Umesh Varshney

List of Publications by Year
in descending order

113 papers	2,492 citations	186265 28 h-index	254184 43 g-index
116 all docs	116 docs citations	116 times ranked	2452 citing authors

#	Article	IF	Citations
1	Crucial contribution of the multiple copies of the initiator tRNA genes in the fidelity of tRNA fMet selection on the ribosomal P-site in Escherichia coli. Nucleic Acids Research, 2011, 39, 202-212.	14.5	226
2	Specificities and kinetics of uracil excision from uracil-containing DNA oligomers by Escherichia coli uracil DNA glycosylase. Biochemistry, 1991, 30, 4055-4061.	2.5	101
3	A Single Mammalian Mitochondrial Translation Initiation Factor Functionally Replaces Two Bacterial Factors. Molecular Cell, 2008, 29, 180-190.	9.7	90
4	Peptidyl-tRNA hydrolase and its critical role in protein biosynthesis. Microbiology (United Kingdom), 2006, 152, 2191-2195.	1.8	89
5	Development of a New Generation of Vectors for Gene Expression, Gene Replacement, and Protein-Protein Interaction Studies in Mycobacteria. Applied and Environmental Microbiology, 2013, 79, 1718-1729.	3.1	78
6	Chimeras between Single-stranded DNA-binding Proteins fromEscherichia coli and Mycobacterium tuberculosisReveal That Their C-terminal Domains Interact with Uracil DNA Glycosylases. Journal of Biological Chemistry, 2001, 276, 16992-16997.	3.4	69
7	A physiological connection between tmRNA and peptidyl-tRNA hydrolase functions in Escherichia coli. Nucleic Acids Research, 2004, 32, 6028-6037.	14.5	68
8	Role of 16S ribosomal RNA methylations in translation initiation in Escherichia coli. EMBO Journal, 2008, 27, 840-851.	7.8	64
9	Importance of Uracil DNA Glycosylase in Pseudomonas aeruginosa and Mycobacterium smegmatis, G+C-rich Bacteria, in Mutation Prevention, Tolerance to Acidified Nitrite, and Endurance in Mouse Macrophages. Journal of Biological Chemistry, 2003, 278, 24350-24358.	3.4	62
10	Unique features of the structure and interactions of mycobacterial uracil-DNA glycosylase: structure of a complex of the<i>Mycobacterium tuberculosis</i>enzyme in comparison with those from other sources. Acta Crystallographica Section D: Biological Crystallography, 2008, 64, 551-560.	2.5	43
11	<scp>T</scp>he IDL of <i>E. coli</i> SSB links ssDNA and protein binding by mediating proteinâ€“protein interactions. Protein Science, 2017, 26, 227-241.	7.6	41
12	One-Carbon Metabolic Pathway Rewiring in Escherichia coli Reveals an Evolutionary Advantage of 10-Formyltetrahydrofolate Synthetase (Fhs) in Survival under Hypoxia. Journal of Bacteriology, 2015, 197, 717-726.	2.2	40
13	Use of Mycobacterium smegmatis Deficient in ADP-Ribosyltransferase as Surrogate for Mycobacterium tuberculosis in Drug Testing and Mutation Analysis. PLoS ONE, 2015, 10, e0122076.	2.5	39
14	The Role of Leucine 191 of Escherichia coliUracil DNA Glycosylase in the Formation of a Highly Stable Complex with the Substrate Mimic, Ugi, and in Uracil Excision from the Synthetic Substrates. Journal of Biological Chemistry, 2001, 276, 17324-17331.	3.4	38
15	Genetic Analysis Identifies a Function for the queC (ybaX) Gene Product at an Initial Step in the Queuosine Biosynthetic Pathway in Escherichia coli. Journal of Bacteriology, 2005, 187, 6893-6901.	2.2	38
16	Important role of the nucleotide excision repair pathway in Mycobacterium smegmatis in conferring protection against commonly encountered DNA-damaging agents. Microbiology (United Kingdom), 2008, 154, 2776-2785.	1.8	38
17	Substrate specificities and functional characterization of a thermo-tolerant uracil DNA glycosylase (UdgB) from Mycobacterium tuberculosis. DNA Repair, 2007, 6, 1517-1528.	2.8	37
18	Recycling of Ribosomal Complexes Stalled at the Step of Elongation in Escherichia coli. Journal of Molecular Biology, 2008, 380, 451-464.	4.2	37

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19	SIRT6 transcriptionally regulates global protein synthesis through transcription factor Sp1 independent of its deacetylase activity. Nucleic Acids Research, 2019, 47, 9115-9131.	14.5	36
20	Biochemical Properties of Single-Stranded DNA-Binding Protein from Mycobacterium smegmatis, a Fast-growing Mycobacterium and Its Physical and Functional Interaction with Uracil DNA Glycosylases. Journal of Molecular Biology, 2002, 318, 1251-1264.	4.2	35
21	A distinct physiological role of MutY in mutation prevention in mycobacteria. Microbiology (United) Tj ETQq1 1 0.784314 rgBT /Overlo	1.8	34
22	A unique uracil-DNA binding protein of the uracil DNA glycosylase superfamily. Nucleic Acids Research, 2015, 43, 8452-8463.	14.5	34
23	Covalent binding of uracil DNA glycosylase UdgX to abasic DNA upon uracil excision. Nature Chemical Biology, 2019, 15, 607-614.	8.0	34
24	Base excision and nucleotide excision repair pathways in mycobacteria. Tuberculosis, 2011, 91, 533-543.	1.9	33
25	Cloning, over-expression and biochemical characterization of the single-stranded DNA binding protein from Mycobacterium tuberculosis. FEBS Journal, 1999, 264, 591-598.	0.2	32
26	Distamycin Analogues without Leading Amide at Their N-Termini â˘ Comparative Binding Properties to AT- and GC-Rich DNA Sequences. European Journal of Organic Chemistry, 2002, 2002, 3604-3615.	2.4	32
27	An evolutionarily conserved element in initiator tRNAs prompts ultimate steps in ribosome maturation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6126-E6134.	7.1	32
28	Uracil DNA glycosylase from Mycobacterium smegmatis and its distinct biochemical properties. FEBS Journal, 1998, 256, 580-588.	0.2	31
29	Impact of rRNA methylations on ribosome recycling and fidelity of initiation in <i>Escherichia coli</i>. Molecular Microbiology, 2009, 72, 795-808.	2.5	30
30	Synergistic effects of UdgB and Ung in mutation prevention and protection against commonly encountered DNA damaging agents in Mycobacterium smegmatis. Microbiology (United Kingdom), 2010, 156, 940-949.	1.8	30
31	Mycobacterium tuberculosis MutT1 (Rv2985) and ADPRase (Rv1700) Proteins Constitute a Two-stage Mechanism of 8-Oxo-dGTP and 8-Oxo-GTP Detoxification and Adenosine to Cytidine Mutation Avoidance. Journal of Biological Chemistry, 2013, 288, 11252-11262.	3.4	28
32	Differential effects of single-stranded DNA binding proteins (SSBs) on uracil DNA glycosylases (UDGs) from Escherichia coli and mycobacteria. Nucleic Acids Research, 1999, 27, 3487-3492.	14.5	27
33	Distinct mechanisms of DNA repair in mycobacteria and their implications in attenuation of the pathogen growth. Mechanisms of Ageing and Development, 2012, 133, 138-146.	4.6	27
34	Biochemical Properties of MutT2 Proteins from Mycobacterium tuberculosis and M. smegmatis and Their Contrasting Antimutator Roles in Escherichia coli. Journal of Bacteriology, 2013, 195, 1552-1560.	2.2	27
35	Unconventional initiator tRNAs sustain <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 13058-13063.	7.1	25
36	Important Role of the Amino Acid Attached to tRNA in Formylation and in Initiation of Protein Synthesis in Escherichia coli. Journal of Biological Chemistry, 1996, 271, 1022-1028.	3.4	24

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37	Distinctive contributions of the ribosomal P-site elements m2G966, m5C967 and the C-terminal tail of the S9 protein in the fidelity of initiation of translation in Escherichia coli. Nucleic Acids Research, 2013, 41, 4963-4975.	14.5	24
38	Distinct properties of a hypoxia specific paralog of single stranded DNA binding (SSB) protein in mycobacteria. Tuberculosis, 2018, 108, 16-25.	1.9	24
39	Effects of mutations at tyrosine 66 and asparagine 123 in the active site pocket of Escherichia coli uracil DNA glycosylase on uracil excision from synthetic DNA oligomers: evidence for the occurrence of long-range interactions between the enzyme and substrate. Nucleic Acids Research, 2002, 30, 3086-3095.	14.5	23
40	Evolution of initiator tRNAs and selection of methionine as the initiating amino acid. RNA Biology, 2016, 13, 810-819.	3.1	22
41	Regulation of translation by one-carbon metabolism in bacteria and eukaryotic organelles. Journal of Biological Chemistry, 2021, 296, 100088.	3.4	22
42	Characterization of Mycobacterium tuberculosis ribosome recycling factor (RRF) and a mutant lacking six amino acids from the C-terminal end reveals that the C-terminal residues are important for its occupancy on the ribosome. Microbiology (United Kingdom), 2002, 148, 3913-3920.	1.8	22
43	Complexes of the uracil-DNA glycosylase inhibitor protein, Ugi, with Mycobacterium smegmatis and Mycobacterium tuberculosis uracil-DNA glycosylases. Microbiology (United Kingdom), 2003, 149, 1647-1658.	1.8	20
44	Common Location of Determinants in Initiator Transfer RNAs for Initiator-Elongator Discrimination in Bacteria and in Eukaryotes. Journal of Biological Chemistry, 2003, 278, 17672-17679.	3.4	19
45	Initiation with Elongator tRNAs. Journal of Bacteriology, 2013, 195, 4202-4209.	2.2	19
46	How Many Initiator tRNA Genes Does Escherichia coli Need?. Journal of Bacteriology, 2014, 196, 2607-2615.	2.2	19
47	Use of a Coupled Transcriptional System for Consistent Overexpression and Purification of UDGâ€“Ugi Complex and Ugi fromEscherichia coli. Protein Expression and Purification, 1998, 13, 155-162.	1.3	18
48	Hijacking Translation Initiation for Synthetic Biology. ChemBioChem, 2020, 21, 1387-1396.	2.6	18
49	The Fate of the Initiator tRNAs Is Sensitive to the Critical Balance between Interacting Proteins. Journal of Biological Chemistry, 2000, 275, 20361-20367.	3.4	17
50	Detrimental Effects of Hypoxia-Specific Expression of Uracil DNA Glycosylase (Ung) in <i>Mycobacterium smegmatis</i>. Journal of Bacteriology, 2010, 192, 6439-6446.	2.2	17
51	Role of the Ribosomal P-Site Elements of m ² G966, m ⁵ C967, and the S9 C-Terminal Tail in Maintenance of the Reading Frame during Translational Elongation in Escherichia coli. Journal of Bacteriology, 2013, 195, 3524-3530.	2.2	17
52	Contributions of the N- and C-Terminal Domains of Initiation Factor 3 to Its Functions in the Fidelity of Initiation and Antiassociation of the Ribosomal Subunits. Journal of Bacteriology, 2017, 199, .	2.2	17
53	Mechanism of recycling of post-termination ribosomal complexes in eubacteria: A new role of initiation factor 3. Journal of Biosciences, 2006, 31, 281-289.	1.1	16
54	Compromised base excision repair pathway in Mycobacterium tuberculosis imparts superior adaptability in the host. PLoS Pathogens, 2021, 17, e1009452.	4.7	16

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55	Structural basis for uracil DNA glycosylase interaction with uracil: NMR study. Nucleic Acids Research, 2000, 28, 1906-1912.	14.5	15
56	Mutational Analysis of the Uracil DNA Glycosylase Inhibitor Protein and Its Interaction with Escherichia coli Uracil DNA Glycosylase. Journal of Molecular Biology, 2002, 321, 579-590.	4.2	15
57	Uracil excision repair in Mycobacterium tuberculosis cell-free extracts. Tuberculosis, 2011, 91, 212-218.	1.9	15
58	Two highly conserved features of bacterial initiator tRNAs license them to pass through distinct checkpoints in translation initiation. Nucleic Acids Research, 2017, 45, gkw854.	14.5	15
59	An unexpected absence of queuosine modification in the tRNAs of an Escherichia coli B strain. Microbiology (United Kingdom), 2002, 148, 3779-3787.	1.8	14
60	Mycobacterium tuberculosis and Escherichia coli nucleoside diphosphate kinases lack multifunctional activities to process uracil containing DNA. DNA Repair, 2004, 3, 1483-1492.	2.8	14
61	Diet-dependent depletion of queuosine in tRNAs in Caenorhabditis elegans does not lead to a developmental block. Journal of Biosciences, 2007, 32, 747-754.	1.1	13
62	An extended Shineâ€"Dalgarno sequence in mRNA functionally bypasses a vital defect in initiator tRNA. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E4224-33.	7.1	13
63	Structural characterisation of a uracil containing hairpin DNA by NMR and molecular dynamics. Nucleic Acids Research, 1999, 27, 3938-3944.	14.5	12
64	Impact of Mutating the Key Residues of a Bifunctional 5,10-Methylenetetrahydrofolate Dehydrogenase-Cyclohydrolase from <i>Escherichia coli</i> on Its Activities. Biochemistry, 2015, 54, 3504-3513.	2.5	12
65	Uracil DNA glycosylase (UDG) activities in Bradyrhizobium diazoefficiens: characterization of a new class of UDG with broad substrate specificity. Nucleic Acids Research, 2017, 45, 5863-5876.	14.5	12
66	Translation initiation in mammalian mitochondria- a prokaryotic perspective. RNA Biology, 2020, 17, 165-175.	3.1	12
67	Monomeric NADH-Oxidizing Methylenetetrahydrofolate Reductases from Mycobacterium smegmatis Lack Flavin Coenzyme. Journal of Bacteriology, 2020, 202, .	2.2	12
68	Diverse roles of nucleoside diphosphate kinase in genome stability and growth fitness. Current Genetics, 2020, 66, 671-682.	1.7	12
69	The Termination Phase in Protein Synthesis is not Obligatorily Followed by the RRF/EF-G-Dependent Recycling Phase. Journal of Molecular Biology, 2016, 428, 3577-3587.	4.2	10
70	Development of mCherry tagged UdgX as a highly sensitive molecular probe for specific detection of uracils in DNA. Biochemical and Biophysical Research Communications, 2019, 518, 38-43.	2.1	10
71	Analysis of the impact of a uracil DNA glycosylase attenuated in AP-DNA binding in maintenance of the genomic integrity in Escherichia coli. Nucleic Acids Research, 2010, 38, 2291-2301.	14.5	9
72	Structure of uracil-DNA glycosylase fromMycobacterium tuberculosis: insights into interactions with ligands. Acta Crystallographica Section F: Structural Biology Communications, 2010, 66, 887-892.	0.7	8

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73	Fidelity of translation in the presence of mammalian mitochondrial initiation factor 3. Mitochondrion, 2018, 39, 1-8.	3.4	8
74	Base excision repair pathways of bacteria: new promise for an old problem. Future Medicinal Chemistry, 2020, 12, 339-355.	2.3	8
75	Hypersensitivity of hypoxia grown Mycobacterium smegmatis to DNA damaging agents: Implications of the DNA repair deficiencies in attenuation of mycobacteria. Mechanisms of Ageing and Development, 2013, 134, 516-522.	4.6	7
76	Species-Specific Interactions of Arr with RplK Mediate Stringent Response in Bacteria. Journal of Bacteriology, 2018, 200, .	2.2	7
77	Sustenance of Escherichia coli on a single tRNAMet. Nucleic Acids Research, 2018, 46, 11566-11574.	14.5	7
78	Rapid formylation of the cellular initiator tRNA population makes a crucial contribution to its exclusive participation at the step of initiation. Nucleic Acids Research, 2019, 47, 1908-1919.	14.5	7
79	Use of a molecular beacon based fluorescent method for assaying uracil DNA glycosylase (Ung) activity and inhibitor screening. Biochemistry and Biophysics Reports, 2021, 26, 100954.	1.3	7
80	Analysis of the initiator tRNA genes from a slow- and a fast-growing mycobacterium. Archives of Microbiology, 2002, 178, 288-296.	2.2	6
81	Acquisition of a stable mutation in metY allows efficient initiation from an amber codon in Escherichia coli. Microbiology (United Kingdom), 2005, 151, 1741-1750.	1.8	6
82	Structure of the second Single Stranded DNA Binding protein (SSBb) from Mycobacterium smegmatis. Journal of Structural Biology, 2016, 196, 448-454.	2.8	6
83	Coevolution of the translational machinery optimizes initiation with unusual initiator tRNAs and initiation codons in mycoplasmas. RNA Biology, 2018, 15, 70-80.	3.1	6
84	A mutation in the ribosomal protein uS12 reveals novel functions of its universally conserved PNSA loop. Molecular Microbiology, 2021, 115, 1292-1308.	2.5	6
85	Systematic evolution of initiation factor 3 and the ribosomal protein uS12 optimizes <i>Escherichia coli</i> growth with an unconventional initiator tRNA. Molecular Microbiology, 2022, 117, 462-479.	2.5	6
86	Unusual DNA Binding Exhibited by Synthetic Distamycin Analogues Lacking the<i>N</i>-terminal Amide Unit under<i>High Salt Conditions</i>. Journal of Biomolecular Structure and Dynamics, 2001, 18, 858-871.	3.5	5
87	Substitutions at tyrosine 66 of Escherichia coli uracil DNA glycosylase lead to characterization of an efficient enzyme that is recalcitrant to product inhibition. Nucleic Acids Research, 2003, 31, 7216-7226.	14.5	5
88	Overexpression, purification, crystallization and preliminary X-ray analysis of uracilN-glycosylase fromMycobacterium tuberculosisin complex with a proteinaceous inhibitor. Acta Crystallographica Section F: Structural Biology Communications, 2006, 62, 1231-1234.	0.7	5
89	Is the cellular initiation of translation an exclusive property of the initiator tRNAs?. RNA Biology, 2015, 12, 675-680.	3.1	5
90	Rewiring of one carbon metabolism in Salmonella serves as an excellent live vaccine against systemic salmonellosis. Vaccine, 2018, 36, 7715-7727.	3.8	5

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91	Nucleoside Diphosphate Kinase Escalates A-to-C Mutations in MutT-Deficient Strains of Escherichia coli. Journal of Bacteriology, 2019, 202, .	2.2	5
92	Metabolic Flux of N10-Formyltetrahydrofolate Plays a Critical Role in the Fidelity of Translation Initiation in Escherichia coli. Journal of Molecular Biology, 2020, 432, 5473-5488.	4.2	5
93	Utilisation of 10-formyldihydrofolate as substrate by dihydrofolate reductase (DHFR) and 5-aminoimidazole-4-carboxamide ribonucleotide (AICAR) tranformylase/IMP cyclohydrolase (PurH) in Escherichia coli. Microbiology (United Kingdom), 2018, 164, 982-991.	1.8	5
94	Chimeras of Escherichia coli and Mycobacterium tuberculosis Single-Stranded DNA Binding Proteins: Characterization and Function in Escherichia coli. PLoS ONE, 2011, 6, e27216.	2.5	5
95	The Mere Lack of rT Modification in Initiator tRNA Does Not Facilitate Formylation-Independent Initiation in Escherichia coli. Journal of Bacteriology, 2001, 183, 7397-7402.	2.2	4
96	An Alternative Role of RluD in the Fidelity of Translation Initiation in Escherichia coli. Journal of Molecular Biology, 2022, 434, 167588.	4.2	4
97	Linear free-energy model description of the conformational stability of uracil-DNA glycosylase inhibitor. FEBS Journal, 2001, 261, 610-617.	0.2	3
98	The history that brought it all alive. Journal of Biosciences, 2006, 31, 437-438.	1.1	3
99	A Genetic Analysis of the Functional Interactions within Mycobacterium tuberculosis Single-Stranded DNA Binding Protein. PLoS ONE, 2014, 9, e94669.	2.5	3
100	Simultaneous presence of<i>fhs</i>and<i>purT</i>genes is disadvantageous for the fitness of<i>Escherichia coli</i>growth. FEMS Microbiology Letters, 2015, 362, fnv101.	1.8	3
101	Antimicrobial activity of fusidic acid in Escherichia coli is dependent on the relative levels of ribosome recycling factor and elongation factor G. FEMS Microbiology Letters, 2018, 365, .	1.8	3
102	G4 DNA present at human telomeric DNA contributes toward reduced sensitivity to Î3-radiation induced oxidative damage, but not bulky adduct formation. International Journal of Radiation Biology, 2021, 97, 1166-1180.	1.8	3
103	Physiological role of FolD (methylenetetrahydrofolate dehydrogenase), FchA (methenyltetrahydrofolate cyclohydrolase) and Fhs (formyltetrahydrofolate synthetase) from Clostridium perfringens in a heterologous model of Escherichia coli. Microbiology (United Kingdom), 2016, 162, 145-155.	1.8	3
104	Use of sequence microdivergence in mycobacterial ortholog to analyze contributions of the water-activating loop histidine of Escherichia coli uracilâ€“DNA glycosylase in reactant binding and catalysis. Biochemical and Biophysical Research Communications, 2004, 320, 893-899.	2.1	2
105	The ribosome and the 2009 Nobel Prize in Chemistry. Resonance, 2010, 15, 526-537.	0.3	2
106	Development of Assay Systems for Amber Codon Decoding at the Steps of Initiation and Elongation in Mycobacteria. Journal of Bacteriology, 2018, 200, .	2.2	2
107	Structural insights into the specificity and catalytic mechanism of mycobacterial nucleotide pool sanitizing enzyme MutT2. Journal of Structural Biology, 2018, 204, 449-456.	2.8	1
108	Contrasting effects of mutating active site residues, aspartic acid 64 and histidine 187 of Escherichia coli uracil-DNA glycosylase on uracil excision and interaction with an inhibitor protein. Indian Journal of Biochemistry and Biophysics, 2002, 39, 312-7.	0.0	1

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109	Role of the nucleotide excision repair pathway proteins (UvrB and UvrD2) in recycling UdgB, a base excision repair enzyme in Mycobacterium smegmatis. DNA Repair, 2022, 113, 103316.	2.8	1
110	Contributory presentations/posters. Journal of Biosciences, 1999, 24, 33-198.	1.1	0
111	Role of the insertion region in mammalian mitochondrial initiation factor 2 in translational initiation. FASEB Journal, 2007, 21, A280.	0.5	0
112	Nudix hydrolases with Coenzyme A (CoA) and acyl-CoA pyrophosphatase activities confer growth advantage to Mycobacterium smegmatis. Microbiology (United Kingdom), 2019, 165, 1219-1232.	1.8	0
113	Plasticity, ligand conformation and enzyme action of <i>Mycobacterium smegmatis</i> MutT1. Acta Crystallographica Section D: Structural Biology, 2020, 76, 982-992.	2.3	0