Paul Schimmel

List of Publications by Year
in descending order

80 papers	6,475 citations	117453 34 h-index	66788 78 g-index
85 all docs	85 docs citations	85 times ranked	4810 citing authors

#	Article	IF	Citations
1	A simple structural feature is a major determinant of the identity of a transfer RNA. Nature, 1988, 333, 140-145.	13.7	620
2	Aminoacyl tRNA Synthetases: General Scheme of Structure-Function Relationships in the Polypeptides and Recognition of Transfer RNAs. Annual Review of Biochemistry, 1987, 56, 125-158.	5.0	529
3	Two Distinct Cytokines Released from a Human Aminoacyl-tRNA Synthetase. Science, 1999, 284, 147-151.	6.0	455
4	Ribosome stalling induced by mutation of a CNS-specific tRNA causes neurodegeneration. Science, 2014, 345, 455-459.	6.0	378
5	Aminoacylation of RNA minihelices with alanine. Nature, 1989, 337, 478-481.	13.7	328
6	Essential nontranslational functions of tRNA synthetases. Nature Chemical Biology, 2013, 9, 145-153.	3.9	320
7	Aminoacylation error correction. Nature, 1996, 384, 33-34.	13.7	300
8	New functions of aminoacyl-tRNA synthetases beyond translation. Nature Reviews Molecular Cell Biology, 2010, 11, 668-674.	16.1	284
9	Modular arrangement of functional domains along the sequence of an aminoacyl tRNA synthetase. Nature, 1983, 306, 441-447.	13.7	192
10	Two Classes of tRNA Synthetases Suggested by Sterically Compatible Dockings on tRNA Acceptor Stem. Cell, 2001, 104, 191-193.	13.5	170
11	Aminoacyl tRNA synthetases as targets for new antiâ€infectives. FASEB Journal, 1998, 12, 1599-1609.	0.2	160
12	An aminoacyl tRNA synthetase binds to a specific DNA sequence and regulates its gene transcription. Nature, 1981, 291, 632-635.	13.7	156
13	Aminoacyl-tRNA synthetases: potential markers of genetic code development. Trends in Biochemical Sciences, 2001, 26, 591-596.	3.7	143
14	A new troponin T and cDNA clones for 13 different muscle proteins, found by shotgun sequencing. Nature, 1983, 302, 718-721.	13.7	139
15	Structural Switch of Lysyl-tRNA Synthetase between Translation and Transcription. Molecular Cell, 2013, 49, 30-42.	4.5	131
16	Functional contacts of a transfer RNA synthetase with 2â€²-hydroxyl groups in the RNA minor groove. Nature, 1992, 357, 513-515.	13.7	127
17	A human tRNA synthetase is a potent PARP1-activating effector target for resveratrol. Nature, 2015, 519, 370-373.	13.7	122
18	PANDORA-seq expands the repertoire of regulatory small RNAs by overcoming RNA modifications. Nature Cell Biology, 2021, 23, 424-436.	4.6	115

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19	Human tRNA synthetase catalytic nulls with diverse functions. Science, 2014, 345, 328-332.	6.0	101
20	Understanding structural relationships proteins of unsolved three-dimensional structure. Proteins: Structure, Function and Bioinformatics, 1990, 7, 99-111.	1.5	98
21	Discrete Determinants in Transfer RNA for Editing and Aminoacylation. Science, 1997, 276, 1250-1252.	6.0	90
22	A covalent adduct between the uracil ring and the active site of an aminoacyl tRNA synthetase. Nature, 1982, 298, 136-140.	13.7	86
23	The cytoplasmic prolyl-tRNA synthetase of the malaria parasite is a dual-stage target of febrifugine and its analogs. Science Translational Medicine, 2015, 7, 288ra77.	5.8	82
24	The selective tRNA aminoacylation mechanism based on a single Gâ€¢U pair. Nature, 2014, 510, 507-511.	13.7	80
25	Deficiencies in tRNA synthetase editing activity cause cardioproteinopathy. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17570-17575.	3.3	76
26	Classes of aminoacyl-tRNA synthetases and the establishment of the genetic code. Trends in Biochemical Sciences, 1991, 16, 1-3.	3.7	74
27	Inhibitors of aminoacyl-tRNA synthetases as novel anti-infectives. Expert Opinion on Investigational Drugs, 2000, 9, 1767-1775.	1.9	59
28	Atomic Determinants for Aminoacylation of RNA Minihelices and Relationship to Genetic Code. Accounts of Chemical Research, 1999, 32, 368-375.	7.6	50
29	Errors from Selective Disruption of the Editing Center in a tRNA Synthetaseâ€. Biochemistry, 2000, 39, 8180-8186.	1.2	49
30	An aminoacyl tRNA synthetase whose sequence fits into neither of the two known classes. Nature, 2001, 411, 110-114.	13.7	46
31	Small RNA helices as substrates for aminoacylation and their relationship to charging of transfer RNAs. FEBS Journal, 1992, 206, 315-321.	0.2	43
32	Double mimicry evades tRNA synthetase editing by toxic vegetable-sourced non-proteinogenic amino acid. Nature Communications, 2017, 8, 2281.	5.8	41
33	Alternative stable conformation capable of protein misinteraction links tRNA synthetase to peripheral neuropathy. Nucleic Acids Research, 2017, 45, 8091-8104.	6.5	38
34	ANKRD16 prevents neuron loss caused by an editing-defective tRNA synthetase. Nature, 2018, 557, 510-515.	13.7	37
35	Aminoacylation of RNA Minihelices: Implications for tRNA Synthetase Structural Design and Evolution. Critical Reviews in Biochemistry and Molecular Biology, 1993, 28, 309-322.	2.3	36
36	Tyrosyl-tRNA synthetase stimulates thrombopoietin-independent hematopoiesis accelerating recovery from thrombocytopenia. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E8228-E8235.	3.3	36

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37	Idiographic representation of conserved domain of a class II tRNA synthetase of unknown structure. Protein Science, 1993, 2, 2259-2262.	3.1	35
38	Evolutionary Gain of Alanine Mischarging to Noncognate tRNAs with a G4:U69 Base Pair. Journal of the American Chemical Society, 2016, 138, 12948-12955.	6.6	35
39	Crystal Structure of an EMAP-II-Like Cytokine Released from a Human tRNA Synthetase. Helvetica Chimica Acta, 2003, 86, 1246-1257.	1.0	34
40	Mistranslation and its control by tRNA synthetases. Philosophical Transactions of the Royal Society B: Biological Sciences, 2011, 366, 2965-2971.	1.8	34
41	Nucleotide Determinants for tRNA-Dependent Amino Acid Discrimination by a Class I tRNA Synthetase. Biochemistry, 1999, 38, 16898-16903.	1.2	33
42	Simultaneous binding of two proteins to opposite sides of a single transfer RNA. Nature Structural Biology, 2001, 8, 344-348.	9.7	33
43	Aminoacylation of RNA oligonucleotides: minimalist structures and origin of specificity. FASEB Journal, 1993, 7, 282-289.	0.2	30
44	CMT disease severity correlates with mutation-induced open conformation of histidyl-tRNA synthetase, not aminoacylation loss, in patient cells. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19440-19448.	3.3	28
45	Evidence that Specificity of Microhelix Charging by a Class I tRNA Synthetase Occurs in the Transition State of Catalysisâ€. Biochemistry, 1996, 35, 608-615.	1.2	26
46	Distinct ways of G:U recognition by conserved tRNA binding motifs. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 7527-7532.	3.3	26
47	Regulation of ex-translational activities is the primary function of the multi-tRNA synthetase complex. Nucleic Acids Research, 2021, 49, 3603-3616.	6.5	25
48	Evidence for Breaking Domainâ˘'Domain Functional Communication in a Synthetaseâ˘'tRNA Complexâ€. Biochemistry, 1999, 38, 16359-16365.	1.2	24
49	Small RNA Oligonucleotide Substrates for Specific Aminoacylations. , 0, , 349-370.		24
50	RNA minihelices and the decoding of genetic information. FASEB Journal, 1991, 5, 2180-2187.	0.2	22
51	Intron locations and functional deletions in relation to the design and evolution of a subgroup of class I tRNA synthetases. Protein Science, 1992, 1, 1387-1391.	3.1	22
52	C-Terminal Zinc-Containing Peptide Required for RNA Recognition by a Class I tRNA Synthetaseâ€. Biochemistry, 1996, 35, 4139-4145.	1.2	22
53	Reconstruction of Quaternary Structures of Class II tRNA Synthetases by Rational Mutagenensis of a Conserved Domainâ€. Biochemistry, 1997, 36, 15041-15048.	1.2	22
54	A Mechanism for Reducing Entropic Cost of Induced Fit in Proteinâ˘'RNA Recognitionâ€. Biochemistry, 1996, 35, 8095-8102.	1.2	21

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55	Structure-Based Phylogeny of Class IIa tRNA Synthetases in Relation to an Unusual Biochemistry. Journal of Molecular Evolution, 2001, 53, 261-268.	0.8	20
56	Amino acid binding by the Class I aminoacylâ€tRNA synthetases: Role for a conserved proline in the signature sequence. Protein Science, 1992, 1, 575-581.	3.1	19
57	CMT2N-causing aminoacylation domain mutants enable Nrp1 interaction with AlaRS. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	16
58	Relaxed sequence constraints favor mutational freedom in idiosyncratic metazoan mitochondrial tRNAs. Nature Communications, 2020, 11, 969.	5.8	15
59	Zinc-Dependent tRNA Binding by a Peptide Element within a tRNA Synthetase. Biochemistry, 1997, 36, 6739-6744.	1.2	13
60	tRNA Structure Goes from L to Î». Cell, 2003, 113, 276-278.	13.5	12
61	An alternative conformation of human TrpRS suggests a role of zinc in activating non-enzymatic function. RNA Biology, 2018, 15, 649-658.	1.5	12
62	X-shaped structure of bacterial heterotetrameric tRNA synthetase suggests cryptic prokaryote functions and a rationale for synthetase classifications. Nucleic Acids Research, 2021, 49, 10106-10119.	6.5	12
63	An Editing Activity That Prevents Mistranslation and Connection to Disease. Journal of Biological Chemistry, 2008, 283, 28777-28782.	1.6	9
64	p53-Dependent DNA damage response sensitive to editing-defective tRNA synthetase in zebrafish. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8460-8465.	3.3	9
65	A metal-binding motif implicated in RNA recognition by an aminoacyl-tRNA synthetase and by a retroviral gene product. Molecular Microbiology, 1992, 6, 1259-1262.	1.2	8
66	Evidence for Distinct Locations for Metal Binding Sites in Two Closely Related Class I tRNA Synthetases. Journal of Biomolecular Structure and Dynamics, 1993, 11, 571-581.	2.0	7
67	Alanine Transfer RNA Synthetase: Structure-Function Relationships and Molecular Recognition of Transfer RNA. Advances in Enzymology and Related Areas of Molecular Biology, 2006, 63, 233-270.	1.3	6
68	Alternative splicing creates two new architectures for human tyrosyl-tRNA synthetase. Nucleic Acids Research, 2016, 44, 1247-1255.	6.5	6
69	Construction of Intra-Domain Chimeras of Aminoacyl-tRNA Synthetases. Journal of Biomolecular Structure and Dynamics, 1989, 7, 225-234.	2.0	5
70	'Distorted' RNA helix recognition. Nature, 1996, 384, 422-422.	13.7	5
71	Synthesis of Two Polypeptide Subunits of an Aminoacyl tRNA Synthetase as a Single Polypeptide Chain. Journal of Biomolecular Structure and Dynamics, 1983, 1, 225-229.	2.0	2
72	Translation Silenced by Fused Pair of tRNA Synthetases. Cell, 2004, 119, 147-148.	13.5	2

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73	Industry benefits from the public funding of intellectual curiosity. Nature, 2000, 406, 826-826.	13.7	1
74	Public Funding of Intellectual Curiosity. IUBMB Life, 2000, 50, 345-346.	1.5	1
75	RNA Scaffolds for Minihelix-Based Aminoacyl Transfer: Design of â€œTranspeptizymesâ€• Journal of Biomolecular Structure and Dynamics, 2000, 17, 29-37.	2.0	1
76	The endless frontier of tRNA synthetases. The Enzymes, 2020, 48, 1-10.	0.7	1
77	Evolution and Future of Biotechnology. ACS Symposium Series, 1988, , 30-35.	0.5	1
78	Sca-1 As a Marker of Stress-Induced Thrombopoiesis in Mice. Blood, 2019, 134, 1068-1068.	0.6	1
79	Introducing New Amino Acids into Proteins. Scientific World Journal, The, 2002, 2, 47-48.	0.8	0
80	Extracellular Tyrosyl-tRNA Synthetase Is a Potent Stimulator of Thrombocytopoiesis. Blood, 2016, 128, 1476-1476.	0.6	0