Gerrit J Poelarends

List of Publications by Year
in descending order

92 papers	2,454 citations	28 h-index (186265)	43 g-index (254184)
96 all docs	96 docs citations	96 times ranked	1883 citing authors

#	Article	IF	Citations
1	Recent developments in enzyme promiscuity for carbonâ€“carbon bond-forming reactions. Current Opinion in Chemical Biology, 2015, 25, 115-123.	6.1	105
2	Degradation of 1,3-Dichloropropene by <i>Pseudomonas cichorii</i> 170. Applied and Environmental Microbiology, 1998, 64, 2931-2936.	3.1	97
3	Bridging between Organocatalysis and Biocatalysis: Asymmetric Addition of Acetaldehyde to Î²â€Nitrostyrenes Catalyzed by a Promiscuous Prolineâ€Based Tautomerase. Angewandte Chemie - International Edition, 2012, 51, 1240-1243.	13.8	85
4	PA0305 of Pseudomonas aeruginosa is a quorum quenching acylhomoserine lactone acylase belonging to the Ntn hydrolase superfamily. Microbiology (United Kingdom), 2011, 157, 2042-2055.	1.8	84
5	Degradation of 1,2-Dibromoethane by <i>Mycobacterium</i> sp. Strain GP1. Journal of Bacteriology, 1999, 181, 2050-2058.	2.2	83
6	Using mutability landscapes of a promiscuous tautomerase to guide the engineering of enantioselective Michaelases. Nature Communications, 2016, 7, 10911.	12.8	80
7	Engineering methylaspartate ammonia lyase for the asymmetric synthesis of unnatural amino acids. Nature Chemistry, 2012, 4, 478-484.	13.6	77
8	Current state and future perspectives of engineered and artificial peroxygenases for the oxyfunctionalization of organic molecules. Nature Catalysis, 2020, 3, 690-702.	34.4	70
9	Biocatalytic Asymmetric Michael Additions of Nitromethane to Î±,Î²-Unsaturated Aldehydes via Enzyme-bound Iminium Ion Intermediates. ACS Catalysis, 2019, 9, 4369-4373.	11.2	58
10	Biocatalytic Enantioselective Synthesis of <i>N</i>â€Substituted Aspartic Acids by Aspartate Ammonia Lyase. Chemistry - A European Journal, 2008, 14, 10094-10100.	3.3	56
11	Biocatalytic Michaelâ€Type Additions of Acetaldehyde to Nitroolefins with the Prolineâ€Based Enzyme 4â€Oxalocrotonate Tautomerase Yielding Enantioenriched Î³â€Nitroaldehydes. Chemistry - A European Journal, 2013, 19, 14407-14410.	3.3	53
12	Enantioselective Synthesis of Pharmaceutically Active Î³-Aminobutyric Acids Using a Tailor-Made Artificial Michaelase in One-Pot Cascade Reactions. ACS Catalysis, 2019, 9, 1503-1513.	11.2	53
13	Aspartase/Fumarase Superfamily: A Common Catalytic Strategy Involving General Base-Catalyzed Formation of a Highly Stabilized aci-Carboxylate Intermediate. Biochemistry, 2012, 51, 4237-4243.	2.5	46
14	The Generation and Exploitation of Protein Mutability Landscapes for Enzyme Engineering. ChemBioChem, 2016, 17, 1792-1799.	2.6	46
15	Catalytic Mechanisms and Biocatalytic Applications of Aspartate and Methylaspartate Ammonia Lyases. ACS Chemical Biology, 2012, 7, 1618-1628.	3.4	44
16	Evolution of enzymatic activity in the tautomerase superfamily: mechanistic and structural studies of the 1,3-dichloropropene catabolic enzymes. Bioorganic Chemistry, 2004, 32, 376-392.	4.1	43
17	Systematic Screening for Catalytic Promiscuity in 4â€Oxalocrotonate Tautomerase: Enamine Formation and Aldolase Activity. ChemBioChem, 2011, 12, 602-609.	2.6	43
18	Cloning, Expression, and Characterization of acis-3-Chloroacrylic Acid Dehalogenase:Â Insights into the Mechanistic, Structural, and Evolutionary Relationship between Isomer-Specific 3-Chloroacrylic Acid Dehalogenasesâ€. Biochemistry, 2004, 43, 759-772.	2.5	42

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19	Chemoenzymatic asymmetric synthesis of the metallo-Î²-lactamase inhibitor aspergillomarasmine A and related aminocarboxylic acids. Nature Catalysis, 2018, 1, 186-191.	34.4	42
20	Structural Basis for the Catalytic Mechanism of Aspartate Ammonia Lyase. Biochemistry, 2011, 50, 6053-6062.	2.5	41
21	Small-molecule inhibitors of macrophage migration inhibitory factor (MIF) as an emerging class of therapeutics for immune disorders. Drug Discovery Today, 2018, 23, 1910-1918.	6.4	41
22	<scp>SLC</scp> 1A3 contributes to Lâ€asparaginase resistance in solid tumors. EMBO Journal, 2019, 38, e102147.	7.8	41
23	Mechanistic Characterization of a Bacterial Malonate Semialdehyde Decarboxylase. Journal of Biological Chemistry, 2003, 278, 48674-48683.	3.4	40
24	Promiscuous Catalysis of Asymmetric Michaelâ€Type Additions of Linear Aldehydes to Î²â€Nitrostyrene by the Prolineâ€Based Enzyme 4â€Oxalocrotonate Tautomerase. ChemBioChem, 2013, 14, 191-194.	2.6	40
25	Recent Advances in the Study of Enzyme Promiscuity in the Tautomerase Superfamily. ChemBioChem, 2013, 14, 917-926.	2.6	32
26	Enantiocomplementary Epoxidation Reactions Catalyzed by an Engineered Cofactorâ€Independent Nonâ€natural Peroxygenase. Angewandte Chemie - International Edition, 2020, 59, 10374-10378.	13.8	31
27	The Hydratase Activity of Malonate Semialdehyde Decarboxylase:Â Mechanistic and Evolutionary Implications. Journal of the American Chemical Society, 2004, 126, 15658-15659.	13.7	29
28	Structural Aspects of Photopharmacology: Insight into the Binding of Photoswitchable and Photocaged Inhibitors to the Glutamate Transporter Homologue. Journal of the American Chemical Society, 2021, 143, 1513-1520.	13.7	29
29	Macrophage migration inhibitory factor family proteins are multitasking cytokines in tissue injury. Cellular and Molecular Life Sciences, 2022, 79, 105.	5.4	29
30	Characterization of IS2112, a new insertion sequence from Rhodococcus, and its relationship with mobile elements belonging to the IS110 family. Microbiology (United Kingdom), 1999, 145, 561-568.	1.8	27
31	Biocatalytic Asymmetric Synthesis of <i>N</i>-Aryl-Functionalized Amino Acids and Substituted Pyrazolidinones. ACS Catalysis, 2019, 9, 7292-7299.	11.2	27
32	Evolution of Enzymatic Activity in the Tautomerase Superfamily:Â Mechanistic and Structural Consequences of the L8R Mutation in 4-Oxalocrotonate Tautomeraseâ€,â€¡. Biochemistry, 2006, 45, 7700-7708.	2.5	26
33	Evidence for the Formation of an Enamine Species during Aldol and Michaelâ€type Addition Reactions Promiscuously Catalyzed by 4â€Oxalocrotonate Tautomerase. ChemBioChem, 2015, 16, 738-741.	2.6	26
34	The role of MIF in chronic lung diseases: looking beyond inflammation. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2020, 318, L1183-L1197.	2.9	26
35	Alteration of the Diastereoselectivity of 3â€Methylaspartate Ammonia Lyase by Using Structureâ€Based Mutagenesis. ChemBioChem, 2009, 10, 2236-2245.	2.6	24
36	Enhancement of the Promiscuous Aldolase and Dehydration Activities of 4â€Oxalocrotonate Tautomerase by Protein Engineering. ChemBioChem, 2012, 13, 1274-1277.	2.6	24

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37	Structural Basis for the Catalytic Mechanism of Ethylenediamine-<i>N</i>,<i>N</i>â€²-disuccinic Acid Lyase, a Carbonâ€“Nitrogen Bond-Forming Enzyme with a Broad Substrate Scope. Biochemistry, 2018, 57, 3752-3763.	2.5	24
38	D-dopachrome tautomerase contributes to lung epithelial repair via atypical chemokine receptor 3-dependent Akt signaling. EBioMedicine, 2021, 68, 103412.	6.1	22
39	Proteolysis Targeting Chimera (PROTAC) for Macrophage Migration Inhibitory Factor (MIF) Has Antiâ€Proliferative Activity in Lung Cancer Cells. Angewandte Chemie - International Edition, 2021, 60, 17514-17521.	13.8	22
40	Enantioselective Synthesis of Nâ€Substituted Aspartic Acids Using an Engineered Variant of Methylaspartate Ammonia Lyase. ChemCatChem, 2013, 5, 1325-1327.	3.7	21
41	Structural and Functional Characterization of a Macrophage Migration Inhibitory Factor Homologue from the Marine Cyanobacterium <i>Prochlorococcus marinus</i>,. Biochemistry, 2010, 49, 7572-7581.	2.5	20
42	Stereospecific Alkylation ofcis-3-Chloroacrylic Acid Dehalogenase by (R)-Oxirane-2-carboxylate:Â Analysis and Mechanistic Implicationsâ€. Biochemistry, 2004, 43, 7187-7196.	2.5	19
43	Characterization of Cg10062 from Corynebacterium glutamicum: Implications for the Evolution of cis-3-Chloroacrylic Acid Dehalogenase Activity in the Tautomerase Superfamily. Biochemistry, 2008, 47, 8139-8147.	2.5	19
44	Phenylpyruvate Tautomerase Activity of trans-3-Chloroacrylic Acid Dehalogenase:â€‰ Evidence for an Enol Intermediate in the Dehalogenase Reaction?. Biochemistry, 2007, 46, 9596-9604.	2.5	18
45	Chemoenzymatic Synthesis and Pharmacological Characterization of Functionalized Aspartate Analogues As Novel Excitatory Amino Acid Transporter Inhibitors. Journal of Medicinal Chemistry, 2018, 61, 7741-7753.	6.4	18
46	Engineered Câ€“N Lyase: Enantioselective Synthesis of Chiral Synthons for Artificial Dipeptide Sweeteners. Angewandte Chemie - International Edition, 2020, 59, 429-435.	13.8	18
47	Enantiocomplementary Epoxidation Reactions Catalyzed by an Engineered Cofactorâ€Independent Nonâ€natural Peroxygenase. Angewandte Chemie, 2020, 132, 10460-10464.	2.0	18
48	Biocatalytic Asymmetric Cyclopropanations via Enzymeâ€Bound Iminium Ion Intermediates. Angewandte Chemie - International Edition, 2021, 60, 24059-24063.	13.8	18
49	Inactivation of Malonate Semialdehyde Decarboxylase by 3-Halopropiolates:â€‰ Evidence for Hydratase Activity. Biochemistry, 2005, 44, 9375-9381.	2.5	17
50	Glutamate Transporter Inhibitors with Photoâ€Controlled Activity. Advanced Therapeutics, 2018, 1, 1800028.	3.2	17
51	7-Hydroxycoumarins Are Affinity-Based Fluorescent Probes for Competitive Binding Studies of Macrophage Migration Inhibitory Factor. Journal of Medicinal Chemistry, 2020, 63, 11920-11933.	6.4	17
52	Enantioselective Aldol Addition of Acetaldehyde to Aromatic Aldehydes Catalyzed by Proline-Based Carboligases. ACS Catalysis, 2020, 10, 2522-2527.	11.2	17
53	Gene Fusion and Directed Evolution to Break Structural Symmetry and Boost Catalysis by an Oligomeric Câˆ’C Bondâ€Forming Enzyme. Angewandte Chemie - International Edition, 2022, 61, .	13.8	17
54	Unlocking New Reactivities in Enzymes by Iminium Catalysis. Angewandte Chemie - International Edition, 2022, 61, .	13.8	17

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55	Aminocarboxylic acids related to aspergillomarasmine A (AMA) and ethylenediamine-<i>N</i>,<i>N</i>â€²-disuccinic acid (EDDS) are strong zinc-binders and inhibitors of the metallo-beta-lactamase NDM-1. Chemical Communications, 2020, 56, 3047-3049.	4.1	16
56	Mutations Closer to the Active Site Improve the Promiscuous Aldolase Activity of 4â€Oxalocrotonate Tautomerase More Effectively than Distant Mutations. ChemBioChem, 2016, 17, 1225-1228.	2.6	15
57	Stereochemical Control of Enzymatic Carbonâ€“Carbon Bondâ€Forming Michaelâ€Type Additions by â€œSubstrate Engineeringâ€. European Journal of Organic Chemistry, 2016, 2016, 5350-5354.	2.4	15
58	Biocatalytic Enantioselective Hydroaminations for Production of <i>N</i>â€Cycloalkylâ€Substituted Lâ€Aspartic Acids Using Two Câˆ’N Lyases. Advanced Synthesis and Catalysis, 2019, 361, 2433-2437.	4.3	15
59	An Esterase with Superior Activity and Enantioselectivity towards 1,2â€<i>O</i>â€Isopropylideneglycerol Esters Obtained by Protein Design. Advanced Synthesis and Catalysis, 2012, 354, 3009-3015.	4.3	14
60	Inter- and intramolecular aldol reactions promiscuously catalyzed by a proline-based tautomerase. Organic and Biomolecular Chemistry, 2017, 15, 2809-2816.	2.8	14
61	Unlocking Asymmetric Michael Additions in an Archetypical Class I Aldolase by Directed Evolution. ACS Catalysis, 2021, 11, 13236-13243.	11.2	14
62	Thieno[2,3-<i>d</i>]pyrimidine-2,4(1<i>H</i>,3<i>H</i>)-dione Derivative Inhibits <scp>d</scp>-Dopachrome Tautomerase Activity and Suppresses the Proliferation of Non-Small Cell Lung Cancer Cells. Journal of Medicinal Chemistry, 2022, 65, 2059-2077.	6.4	14
63	Structure-activity relationships for binding of 4-substituted triazole-phenols to macrophage migration inhibitory factor (MIF). European Journal of Medicinal Chemistry, 2020, 186, 111849.	5.5	13
64	TEMPOâ€Mediated Electrochemical Nâ€demethylation of Opiate Alkaloids. ChemElectroChem, 2021, 8, 2590-2596.	3.4	13
65	An Unexpected Promiscuous Activity of 4â€Oxalocrotonate Tautomerase: The <i>cis</i>â€“<i>trans</i> Isomerisation of Nitrostyrene. ChemBioChem, 2012, 13, 1869-1873.	2.6	11
66	Kinetic Resolution and Stereoselective Synthesis of 3â€Substituted Aspartic Acids by Using Engineered Methylaspartate Ammonia Lyases. Chemistry - A European Journal, 2013, 19, 11148-11152.	3.3	11
67	Chemoenzymatic Synthesis of <i>ortho</i>â€, <i>meta</i>â€, and <i>para</i>â€Substituted Derivatives of <scp>L</scp>â€<i>threo</i>â€3â€Benzyloxyaspartate, An Important Glutamate Transporter Blocker. ChemCatChem, 2015, 7, 1931-1934.	3.7	11
68	Rapid chemoenzymatic route to glutamate transporter inhibitor<scp>l</scp>-TFB-TBOA and related amino acids. Organic and Biomolecular Chemistry, 2017, 15, 2341-2344.	2.8	10
69	Biocatalytic Asymmetric Cyclopropanations via Enzymeâ€Bound Iminium Ion Intermediates. Angewandte Chemie, 2021, 133, 24261-24265.	2.0	10
70	Engineering a Promiscuous Tautomerase into a More Efficient Aldolase for Selfâ€Condensations of Linear Aliphatic Aldehydes. ChemBioChem, 2017, 18, 1435-1441.	2.6	9
71	Modular Enzymatic Cascade Synthesis of Vitamin B₅ and Its Derivatives. Chemistry - A European Journal, 2018, 24, 17434-17438.	3.3	9
72	Gene Fusion and Directed Evolution to Break Structural Symmetry and Boost Catalysis by an Oligomeric Câˆ’C Bondâ€Forming Enzyme. Angewandte Chemie, 2022, 134, .	2.0	9

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73	Discovery of chromenes as inhibitors of macrophage migration inhibitory factor. Bioorganic and Medicinal Chemistry, 2018, 26, 999-1005.	3.0	8
74	Tuning Enzyme Activity for Nonaqueous Solvents: Engineering an Enantioselective â€œMichaelaseâ€• for Catalysis in High Concentrations of Ethanol. ChemBioChem, 2020, 21, 1499-1504.	2.6	8
75	Genetic regulation of gene expression of MIF family members in lung tissue. Scientific Reports, 2020, 10, 16980.	3.3	8
76	Recent Applications of Carbonâ€Nitrogen Lyases in Asymmetric Synthesis of Noncanonical Amino Acids and Heterocyclic Compounds. ChemBioChem, 2020, 21, 2733-2742.	2.6	8
77	Selective Colorimetric â€œTurn-Onâ€• Probe for Efficient Engineering of Iminium Biocatalysis. ACS Omega, 2020, 5, 2397-2405.	3.5	8
78	High yield production of human invariant chain CD74 constructs fused to solubility-enhancing peptides and characterization of their MIF-binding capacities. Protein Expression and Purification, 2018, 148, 46-53.	1.3	6
79	Using Mutability Landscapes To Guide Enzyme Thermostabilization. ChemBioChem, 2021, 22, 170-175.	2.6	6
80	Sustainability in drug discovery. Medicine in Drug Discovery, 2021, 12, 100107.	4.5	5
81	A mutational analysis of active site residues in <i>trans</i>â€3â€chloroacrylic acid dehalogenase. FEBS Letters, 2013, 587, 2842-2850.	2.8	4
82	In Situ Acetaldehyde Synthesis for Carboligation Reactions. ChemBioChem, 2020, 21, 1505-1509.	2.6	4
83	4â€Iodopyrimidine Labeling Reveals Nuclear Translocation and Nuclease Activity for Both MIF and MIF2**. Chemistry - A European Journal, 2022, 28, .	3.3	4
84	Unlocking New Reactivities in Enzymes by Iminium Catalysis. Angewandte Chemie, 2022, 134, .	2.0	4
85	Demethionylation of Proâ€1 variants of 4â€oxalocrotonate tautomerase in <i>Escherichia coli</i> by coâ€expression with an engineered methionine aminopeptidase. FEBS Open Bio, 2014, 4, 651-658.	2.3	3
86	Engineered Câ€"N Lyase: Enantioselective Synthesis of Chiral Synthons for Artificial Dipeptide Sweeteners. Angewandte Chemie, 2020, 132, 437-443.	2.0	3
87	Proteolysis Targeting Chimera (PROTAC) for Macrophage Migration Inhibitory Factor (MIF) Has Antiâ€Proliferative Activity in Lung Cancer Cells. Angewandte Chemie, 2021, 133, 17655-17662.	2.0	3
88	The broad amine scope of pantothenate synthetase enables the synthesis of pharmaceutically relevant amides. Organic and Biomolecular Chemistry, 2021, 19, 4515-4519.	2.8	3
89	Chemoâ€• and Enantioselective Photoenzymatic Ketone Reductions Using a Promiscuous Flavinâ€dependent Nitroreductase. ChemCatChem, 2022, 14, .	3.7	3
90	Biocatalytic enantioselective hydroaminations enabling synthesis of <i>N</i>-arylalkyl-substituted <scp>l</scp>-aspartic acids. Organic and Biomolecular Chemistry, 2021, 19, 6407-6411.	2.8	2

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91	Enantiocomplementary Michael Additions of Acetaldehyde to Aliphatic Nitroalkenes Catalyzed by Prolineâ€Based Carboligases. ChemBioChem, 2022, , .	2.6	2
92	RÃ¼cktitelbild: Gene Fusion and Directed Evolution to Break Structural Symmetry and Boost Catalysis by an Oligomeric Câ^'C Bondâ€Forming Enzyme (Angew. Chem. 8/2022). Angewandte Chemie, 2022, 134, .	2.0	0