

# Johann Heider

## List of Publications by Year in descending order

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107  
papers

9,625  
citations

44069

48  
h-index

38395

95  
g-index

117  
all docs

117  
docs citations

117  
times ranked

7519  
citing authors

#	ARTICLE	IF	CITATIONS
1	Microbial degradation of aromatic compounds – from one strategy to four. Nature Reviews Microbiology, 2011, 9, 803-816.	28.6	952
2	Selenocysteine: the 21st amino acid. Molecular Microbiology, 1991, 5, 515-520.	2.5	883
3	Anaerobic Microbial Degradation of Hydrocarbons: From Enzymatic Reactions to the Environment. Journal of Molecular Microbiology and Biotechnology, 2016, 26, 5-28.	1.0	615
4	Anaerobic bacterial metabolism of hydrocarbons. FEMS Microbiology Reviews, 1998, 22, 459-473.	8.6	400
5	Selenoprotein synthesis: an expansion of the genetic code. Trends in Biochemical Sciences, 1991, 16, 463-467.	7.5	352
6	Biochemical and genetic characterization of benzylsuccinate synthase from <i>Thauera aromatica</i> : a new glycyl radical enzyme catalysing the first step in anaerobic toluene metabolism. Molecular Microbiology, 1998, 28, 615-628.	2.5	276
7	Anaerobic Metabolism of Aromatic Compounds. FEBS Journal, 1997, 243, 577-596.	0.2	272
8	Evidence That Anaerobic Oxidation of Toluene in the Denitrifying Bacterium <i>Thauera aromatica</i> is Initiated by Formation of Benzylsuccinate from Toluene and Fumarate. FEBS Journal, 1996, 238, 661-668.	0.2	268
9	The genome sequence of an anaerobic aromatic-degrading denitrifying bacterium, strain EbN1. Archives of Microbiology, 2005, 183, 27-36.	2.2	266
10	Features of the formate dehydrogenase mRNA necessary for decoding of the UGA codon as selenocysteine.. Proceedings of the National Academy of Sciences of the United States of America, 1990, 87, 4660-4664.	7.1	256
11	Anaerobic oxidation of aromatic compounds and hydrocarbons. Current Opinion in Chemical Biology, 2002, 6, 604-611.	6.1	190
12	Role of the Extremolytes Ectoine and Hydroxyectoine as Stress Protectants and Nutrients: Genetics, Phylogenomics, Biochemistry, and Structural Analysis. Genes, 2018, 9, 177.	2.4	177
13	Ethylbenzene Dehydrogenase, a Novel Hydrocarbon-oxidizing Molybdenum/Iron-Sulfur/Heme Enzyme. Journal of Biological Chemistry, 2001, 276, 21381-21386.	3.4	174
14	Adding handles to unhandy substrates: anaerobic hydrocarbon activation mechanisms. Current Opinion in Chemical Biology, 2007, 11, 188-194.	6.1	170
15	Crystal Structure of Ethylbenzene Dehydrogenase from <i>Aromatoleum aromaticum</i> . Structure, 2006, 14, 1377-1388.	3.3	168
16	Coding from a distance: dissection of the mRNA determinants required for the incorporation of selenocysteine into protein.. EMBO Journal, 1992, 11, 3759-3766.	7.8	163
17	Initial reactions of anaerobic metabolism of alkylbenzenes in denitrifying and sulfate-reducing bacteria. Archives of Microbiology, 1998, 170, 377-384.	2.2	141
18	BN/CC Isosteric Compounds as Enzyme Inhibitors: <i>N</i> - and <i>B</i> -Ethyl-1,2-azaborine Inhibit Ethylbenzene Hydroxylation as Nonconvertible Substrate Analogues. Angewandte Chemie - International Edition, 2013, 52, 2599-2601.	13.8	125

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19	A new family of CoA-transferases. FEBS Letters, 2001, 509, 345-349.	2.8	121
20	Genes encoding the candidate enzyme for anaerobic activation of <i>n</i> -alkanes in the denitrifying bacterium, strain HxN1. Environmental Microbiology, 2008, 10, 376-385.	3.8	121
21	Expression and operon structure of the sel genes of Escherichia coli and identification of a third selenium-containing formate dehydrogenase isoenzyme. Journal of Bacteriology, 1991, 173, 4983-4993.	2.2	118
22	Microbial Anaerobic Aromatic Metabolism. Anaerobe, 1997, 3, 1-22.	2.1	116
23	New glycyl radical enzymes catalysing key metabolic steps in anaerobic bacteria. Biological Chemistry, 2005, 386, 981-8.	2.5	110
24	Characterization of 2-ketoisovalerate ferredoxin oxidoreductase, a new and reversible coenzyme A-dependent enzyme involved in peptide fermentation by hyperthermophilic archaea. Journal of Bacteriology, 1996, 178, 780-787.	2.2	109
25	Selenium Metabolism in Micro-organisms. Advances in Microbial Physiology, 1993, 35, 71-109.	2.4	106
26	Purification, characterization, and metabolic function of tungsten-containing aldehyde ferredoxin oxidoreductase from the hyperthermophilic and proteolytic archaeon Thermococcus strain ES-1. Journal of Bacteriology, 1995, 177, 4757-4764.	2.2	99
27	Interaction of translation factor SELB with the formate dehydrogenase H selenopolypeptide mRNA. Proceedings of the National Academy of Sciences of the United States of America, 1993, 90, 4181-4185.	7.1	94
28	Anaerobic Toluene Catabolism of <i>Thauera aromatica</i> : the Operon Codes for Enzymes of $\text{H}^2$ Oxidation of the Intermediate Benzylsuccinate. Journal of Bacteriology, 2000, 182, 272-277.	2.2	92
29	Genes involved in the anaerobic degradation of toluene in a denitrifying bacterium, strain EbN1. Archives of Microbiology, 2004, 181, 182-194.	2.2	90
30	Phototrophic utilization of toluene under anoxic conditions by a new strain of Blastochloris sulfoviridis. Archives of Microbiology, 1999, 172, 204-212.	2.2	86
31	Crystal Structure and Enzyme Kinetics of the (S)-Specific 1-Phenylethanol Dehydrogenase of the Denitrifying Bacterium Strain EbN1. Biochemistry, 2006, 45, 82-93.	2.5	84
32	Succinyl-CoA:(R)-Benzylsuccinate CoA-Transferase: an Enzyme of the Anaerobic Toluene Catabolic Pathway in Denitrifying Bacteria. Journal of Bacteriology, 2001, 183, 4288-4295.	2.2	78
33	Aerobic metabolism of phenylacetic acids in Azoarcus evansii. Archives of Microbiology, 2002, 178, 180-192.	2.2	77
34	Differential induction of enzymes involved in anaerobic metabolism of aromatic compounds in the denitrifying bacterium Thauera aromatica. Archives of Microbiology, 1998, 170, 120-131.	2.2	75
35	Anaerobic toluene-catabolic pathway in denitrifying Thauera aromatica: activation and $\text{H}^2$ -oxidation of the first intermediate, (R)-(+)-benzylsuccinate. Microbiology (United Kingdom), 1999, 145, 3265-3271.	1.8	73
36	(S)-1-Phenylethanol dehydrogenase of Azoarcus sp. strain EbN1, an enzyme of anaerobic ethylbenzene catabolism. Archives of Microbiology, 2001, 176, 129-135.	2.2	71

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37	Type IV CRISPR RNA processing and effector complex formation in <i>Aromatoleum aromaticum</i> . <i>Nature Microbiology</i> , 2019, 4, 89-96.	13.3	70
38	The path of unspecific incorporation of selenium in <i>Escherichia coli</i> . <i>Archives of Microbiology</i> , 1997, 168, 421-427.	2.2	69
39	A Specialized Aspartokinase Enhances the Biosynthesis of the Osmoprotectants Ectoine and Hydroxyectoine in <i>Pseudomonas stutzeri</i> A1501. <i>Journal of Bacteriology</i> , 2011, 193, 4456-4468.	2.2	69
40	Kinetics and Mechanism of Oxygen-Independent Hydrocarbon Hydroxylation by Ethylbenzene Dehydrogenase. <i>Biochemistry</i> , 2007, 46, 7637-7646.	2.5	68
41	Biochemical Properties of Ectoine Hydroxylases from Extremophiles and Their Wider Taxonomic Distribution among Microorganisms. <i>PLoS ONE</i> , 2014, 9, e93809.	2.5	68
42	Strangers in the archaeal world: osmostress-responsive biosynthesis of ectoine and hydroxyectoine by the marine thaumarchaeon <i>Nitrosopumilus maritimus</i> . <i>Environmental Microbiology</i> , 2016, 18, 1227-1248.	3.8	66
43	Global transcriptome analysis of spore formation in <i>Myxococcus xanthus</i> reveals a locus necessary for cell differentiation. <i>BMC Genomics</i> , 2010, 11, 264.	2.8	65
44	Effects of elemental sulfur on the metabolism of the deep-sea hyperthermophilic archaeon <i>Thermococcus</i> strain ES-1: characterization of a sulfur-regulated, non-heme iron alcohol dehydrogenase. <i>Journal of Bacteriology</i> , 1995, 177, 4748-4756.	2.2	64
45	Very High-Field EPR Study of Glycyl Radical Enzymes. <i>Journal of the American Chemical Society</i> , 2003, 125, 38-39.	13.7	63
46	Ab Initio Modeling of Ethylbenzene Dehydrogenase Reaction Mechanism. <i>Journal of the American Chemical Society</i> , 2010, 132, 6014-6024.	13.7	58
47	A two-component system involved in regulation of anaerobic toluene metabolism in <i>Thauera aromatica</i> . <i>FEMS Microbiology Letters</i> , 1998, 166, 35-41.	1.8	52
48	Ethylbenzene Dehydrogenase and Related Molybdenum Enzymes Involved in Oxygen-Independent Alkyl Chain Hydroxylation. <i>Journal of Molecular Microbiology and Biotechnology</i> , 2016, 26, 45-62.	1.0	50
49	Substrate specificities and electron paramagnetic resonance properties of benzylsuccinate synthases in anaerobic toluene and <i>m</i> -xylene metabolism. <i>Archives of Microbiology</i> , 2004, 181, 155-162.	2.2	49
50	ATP-Dependent Carboxylation of Acetophenone by a Novel Type of Carboxylase. <i>Journal of Bacteriology</i> , 2010, 192, 1387-1394.	2.2	48
51	Structure and Function of Benzylsuccinate Synthase and Related Fumarate-Adding Glycyl Radical Enzymes. <i>Journal of Molecular Microbiology and Biotechnology</i> , 2016, 26, 29-44.	1.0	45
52	Mutagenesis of <i>selC</i> , the gene for the selenocysteine-inserting tRNA-species in <i>E. coli</i> : effects on <i>in vivo</i> function. <i>Nucleic Acids Research</i> , 1990, 18, 6761-6766.	14.5	44
53	Operon structure and expression of the genes for benzylsuccinate synthase in <i>Thauera aromatica</i> strain K172. <i>Archives of Microbiology</i> , 2002, 177, 132-138.	2.2	44
54	Compatible Solute Synthesis and Import by the Moderate Halophile <i>Spiribacter salinus</i> : Physiology and Genomics. <i>Frontiers in Microbiology</i> , 2018, 9, 108.	3.5	44

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55	( R )-Benzylsuccinyl-CoA dehydrogenase of <i>Thauera aromatica</i> , an enzyme of the anaerobic toluene catabolic pathway. <i>Archives of Microbiology</i> , 2002, 178, 517-524.	2.2	43
56	Feeding on compatible solutes: A substrate-induced pathway for uptake and catabolism of ectoines and its genetic control by <i>EnuR</i> . <i>Environmental Microbiology</i> , 2017, 19, 926-946.	3.8	41
57	Anaerobic Metabolism of Indoleacetate. <i>Journal of Bacteriology</i> , 2012, 194, 2894-2903.	2.2	39
58	Acetone and Butanone Metabolism of the Denitrifying Bacterium " <i>Aromatoleum aromaticum</i> " Demonstrates Novel Biochemical Properties of an ATP-Dependent Aliphatic Ketone Carboxylase. <i>Journal of Bacteriology</i> , 2012, 194, 131-141.	2.2	39
59	Occurrence and functional compatibility within Enterobacteriaceae of a tRNA species which inserts selenocysteine into protein. <i>Nucleic Acids Research</i> , 1989, 17, 2529-2540.	14.5	36
60	Co-metabolic conversion of toluene in anaerobic <i>n</i> -alkane-degrading bacteria. <i>Environmental Microbiology</i> , 2011, 13, 2576-2586.	3.8	36
61	Mechanistic basis for the enantioselectivity of the anaerobic hydroxylation of alkylaromatic compounds by ethylbenzene dehydrogenase. <i>Journal of Inorganic Biochemistry</i> , 2014, 139, 9-20.	3.5	36
62	Anaerobic Biodegradation of Hydrocarbons Including Methane. , 2013, , 605-634.		35
63	Simultaneous Involvement of a Tungsten-Containing Aldehyde:Ferredoxin Oxidoreductase and a Phenylacetaldehyde Dehydrogenase in Anaerobic Phenylalanine Metabolism. <i>Journal of Bacteriology</i> , 2014, 196, 483-492.	2.2	31
64	Asymmetric reduction of ketones and $\beta$ -keto esters by (S)-1-phenylethanol dehydrogenase from denitrifying bacterium <i>Aromatoleum aromaticum</i> . <i>Applied Microbiology and Biotechnology</i> , 2015, 99, 5055-5069.	3.6	31
65	Illuminating the catalytic core of ectoine synthase through structural and biochemical analysis. <i>Scientific Reports</i> , 2019, 9, 364.	3.3	30
66	Biochemistry and Crystal Structure of Ectoine Synthase: A Metal-Containing Member of the Cupin Superfamily. <i>PLoS ONE</i> , 2016, 11, e0151285.	2.5	30
67	Tungstoenzymes: Occurrence, Catalytic Diversity and Cofactor Synthesis. <i>Inorganics</i> , 2020, 8, 44.	2.7	29
68	Genes coding for the selenocysteine-inserting tRNA species from <i>Desulfomicrobium baculatum</i> and <i>Clostridium thermoaceticum</i> : structural and evolutionary implications. <i>Journal of Bacteriology</i> , 1994, 176, 1268-1274.	2.2	27
69	Transcriptional regulation of ectoine catabolism in response to multiple metabolic and environmental cues. <i>Environmental Microbiology</i> , 2017, 19, 4599-4619.	3.8	25
70	Substrate and Inhibitor Spectra of Ethylbenzene Dehydrogenase: Perspectives on Application Potential and Catalytic Mechanism. <i>Applied and Environmental Microbiology</i> , 2012, 78, 6475-6482.	3.1	24
71	Quantum chemical modelling of the C-H cleavage mechanism in oxidation of ethylbenzene and its derivatives by ethylbenzene dehydrogenase. <i>Journal of Molecular Catalysis A</i> , 2008, 286, 128-136.	4.8	23
72	Quantum chemical modeling studies of ethylbenzene dehydrogenase activity. <i>International Journal of Quantum Chemistry</i> , 2012, 112, 1990-1999.	2.0	23

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73	Structure of the acetophenone carboxylase core complex: prototype of a new class of ATP-dependent carboxylases/hydrolases. <i>Scientific Reports</i> , 2017, 7, 39674.	3.3	23
74	Evidence for Benzylsuccinate Synthase Subtypes Obtained by Using Stable Isotope Tools. <i>Journal of Bacteriology</i> , 2013, 195, 4660-4667.	2.2	21
75	Interaction of the <i>Escherichia coli</i> fdhF mRNA hairpin promoting selenocysteine incorporation with the ribosome. <i>Nucleic Acids Research</i> , 1996, 24, 3903-3910.	14.5	20
76	Identification of FeS clusters in the glycol-radical enzyme benzylsuccinate synthase via EPR and Mössbauer spectroscopy. <i>Journal of Biological Inorganic Chemistry</i> , 2012, 17, 49-56.	2.6	20
77	Characterization of an Aldehyde Oxidoreductase From the Mesophilic Bacterium <i>Aromatoleum aromaticum</i> EbN1, a Member of a New Subfamily of Tungsten-Containing Enzymes. <i>Frontiers in Microbiology</i> , 2019, 10, 71.	3.5	20
78	Modeling of the Reaction Mechanism of Enzymatic Radical C–C Coupling by Benzylsuccinate Synthase. <i>International Journal of Molecular Sciences</i> , 2016, 17, 514.	4.1	19
79	Biocatalytic Asymmetric Reduction of $\beta$ -Keto Esters to Access Optically Active $\beta$ -Aryl- $\beta$ -Butyrolactones. <i>Advanced Synthesis and Catalysis</i> , 2020, 362, 2012-2029.	4.3	18
80	Anaerobic bacterial metabolism of hydrocarbons. <i>FEMS Microbiology Reviews</i> , 1998, 22, 459-473.	8.6	18
81	A Fluorescent Bioreporter for Acetophenone and 1-Phenylethanol derived from a Specifically Induced Catabolic Operon. <i>Frontiers in Microbiology</i> , 2015, 6, 1561.	3.5	17
82	A rare polyglycine type II-like helix motif in naturally occurring proteins. <i>Proteins: Structure, Function and Bioinformatics</i> , 2017, 85, 2017-2023.	2.6	17
83	Electrocatalytic Hydrocarbon Hydroxylation by Ethylbenzene Dehydrogenase from <i>Aromatoleum aromaticum</i> . <i>Journal of Physical Chemistry B</i> , 2015, 119, 3456-3463.	2.6	16
84	Enzymes of anaerobic ethylbenzene and p-ethylphenol catabolism in <i>Aromatoleum aromaticum</i> <sup>TM</sup> : differentiation and differential induction. <i>Archives of Microbiology</i> , 2015, 197, 1051-1062.	2.2	16
85	An indoleacetate-CoA ligase and a phenylsuccinyl-CoA transferase involved in anaerobic metabolism of auxin. <i>Environmental Microbiology</i> , 2016, 18, 3120-3132.	3.8	15
86	Activation of Acetone and Other Simple Ketones in Anaerobic Bacteria. <i>Journal of Molecular Microbiology and Biotechnology</i> , 2016, 26, 152-164.	1.0	15
87	Structural and Functional Characterization of an Electron Transfer Flavoprotein Involved in Toluene Degradation in Strictly Anaerobic Bacteria. <i>Journal of Bacteriology</i> , 2019, 201, .	2.2	15
88	Suitability of the hydrocarbon-hydroxylating molybdenum-enzyme ethylbenzene dehydrogenase for industrial chiral alcohol production. <i>Journal of Biotechnology</i> , 2014, 192, 400-409.	3.8	14
89	Interspecies compatibility of selenoprotein biosynthesis in Enterobacteriaceae. <i>Archives of Microbiology</i> , 1991, 155, 221-228.	2.2	12
90	The reaction mechanism of chiral hydroxylation of <i>p</i> -OH and <i>p</i> -NH <sub>2</sub> substituted compounds by ethylbenzene dehydrogenase. <i>Canadian Journal of Chemistry</i> , 2013, 91, 775-786.	1.1	12

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91	Elucidating the Stereochemistry of Enzymatic Benzylsuccinate Synthesis with Chirally Labeled Toluene. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 11664-11667.	13.8	12
92	Adaptations to a Loss-of-Function Mutation in the Betaproteobacterium <i>Aromatoleum aromaticum</i> : Recruitment of Alternative Enzymes for Anaerobic Phenylalanine Degradation. <i>Journal of Bacteriology</i> , 2017, 199, .	2.2	11
93	Determinants for Substrate Recognition in the Glycyl Radical Enzyme Benzylsuccinate Synthase Revealed by Targeted Mutagenesis. <i>ACS Catalysis</i> , 2021, 11, 3361-3370.	11.2	10
94	Anaerobic Degradation of Hydrocarbons: Mechanisms of Hydrocarbon Activation in the Absence of Oxygen. , 2020, , 3-29.		10
95	Thauer M, Macy, Rech, Auling, Dorsch, Stackebrandt and Sly 1993, 139VP emend. Song, Young and Palleroni 1998, 893. , 0, , 907-913.		9
96	Tungsten Enzyme Using Hydrogen as an Electron Donor to Reduce Carboxylic Acids and NAD <sup>+</sup> . <i>ACS Catalysis</i> , 2022, 12, 8707-8717.	11.2	7
97	Two Different Quinohemoprotein Amine Dehydrogenases Initiate Anaerobic Degradation of Aromatic Amines in <i>Aromatoleum aromaticum</i> EbN1. <i>Journal of Bacteriology</i> , 2019, 201, .	2.2	5
98	Catabolic Pathways and Enzymes Involved in the Anaerobic Degradation of Monocyclic Aromatic Compounds. , 2020, , 85-133.		5
99	Comparison of different approaches to derive classical bonded force-field parameters for a transition metal cofactor: a case study for non-heme iron site of ectoine synthase. <i>Theoretical Chemistry Accounts</i> , 2021, 140, 1.	1.4	5
100	Anaerobic Degradation of Hydrocarbons: Mechanisms of Hydrocarbon Activation in the Absence of Oxygen. , 2018, , 1-27.		3
101	<i>Finis tolueni</i> : a new type of thiolase with an integrated Zn <sup>2+</sup> finger subunit catalyzes the final step of anaerobic toluene metabolism. <i>FEBS Journal</i> , 2022, 289, 5599-5616.	4.7	3
102	Inactive pseudoenzyme subunits in heterotetrameric BbsCD, a novel short-chain alcohol dehydrogenase involved in anaerobic toluene degradation. <i>FEBS Journal</i> , 2022, 289, 1023-1042.	4.7	2
103	Catabolic Pathways and Enzymes Involved in the Anaerobic Degradation of Monocyclic Aromatic Compounds. , 2018, , 1-50.		2
104	Benzylmalonyl-CoA dehydrogenase, an enzyme involved in bacterial auxin degradation. <i>Archives of Microbiology</i> , 2021, 203, 4149-4159.	2.2	1
105	Characterisation of the redox centers of ethylbenzene dehydrogenase. <i>Journal of Biological Inorganic Chemistry</i> , 2021, , 1.	2.6	1
106	Stereochemischer Verlauf der enzymatischen Synthese von Benzylsuccinat mit chiral markiertem Toluol. <i>Angewandte Chemie</i> , 2016, 128, 11836-11839.	2.0	0
107	From Nonsense to Sense: UGA Encodes Selenocysteine in Formate Dehydrogenase and Other Selenoproteins. , 1990, , 61-68.		0