

# Keith W Caldecott

## List of Publications by Year in descending order

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101  
papers

12,447  
citations

24978

57  
h-index

31759

101  
g-index

107  
all docs

107  
docs citations

107  
times ranked

9492  
citing authors

#	ARTICLE	IF	CITATIONS
1	Single-strand break repair and genetic disease. <i>Nature Reviews Genetics</i> , 2008, 9, 619-631.	7.7	820
2	XRCC1 Stimulates Human Polynucleotide Kinase Activity at Damaged DNA Termini and Accelerates DNA Single-Strand Break Repair. <i>Cell</i> , 2001, 104, 107-117.	13.5	554
3	A requirement for PARP-1 for the assembly or stability of XRCC1 nuclear foci at sites of oxidative DNA damage. <i>Nucleic Acids Research</i> , 2003, 31, 5526-5533.	6.5	549
4	XRCC1 and DNA strand break repair. <i>DNA Repair</i> , 2003, 2, 955-969.	1.3	524
5	Defective DNA single-strand break repair in spinocerebellar ataxia with axonal neuropathy-1. <i>Nature</i> , 2005, 434, 108-113.	13.7	382
6	A human 5'-tyrosyl DNA phosphodiesterase that repairs topoisomerase-mediated DNA damage. <i>Nature</i> , 2009, 461, 674-678.	13.7	364
7	The neurodegenerative disease protein aprataxin resolves abortive DNA ligation intermediates. <i>Nature</i> , 2006, 443, 713-716.	13.7	348
8	Spatial and Temporal Cellular Responses to Single-Strand Breaks in Human Cells. <i>Molecular and Cellular Biology</i> , 2003, 23, 3974-3981.	1.1	307
9	The Protein Kinase CK2 Facilitates Repair of Chromosomal DNA Single-Strand Breaks. <i>Cell</i> , 2004, 117, 17-28.	13.5	302
10	Involvement of XRCC1 and DNA Ligase III Gene Products in DNA Base Excision Repair. <i>Journal of Biological Chemistry</i> , 1997, 272, 23970-23975.	1.6	284
11	PARP-3 and APLF Function Together to Accelerate Nonhomologous End-Joining. <i>Molecular Cell</i> , 2011, 41, 33-45.	4.5	278
12	Characterization of the XRCC1-DNA ligase III complex in vitro and its absence from mutant hamster cells. <i>Nucleic Acids Research</i> , 1995, 23, 4836-4843.	6.5	274
13	Mutations in PNKP cause microcephaly, seizures and defects in DNA repair. <i>Nature Genetics</i> , 2010, 42, 245-249.	9.4	268
14	Poly(ADP-Ribose) Polymerase 1 Accelerates Single-Strand Break Repair in Concert with Poly(ADP-Ribose) Glycohydrolase. <i>Molecular and Cellular Biology</i> , 2007, 27, 5597-5605.	1.1	266
15	DNA Strand Break Repair and Human Genetic Disease. <i>Annual Review of Genomics and Human Genetics</i> , 2007, 8, 37-55.	2.5	251
16	The Importance of Poly(ADP-Ribose) Polymerase as a Sensor of Unligated Okazaki Fragments during DNA Replication. <i>Molecular Cell</i> , 2018, 71, 319-331.e3.	4.5	251
17	XRCC1 Protein Interacts with One of Two Distinct Forms of DNA Ligase III. <i>Biochemistry</i> , 1997, 36, 5207-5211.	1.2	245
18	XRCC1 mutation is associated with PARP1 hyperactivation and cerebellar ataxia. <i>Nature</i> , 2017, 541, 87-91.	13.7	209

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19	TDP1 facilitates chromosomal single-strand break repair in neurons and is neuroprotective in vivo. <i>EMBO Journal</i> , 2007, 26, 4720-4731.	3.5	185
20	Association of XRCC1 and tyrosyl DNA phosphodiesterase (Tdp1) for the repair of topoisomerase I-mediated DNA lesions. <i>DNA Repair</i> , 2003, 2, 1087-1100.	1.3	181
21	The ataxia-oculomotor apraxia 1 gene product has a role distinct from ATM and interacts with the DNA strand break repair proteins XRCC1 and XRCC4. <i>DNA Repair</i> , 2004, 3, 1493-1502.	1.3	176
22	Mammalian DNA single-strand break repair: an X-ra(y)ted affair. <i>BioEssays</i> , 2001, 23, 447-455.	1.2	160
23	Central Role for the XRCC1 BRCT I Domain in Mammalian DNA Single-Strand Break Repair. <i>Molecular and Cellular Biology</i> , 2002, 22, 2556-2563.	1.1	157
24	XRCC3 and Rad51 Modulate Replication Fork Progression on Damaged Vertebrate Chromosomes. <i>Molecular Cell</i> , 2003, 11, 1109-1117.	4.5	148
25	PARP-1 dependent recruitment of the amyotrophic lateral sclerosis-associated protein FUS/TLS to sites of oxidative DNA damage. <i>Nucleic Acids Research</i> , 2014, 42, 307-314.	6.5	145
26	Topoisomerase II-Induced Chromosome Breakage and Translocation Is Determined by Chromosome Architecture and Transcriptional Activity. <i>Molecular Cell</i> , 2019, 75, 252-266.e8.	4.5	145
27	APLF (C2orf13) Is a Novel Human Protein Involved in the Cellular Response to Chromosomal DNA Strand Breaks. <i>Molecular and Cellular Biology</i> , 2007, 27, 3793-3803.	1.1	141
28	Mammalian single-strand break repair: Mechanisms and links with chromatin. <i>DNA Repair</i> , 2007, 6, 443-453.	1.3	141
29	TDP2-Dependent Non-Homologous End-Joining Protects against Topoisomerase II-Induced DNA Breaks and Genome Instability in Cells and In Vivo. <i>PLoS Genetics</i> , 2013, 9, e1003226.	1.5	139
30	DNA single-strand break repair. <i>Experimental Cell Research</i> , 2014, 329, 2-8.	1.2	139
31	DNA Single-Strand Break Repair and Spinocerebellar Ataxia. <i>Cell</i> , 2003, 112, 7-10.	13.5	138
32	TDP2/TTRAP Is the Major 5-Tyrosyl DNA Phosphodiesterase Activity in Vertebrate Cells and Is Critical for Cellular Resistance to Topoisomerase II-induced DNA Damage. <i>Journal of Biological Chemistry</i> , 2011, 286, 403-409.	1.6	137
33	Neuronal enhancers are hotspots for DNA single-strand break repair. <i>Nature</i> , 2021, 593, 440-444.	13.7	126
34	TDP2 protects transcription from abortive topoisomerase activity and is required for normal neural function. <i>Nature Genetics</i> , 2014, 46, 516-521.	9.4	122
35	XRCC1-DNA polymerase $\beta$ interaction is required for efficient base excision repair. <i>Nucleic Acids Research</i> , 2004, 32, 2550-2555.	6.5	120
36	APLF promotes the assembly and activity of non-homologous end joining protein complexes. <i>EMBO Journal</i> , 2012, 32, 112-125.	3.5	118

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37	Overlapping roles for PARP1 and PARP2 in the recruitment of endogenous XRCC1 and PNKP into oxidized chromatin. <i>Nucleic Acids Research</i> , 2017, 45, gkw1246.	6.5	118
38	Cross-sensitivity of $\hat{I}^3$ -ray-sensitive hamster mutants to cross-linking agents. <i>Mutation Research DNA Repair</i> , 1991, 255, 111-121.	3.8	116
39	A Cell Cycle-Specific Requirement for the XRCC1 BRCT II Domain during Mammalian DNA Strand Break Repair. <i>Molecular and Cellular Biology</i> , 2000, 20, 735-740.	1.1	115
40	The genesis of cerebellar interneurons and the prevention of neural DNA damage require XRCC1. <i>Nature Neuroscience</i> , 2009, 12, 973-980.	7.1	105
41	XRCC1 protein; Form and function. <i>DNA Repair</i> , 2019, 81, 102664.	1.3	105
42	Role of a BRCT domain in the interaction of DNA ligase III- $\hat{I}^{\pm}$ with the DNA repair protein XRCC1. <i>Current Biology</i> , 1998, 8, 877-880.	1.8	97
43	TDP2 promotes repair of topoisomerase I-mediated DNA damage in the absence of TDP1. <i>Nucleic Acids Research</i> , 2012, 40, 8371-8380.	6.5	86
44	APLF (C2orf13) Is a Novel Component of Poly(ADP-Ribose) Signaling in Mammalian Cells. <i>Molecular and Cellular Biology</i> , 2008, 28, 4620-4628.	1.1	85
45	The XRCC1 phosphate-binding pocket binds poly (ADP-ribose) and is required for XRCC1 function. <i>Nucleic Acids Research</i> , 2015, 43, 6934-6944.	6.5	83
46	XRCC1 prevents toxic PARP1 trapping during DNA base excision repair. <i>Molecular Cell</i> , 2021, 81, 3018-3030.e5.	4.5	80
47	DNA strand break repair and neurodegeneration. <i>DNA Repair</i> , 2013, 12, 558-567.	1.3	79
48	Synergistic decrease of DNA single-strand break repair rates in mouse neural cells lacking both Tdp1 and aprataxin. <i>DNA Repair</i> , 2009, 8, 760-766.	1.3	74
49	The PARP Inhibitor AZD2461 Provides Insights into the Role of PARP3 Inhibition for Both Synthetic Lethality and Tolerability with Chemotherapy in Preclinical Models. <i>Cancer Research</i> , 2016, 76, 6084-6094.	0.4	73
50	TDP1 facilitates repair of ionizing radiation-induced DNA single-strand breaks. <i>DNA Repair</i> , 2007, 6, 1485-1495.	1.3	71
51	Does Tyrosyl DNA Phosphodiesterase-2 Play a Role in Hepatitis B Virus Genome Repair?. <i>PLoS ONE</i> , 2015, 10, e0128401.	1.1	69
52	DNA single-strand breaks and neurodegeneration. <i>DNA Repair</i> , 2004, 3, 875-882.	1.3	68
53	Impact of PNKP mutations associated with microcephaly, seizures and developmental delay on enzyme activity and DNA strand break repair. <i>Nucleic Acids Research</i> , 2012, 40, 6608-6619.	6.5	62
54	The SARS-CoV-2 Nsp3 macrodomain reverses PARP9/DTX3L-dependent ADP-ribosylation induced by interferon signaling. <i>Journal of Biological Chemistry</i> , 2021, 297, 101041.	1.6	61

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55	Quantitation of intracellular NAD(P)H can monitor an imbalance of DNA single strand break repair in base excision repair deficient cells in real time. <i>Nucleic Acids Research</i> , 2003, 31, 104e-104.	6.5	60
56	One ring to bring them allâ€”The role of Ku in mammalian non-homologous end joining. <i>DNA Repair</i> , 2014, 17, 30-38.	1.3	60
57	PARP3 is a sensor of nicked nucleosomes and monoribosylates histone H2BGlu2. <i>Nature Communications</i> , 2016, 7, 12404.	5.8	60
58	DNA single-strand break repair and human genetic disease. <i>Trends in Cell Biology</i> , 2022, 32, 733-745.	3.6	59
59	Efficient Single-Strand Break Repair Requires Binding to Both Poly(ADP-Ribose) and DNA by the Central BRCT Domain of XRCC1. <i>Cell Reports</i> , 2019, 26, 573-581.e5.	2.9	58
60	Defective DNA Ligation during Short-Patch Single-Strand Break Repair in Ataxia Oculomotor Apraxia 1. <i>Molecular and Cellular Biology</i> , 2009, 29, 1354-1362.	1.1	57
61	Riboseâ€”An Internal Threat to DNA. <i>Science</i> , 2014, 343, 260-261.	6.0	57
62	The Ku-binding motif is a conserved module for recruitment and stimulation of non-homologous end-joining proteins. <i>Nature Communications</i> , 2016, 7, 11242.	5.8	57
63	Mammalian DNA base excision repair: Dancing in the moonlight. <i>DNA Repair</i> , 2020, 93, 102921.	1.3	57
64	PARP inhibition impedes the maturation of nascent DNA strands during DNA replication. <i>Nature Structural and Molecular Biology</i> , 2022, 29, 329-338.	3.6	57
65	TDP1-dependent DNA single-strand break repair and neurodegeneration. <i>Mutagenesis</i> , 2006, 21, 219-224.	1.0	56
66	DNA 3â€²-Phosphatase Activity Is Critical for Rapid Global Rates of Single-Strand Break Repair following Oxidative Stress. <i>Molecular and Cellular Biology</i> , 2009, 29, 4653-4662.	1.1	56
67	Biophysical Characterization of Human XRCC1 and Its Binding to Damaged and Undamaged DNAâ€”. <i>Biochemistry</i> , 2004, 43, 16505-16514.	1.2	55
68	TDP2 suppresses chromosomal translocations induced by DNA topoisomerase II during gene transcription. <i>Nature Communications</i> , 2017, 8, 233.	5.8	53
69	Perspectives on PARPs in S Phase. <i>Trends in Genetics</i> , 2019, 35, 412-422.	2.9	48
70	XRCC1 Stimulates Polynucleotide Kinase by Enhancing Its Damage Discrimination and Displacement from DNA Repair Intermediates. <i>Journal of Biological Chemistry</i> , 2007, 282, 28004-28013.	1.6	46
71	Measurement of Chromosomal DNA Singleâ€”Strand Breaks and Replication Fork Progression Rates. <i>Methods in Enzymology</i> , 2006, 409, 410-425.	0.4	40
72	Pathological mutations in PNKP trigger defects in DNA single-strand break repair but not DNA double-strand break repair. <i>Nucleic Acids Research</i> , 2020, 48, 6672-6684.	6.5	37

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73	Parp1 hyperactivity couples DNA breaks to aberrant neuronal calcium signalling and lethal seizures. <i>EMBO Reports</i> , 2021, 22, e51851.	2.0	37
74	Nonsyndromic cerebellar ataxias associated with disorders of DNA single-strand break repair. <i>Handbook of Clinical Neurology</i> / Edited By P J Vinken and G W Bruyn, 2018, 155, 105-115.	1.0	36
75	The threat of programmed DNA damage to neuronal genome integrity and plasticity. <i>Nature Genetics</i> , 2022, 54, 115-120.	9.4	35
76	CELL SIGNALING: The BRCT Domain: Signaling with Friends?. <i>Science</i> , 2003, 302, 579-580.	6.0	32
77	Mode of action of DNA-competitive small molecule inhibitors of tyrosyl DNA phosphodiesterase 2. <i>Biochemical Journal</i> , 2016, 473, 1869-1879.	1.7	30
78	Confirming TDP2 mutation in spinocerebellar ataxia autosomal recessive 23 (SCAR23). <i>Neurology: Genetics</i> , 2018, 4, e262.	0.9	27
79	XRCC1 protects transcription from toxic PARP1 activity during DNA base excision repair. <i>Nature Cell Biology</i> , 2021, 23, 1287-1298.	4.6	26
80	Versatility in phospho-dependent molecular recognition of the XRCC1 and XRCC4 DNA-damage scaffolds by aprataxin-family FHA domains. <i>DNA Repair</i> , 2015, 35, 116-125.	1.3	25
81	Pathogenic ARH3 mutations result in ADP-ribose chromatin scars during DNA strand break repair. <i>Nature Communications</i> , 2020, 11, 3391.	5.8	25
82	Tyrosyl DNA phosphodiesterase 2, an enzyme fit for purpose. <i>Nature Structural and Molecular Biology</i> , 2012, 19, 1212-1213.	3.6	20
83	FUS (fused in sarcoma) is a component of the cellular response to topoisomerase $\alpha$ -induced DNA breakage and transcriptional stress. <i>Life Science Alliance</i> , 2019, 2, e201800222.	1.3	20
84	Acylpeptide hydrolase is a component of the cellular response to DNA damage. <i>DNA Repair</i> , 2017, 58, 52-61.	1.3	19
85	TDP2, TOP2, and SUMO: what is ZATT about?. <i>Cell Research</i> , 2017, 27, 1405-1406.	5.7	18
86	Generation of assays and antibodies to facilitate the study of human 5 $\alpha$ -tyrosyl DNA phosphodiesterase. <i>Analytical Biochemistry</i> , 2013, 436, 145-150.	1.1	17
87	The Rev1 interacting region (RIR) motif in the scaffold protein XRCC1 mediates a low-affinity interaction with polynucleotide kinase/phosphatase (PNKP) during DNA single-strand break repair. <i>Journal of Biological Chemistry</i> , 2017, 292, 16024-16031.	1.6	16
88	Untangling trapped topoisomerases with tyrosyl-DNA phosphodiesterases. <i>DNA Repair</i> , 2020, 94, 102900.	1.3	16
89	Novel PNKP mutations causing defective DNA strand break repair and PARP1 hyperactivity in MCSZ. <i>Neurology: Genetics</i> , 2019, 5, e320.	0.9	15
90	Short-patch single-strand break repair in ataxia oculomotor apraxia-1. <i>Biochemical Society Transactions</i> , 2009, 37, 577-581.	1.6	14

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91	Divergent Requirement for a DNA Repair Enzyme during Enterovirus Infections. MBio, 2016, 7, e01931-15.	1.8	13
92	Homozygous pathogenic variant in <i>BRAT1</i> associated with nonprogressive cerebellar ataxia. Neurology: Genetics, 2019, 5, e359.	0.9	13
93	Deazaflavin Inhibitors of TDP2 with Cellular Activity Can Affect Etoposide Influx and/or Efflux. ACS Chemical Biology, 2019, 14, 1110-1114.	1.6	7
94	Characterization of a novel loss-of-function variant in TDP2 in two adult patients with spinocerebellar ataxia autosomal recessive 23 (SCAR23). Journal of Human Genetics, 2020, 65, 1135-1141.	1.1	7
95	Effects of TDP2/VPg Unlinkase Activity on Picornavirus Infections Downstream of Virus Translation. Viruses, 2020, 12, 166.	1.5	7
96	DNA damage responses and neurological disease. Preface. DNA Repair, 2008, 7, 1009.	1.3	6
97	An Achilles' heel for breast cancer?. Nature Structural and Molecular Biology, 2005, 12, 387-388.	3.6	4
98	The Role of PARPs in DNA Strand Break Repair. Cancer Drug Discovery and Development, 2015, , 47-78.	0.2	1
99	The Yin and Yang of DAXX regulation. Cell Cycle, 2015, 14, 295-296.	1.3	1
100	Chromosomal Single-Strand Break Repair. , 2009, , 261-284.		1
101	3rd International Genome Dynamics in Neuroscience Conference: "DNA repair and neurological disease". Mechanisms of Ageing and Development, 2011, 132, 353-354.	2.2	0