreading by calf thymus DNA polymerase delta. *Proceedings of the National Academy of Sciences of the United States of America*, **1987**, 84, 4865-9	11.5	91
235	Participation of mouse DNA polymerase iota in strand-biased mutagenic bypass of UV photoproducts and suppression of skin cancer. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 18083-8	11.5	90
234	DNA Polymerases Divide the Labor of Genome Replication. *Trends in Cell Biology*, **2016**, 26, 640-654	18.3	88
233	Yeast origins establish a strand bias for replicational mutagenesis. *Molecular Cell*, **2002**, 10, 207-13	17.6	88
232	Mismatch repair balances leading and lagging strand DNA replication fidelity. *PLoS Genetics*, **2012**, 8, e1003016	6	87
231	Increased susceptibility to UV-induced skin carcinogenesis in polymerase eta-deficient mice. *Cancer Research*, **2006**, 66, 87-94	10.1	87
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228	Structural insight into the substrate specificity of DNA Polymerase mu. *Nature Structural and Molecular Biology*, **2007**, 14, 45-53	17.6	82
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220	Mutagenesis in vitro by DNA polymerase from an RNA tumour virus. *Nature*, **1979**, 278, 857-9	50.4	76
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214	Single-strand binding protein enhances fidelity of DNA synthesis in vitro. *Proceedings of the National Academy of Sciences of the United States of America*, **1979**, 76, 6331-5	11.5	71
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207	Differential correction of lagging-strand replication errors made by DNA polymerases {alpha} and {delta}. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 21070-5	11.5	67
206	Proofreading of DNA polymerase eta-dependent replication errors. *Journal of Biological Chemistry*, **2001**, 276, 2317-20	5.4	67

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203	Polymerase replicates both strands after homologous recombination-dependent fork restart. *Nature Structural and Molecular Biology*, **2015**, 22, 932-8	17.6	63
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201	5-ASA affects cell cycle progression in colorectal cells by reversibly activating a replication checkpoint. *Gastroenterology*, **2007**, 132, 221-35	13.3	62
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196	Evidence that DNA polymerase contributes to initiating leading strand DNA replication in Saccharomyces cerevisiae. *Nature Communications*, **2018**, 9, 858	17.4	59
195	RPA and PCNA suppress formation of large deletion errors by yeast DNA polymerase delta. *Nucleic Acids Research*, **2006**, 34, 4335-41	20.1	59
194	Localization of the deoxyribose phosphate lyase active site in human DNA polymerase iota by controlled proteolysis. *Journal of Biological Chemistry*, **2003**, 278, 29649-54	5.4	59
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187	Mismatch repair-independent increase in spontaneous mutagenesis in yeast lacking non-essential subunits of DNA polymerase δ. *PLoS Genetics*, **2010**, 6, e1001209	6	55
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185	Resistance to 6-thioguanine in mismatch repair-deficient human cancer cell lines correlates with an increase in induced mutations at the HPRT locus. *Carcinogenesis*, **1998**, 19, 1931-7	4.6	54
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183	Pol iota is a candidate for the mouse pulmonary adenoma resistance 2 locus, a major modifier of chemically induced lung neoplasia. *Cancer Research*, **2004**, 64, 1924-31	10.1	53
182	Minor groove interactions at the DNA polymerase beta active site modulate single-base deletion error rates. *Journal of Biological Chemistry*, **2000**, 275, 28033-8	5.4	53
181	Functional analysis of human MutSalpha and MutSbeta complexes in yeast. *Nucleic Acids Research*, **1999**, 27, 736-42	20.1	53
180	Biochemical properties of Saccharomyces cerevisiae DNA polymerase IV. *Journal of Biological Chemistry*, **2005**, 280, 20051-8	5.4	52
179	The use of native T7 DNA polymerase for site-directed mutagenesis. *Nucleic Acids Research*, **1989**, 17, 5408	20.1	52
178	Molecular breeding of polymerases for resistance to environmental inhibitors. *Nucleic Acids Research*, **2011**, 39, e51	20.1	51
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175	Mammalian Exo1 encodes both structural and catalytic functions that play distinct roles in essential biological processes. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E2470-9	11.5	50
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173	Differential ATP binding and intrinsic ATP hydrolysis by amino-terminal domains of the yeast Mlh1 and Pms1 proteins. *Journal of Biological Chemistry*, **2002**, 277, 3673-9	5.4	50
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