Smita S Patel

List of Publications by Year
in descending order

89 papers	5,580 citations	100601 38 h-index	93651 72 g-index
97 all docs	97 docs citations	97 times ranked	4298 citing authors

#	Article	IF	Citations
1	The intrinsically disordered CARDsâ€Helicase linker in RIGâ€I is a molecular gate for RNA proofreading. EMBO Journal, 2022, 41, e109782.	3.5	9
2	Quantitative methods to study helicase, DNA polymerase, and exonuclease coupling during DNA replication. Methods in Enzymology, 2022, , 75-102.	0.4	0
3	Cryo-EM Structures Reveal Transcription Initiation Steps by Yeast Mitochondrial RNA Polymerase. Molecular Cell, 2021, 81, 268-280.e5.	4.5	15
4	Replication | DNA Helicases: Hexameric Enzyme Action. , 2021, , 112-122.		0
5	Assembly and Cryo-EM structure determination of yeast mitochondrial RNA polymerase initiation complex intermediates. STAR Protocols, 2021, 2, 100431.	0.5	3
6	The dynamic landscape of transcription initiation in yeast mitochondria. Nature Communications, 2020, 11, 4281.	5.8	18
7	Structure, mechanism, and regulation of mitochondrial DNA transcription initiation. Journal of Biological Chemistry, 2020, 295, 18406-18425.	1.6	43
8	The C-terminal tails of the mitochondrial transcription factors Mtf1 and TFB2M are part of an autoinhibitory mechanism that regulates DNA binding. Journal of Biological Chemistry, 2020, 295, 6823-6830.	1.6	8
9	Phosphorylation of mitochondrial transcription factor B2 controls mitochondrial DNA binding and transcription. Biochemical and Biophysical Research Communications, 2020, 528, 580-585.	1.0	4
10	The C-terminal tail of the yeast mitochondrial transcription factor Mtf1 coordinates template strand alignment, DNA scrunching and timely transition into elongation. Nucleic Acids Research, 2020, 48, 2604-2620.	6.5	11
11	Excessive excision of correct nucleotides during <scp>DNA</scp> synthesis explained by replication hurdles. EMBO Journal, 2020, 39, e103367.	3.5	15
12	Time-resolved analysis of transcription through chromatin. Methods, 2019, 159-160, 90-95.	1.9	3
13	HDX-MS reveals dysregulated checkpoints that compromise discrimination against self RNA during RIG-I mediated autoimmunity. Nature Communications, 2018, 9, 5366.	5.8	26
14	RIG-I Uses an ATPase-Powered Translocation-Throttling Mechanism for Kinetic Proofreading of RNAs and Oligomerization. Molecular Cell, 2018, 72, 355-368.e4.	4.5	50
15	Correlating Transcription Initiation and Conformational Changes by a Single-Subunit RNA Polymerase with Near Base-Pair Resolution. Molecular Cell, 2018, 70, 695-706.e5.	4.5	25
16	Helicase promotes replication re-initiation from an RNA transcript. Nature Communications, 2018, 9, 2306.	5.8	18
17	Highly efficient 5' capping of mitochondrial RNA with NAD+ and NADH by yeast and human mitochondrial RNA polymerase. ELife, 2018, 7, .	2.8	64
18	Transcriptional fidelities of human mitochondrial POLRMT, yeast mitochondrial Rpo41, and phage T7 single-subunit RNA polymerases. Journal of Biological Chemistry, 2017, 292, 18145-18160.	1.6	29

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19	Human mitochondrial transcription factors TFAM and TFB2M work synergistically in promoter melting during transcription initiation. Nucleic Acids Research, 2017, 45, 861-874.	6.5	60
20	Methods to study the coupling between replicative helicase and leading-strand DNA polymerase at the replication fork. Methods, 2016, 108, 65-78.	1.9	4
21	The autoinhibitory CARD2-Hel2i Interface of RIG-I governs RNA selection. Nucleic Acids Research, 2016, 44, 896-909.	6.5	32
22	Overcoming a nucleosomal barrier to replication. Science Advances, 2016, 2, e1601865.	4.7	12
23	Homologous DNA strand exchange activity of the human mitochondrial DNA helicase TWINKLE. Nucleic Acids Research, 2016, 44, 4200-4210.	6.5	23
24	The Yeast Mitochondrial RNA Polymerase and Transcription Factor Complex Catalyzes Efficient Priming of DNA Synthesis on Single-stranded DNA. Journal of Biological Chemistry, 2016, 291, 16828-16839.	1.6	11
25	Structural basis for m7G recognition and 2â€²-O-methyl discrimination in capped RNAs by the innate immune receptor RIG-I. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 596-601.	3.3	257
26	Two mechanisms coordinate replication termination by the<i>Escherichia coli</i>Tusâ€“<i>Ter</i>complex. Nucleic Acids Research, 2015, 43, 5924-5935.	6.5	18
27	T7 replisome directly overcomes DNA damage. Nature Communications, 2015, 6, 10260.	5.8	42
28	Finding the Right Match Fast. Cell, 2015, 160, 809-811.	13.5	3
29	Cooperative base pair melting by helicase and polymerase positioned one nucleotide from each other. ELife, 2015, 4, .	2.8	33
30	Fluorescent Methods to Study Transcription Initiation and Transition into Elongation. Exs, 2014, 105, 105-130.	1.4	2
31	Interactions of the yeast mitochondrial RNA polymerase with the +1 and +2 promoter bases dictate transcription initiation efficiency. Nucleic Acids Research, 2014, 42, 11721-11732.	6.5	13
32	Single-Molecule Fluorescence Reveals the Unwinding Stepping Mechanism of Replicative Helicase. Cell Reports, 2014, 6, 1037-1045.	2.9	55
33	Helicase and Polymerase Move Together Close to the Fork Junction and Copy DNA in One-Nucleotide Steps. Cell Reports, 2014, 6, 1129-1138.	2.9	41
34	Relaxed Rotational and Scrunching Changes in P266L Mutant of T7 RNA Polymerase Reduce Short Abortive RNAs while Delaying Transition into Elongation. PLoS ONE, 2014, 9, e91859.	1.1	11
35	Switching from single-stranded to double-stranded DNA limits the unwinding processivity of ring-shaped T7 DNA helicase. Nucleic Acids Research, 2013, 41, 4219-4229.	6.5	19
36	Yeast Pif1 Helicase Exhibits a One-base-pair Stepping Mechanism for Unwinding Duplex DNA. Journal of Biological Chemistry, 2013, 288, 16185-16195.	1.6	49

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37	Openingâ€“closing dynamics of the mitochondrial transcription pre-initiation complex. Nucleic Acids Research, 2012, 40, 371-380.	6.5	24
38	Human Mitochondrial DNA Helicase TWINKLE Is Both an Unwinding and Annealing Helicase. Journal of Biological Chemistry, 2012, 287, 14545-14556.	1.6	56
39	Mechanism of transcription initiation by the yeast mitochondrial RNA polymerase. Biochimica Et Biophysica Acta - Gene Regulatory Mechanisms, 2012, 1819, 930-938.	0.9	36
40	ATP-induced helicase slippage reveals highly coordinated subunits. Nature, 2011, 478, 132-135.	13.7	104
41	Fluorescence-Based Assay to Measure the Real-time Kinetics of Nucleotide Incorporation during Transcription Elongation. Journal of Molecular Biology, 2011, 405, 666-678.	2.0	17
42	Structural basis of RNA recognition and activation by innate immune receptor RIG-I. Nature, 2011, 479, 423-427.	13.7	364
43	Dynamic coupling between the motors of DNA replication: hexameric helicase, DNA polymerase, and primase. Current Opinion in Chemical Biology, 2011, 15, 595-605.	2.8	63
44	Transcription Factor-dependent DNA Bending Governs Promoter Recognition by the Mitochondrial RNA Polymerase. Journal of Biological Chemistry, 2011, 286, 38805-38813.	1.6	28
45	The N-terminal Domain of the Yeast Mitochondrial RNA Polymerase Regulates Multiple Steps of Transcription. Journal of Biological Chemistry, 2011, 286, 16109-16120.	1.6	19
46	A257T Linker Region Mutant of T7 Helicase-Primase Protein Is Defective in DNA Loading and Rescued by T7 DNA Polymerase. Journal of Biological Chemistry, 2011, 286, 20490-20499.	1.6	15
47	Mitochondrial Transcription Factor Mtf1 Traps the Unwound Non-template Strand to Facilitate Open Complex Formation. Journal of Biological Chemistry, 2010, 285, 3949-3956.	1.6	31
48	Real-time observation of the transition from transcription initiation to elongation of the RNA polymerase. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 22175-22180.	3.3	67
49	Fluorescence Mapping of the Open Complex of Yeast Mitochondrial RNA Polymerase. Journal of Biological Chemistry, 2009, 284, 5514-5522.	1.6	33
50	Coordinating DNA replication by means of priming loop and differential synthesis rate. Nature, 2009, 462, 940-943.	13.7	104
51	Fluorescent Lifetime Trajectories of a Single Fluorophore Reveal Reaction Intermediates During Transcription Initiation. Journal of the American Chemical Society, 2009, 131, 9630-9631.	6.6	50
52	Model-Based Global Analysis of Heterogeneous Experimental Data Using gfit. Methods in Molecular Biology, 2009, 500, 335-359.	0.4	13
53	Experimental and Computational Analysis of DNA Unwinding and Polymerization Kinetics. Methods in Molecular Biology, 2009, 587, 57-83.	0.4	12
54	Coupling of DNA unwinding to nucleotide hydrolysis in a ring-shaped helicase. EMBO Journal, 2008, 27, 1718-1726.	3.5	48

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55	Branch migration enzyme as a Brownian ratchet. EMBO Journal, 2008, 27, 1727-1735.	3.5	27
56	Transcription Initiation in a Single-Subunit RNA Polymerase Proceeds through DNA Scrunching and Rotation of the N-Terminal Subdomains. Molecular Cell, 2008, 30, 567-577.	4.5	46
57	Nucleic Acid Unwinding by Hepatitis C Virus and Bacteriophage T7 Helicases Is Sensitive to Base Pair Stability. Journal of Biological Chemistry, 2007, 282, 21116-21123.	1.6	37
58	The Transition to an Elongation Complex by T7 RNA Polymerase Is a Multistep Process. Journal of Biological Chemistry, 2007, 282, 22879-22886.	1.6	20
59	Single-Molecule Studies Reveal Dynamics of DNA Unwinding by the Ring-Shaped T7 Helicase. Cell, 2007, 129, 1299-1309.	13.5	219
60	Rapid Binding of T7 RNA Polymerase Is Followed by Simultaneous Bending and Opening of the Promoter DNA. Biochemistry, 2006, 45, 4947-4956.	1.2	30
61	T7 RNA Polymerase-Induced Bending of Promoter DNA Is Coupled to DNA Opening. Biochemistry, 2006, 45, 4936-4946.	1.2	40
62	Sequential Release of Promoter Contacts during Transcription Initiation to Elongation Transition. Journal of Molecular Biology, 2006, 360, 466-483.	2.0	22
63	Mechanisms of a ring shaped helicase. Nucleic Acids Research, 2006, 34, 4216-4224.	6.5	88
64	Transient State Kinetics of Transcription Elongation by T7 RNA Polymerase*. Journal of Biological Chemistry, 2006, 281, 35677-35685.	1.6	67
65	Mechanisms of Helicases. Journal of Biological Chemistry, 2006, 281, 18265-18268.	1.6	197
66	DNA synthesis provides the driving force to accelerate DNA unwinding by a helicase. Nature, 2005, 435, 370-373.	13.7	163
67	Extended Upstream A-T Sequence Increases T7 Promoter Strength. Journal of Biological Chemistry, 2005, 280, 40707-40713.	1.6	42
68	Mechanochemistry of T7 DNA Helicase. Journal of Molecular Biology, 2005, 350, 452-475.	2.0	83
69	The DNA-unwinding mechanism of the ring helicase of bacteriophage T7. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7264-7269.	3.3	89
70	Fluorescence Methods for Studying the Kinetics and Thermodynamics of Transcription Initiation. Methods in Enzymology, 2003, 370, 668-686.	0.4	9
71	The +2 NTP Binding Drives Open Complex Formation in T7 RNA Polymerase. Journal of Biological Chemistry, 2002, 277, 37292-37300.	1.6	34
72	T7 DNA Helicase: A Molecular Motor that Processively and Unidirectionally Translocates Along Single-stranded DNA. Journal of Molecular Biology, 2002, 321, 807-819.	2.0	98

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73	Peculiar 2-Aminopurine Fluorescence Monitors the Dynamics of Open Complex Formation by Bacteriophage T7 RNA Polymerase. Journal of Biological Chemistry, 2001, 276, 14075-14082.	1.6	68
74	Bacteriophage T7 DNA Helicase Binds dTTP, Forms Hexamers, and Binds DNA in the Absence of Mg2+. Journal of Biological Chemistry, 1998, 273, 27315-27319.	1.6	49
75	Kinetic Mechanism of GTP Binding and RNA Synthesis during Transcription Initiation by Bacteriophage T7 RNA Polymerase. Journal of Biological Chemistry, 1997, 272, 30147-30153.	1.6	44
76	Asymmetric Interactions of Hexameric Bacteriophage T7 DNA Helicase with the 5â€²- and 3â€²-Tails of the Forked DNA Substrate. Journal of Biological Chemistry, 1997, 272, 32267-32273.	1.6	108
77	DNA Polymerase Î²:Â Multiple Conformational Changes in the Mechanism of Catalysisâ€. Biochemistry, 1997, 36, 11891-11900.	1.2	103
78	Kinetic Mechanism of Transcription Initiation by Bacteriophage T7 RNA Polymerase. Biochemistry, 1997, 36, 4223-4232.	1.2	97
79	Inhibition of T7 RNA Polymerase:Â Transcription Initiation and Transition from Initiation to Elongation Are Inhibited by T7 Lysozymeviaa Ternary Complex with RNA Polymerase and Promoter DNAâ€. Biochemistry, 1997, 36, 13954-13962.	1.2	29
80	Cooperative Interactions of Nucleotide Ligands Are Linked to Oligomerization and DNA Binding in Bacteriophage T7 Gene 4 Helicasesâ€. Biochemistry, 1996, 35, 2218-2228.	1.2	78
81	Biochemical Analysis of Mutant T7 Primase/Helicase Proteins Defective in DNA Binding, Nucleotide Hydrolysis, and the Coupling of Hydrolysis with DNA Unwinding. Journal of Biological Chemistry, 1996, 271, 26825-26834.	1.6	91
82	Selection, Identification, and Genetic Analysis of Random Mutants in the Cloned Primase/Helicase Gene of Bacteriophage T7. Journal of Biological Chemistry, 1996, 271, 26819-26824.	1.6	20
83	DNA is bound within the central hole to one or two of the six subunits of the T7 DNA helicase. Nature Structural and Molecular Biology, 1996, 3, 740-743.	3.6	117
84	Equilibrium and Stopped-flow Kinetic Studies of Interaction between T7 RNA Polymerase and Its Promoters Measured by Protein and 2-Aminopurine Fluorescence Changes. Journal of Biological Chemistry, 1996, 271, 30451-30458.	1.6	91
85	Interactions of bacteriophage T7 DNA primase/helicase protein with single-stranded and double-stranded DNAs. Biochemistry, 1993, 32, 12478-12487.	1.2	113
86	Pre-steady-state kinetic analysis of processive DNA replication including complete characterization of an exonuclease-deficient mutant. Biochemistry, 1991, 30, 511-525.	1.2	527
87	Kinetic partitioning between the exonuclease and polymerase sites in DNA error correction. Biochemistry, 1991, 30, 538-546.	1.2	209
88	An induced-fit kinetic mechanism for DNA replication fidelity: direct measurement by single-turnover kinetics. Biochemistry, 1991, 30, 526-537.	1.2	396
89	Helicases as Molecular Motors. , 0, , 179-203.		5