Karl Forchhammer

List of Publications by Year
in descending order

118 papers	5,535 citations	61984 43 h-index	98798 67 g-index
134 all docs	134 docs citations	134 times ranked	3577 citing authors

#	Article	IF	Citations
1	New views on PII signaling: from nitrogen sensing to global metabolic control. Trends in Microbiology, 2022, 30, 722-735.	7.7	38
2	Structure of a thylakoid-anchored contractile injection system in multicellular cyanobacteria. Nature Microbiology, 2022, 7, 386-396.	13.3	23
3	PotN represents a novel energyâ€state sensing PII subfamily, occurring in firmicutes. FEBS Journal, 2022, 289, 5305-5321.	4.7	2
4	Changes in Envelope Structure and Cellâ€“Cell Communication during Akinete Differentiation and Germination in Filamentous Cyanobacterium Trichormus variabilis ATCC 29413. Life, 2022, 12, 429.	2.4	1
5	The impact of the cyanobacterial carbonâ€regulator protein SbtBÂand of the second messengers cAMP and câ€diâ€AMP on CO₂â€dependent gene expression. New Phytologist, 2022, 234, 1801-1816.	7.3	15
6	Hybrid Chemoenzymatic Synthesis of C7â€Sugars for Molecular Evidence of in vivo Shikimate Pathway Inhibition. ChemBioChem, 2022, , .	2.6	3
7	Regulatory phosphorylation event of phosphoglucomutase 1 tunes its activity to regulate glycogen metabolism. FEBS Journal, 2022, 289, 6005-6020.	4.7	6
8	Functional and structural characterization of PIIâ€like protein CutA does not support involvement in heavy metal tolerance and hints at a smallâ€molecule carrying/signaling role. FEBS Journal, 2021, 288, 1142-1162.	4.7	14
9	Bacterial Predation on Cyanobacteria. Microbial Physiology, 2021, 31, 99-108.	2.4	21
10	Kinetic Analysis of a Protein-protein Complex to Determine its Dissociation Constant (KD) and the Effective Concentration (EC50) of an Interplaying Effector Molecule Using Bio-layer Interferometry. Bio-protocol, 2021, 11, e4152.	0.4	10
11	Magnetic Bead-Based Immunoassay Allows Rapid, Inexpensive, and Quantitative Detection of Human SARS-CoV-2 Antibodies. ACS Sensors, 2021, 6, 703-708.	7.8	61
12	A bioactive molecule made by unusual salvage of radical SAM enzyme byproduct 5-deoxyadenosine blurs the boundary of primary and secondary metabolism. Journal of Biological Chemistry, 2021, 296, 100621.	3.4	7
13	Polyhydroxybutyrate: A Useful Product of Chlorotic Cyanobacteria. Microbial Physiology, 2021, 31, 67-77.	2.4	18
14	Recovery of Unicellular Cyanobacteria from Nitrogen Chlorosis: A Model for Resuscitation of Dormant Bacteria. Microbial Physiology, 2021, 31, 78-87.	2.4	20
15	The novel P _{II} -interactor PirC identifies phosphoglycerate mutase as key control point of carbon storage metabolism in cyanobacteria. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	52
16	The essential role of sodium bioenergetics and ATP homeostasis in the developmental transitions of a cyanobacterium. Current Biology, 2021, 31, 1606-1615.e2.	3.9	12
17	The Novel P _{II} -Interacting Protein PirA Controls Flux into the Cyanobacterial Ornithine-Ammonia Cycle. MBio, 2021, 12, .	4.1	17
18	Split NanoLuc technology allows quantitation of interactions between PII protein and its receptors with unprecedented sensitivity and reveals transient interactions. Scientific Reports, 2021, 11, 12535.	3.3	16

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19	5-Deoxyadenosine Metabolism: More than â€œWaste Disposalâ€• Microbial Physiology, 2021, 31, 248-259.	2.4	3
20	In vivo Inhibition of the 3-Dehydroquinate Synthase by 7-Deoxysedoheptulose Depends on Promiscuous Uptake by Sugar Transporters in Cyanobacteria. Frontiers in Microbiology, 2021, 12, 692986.	3.5	5
21	Editorial for Article Collection on â€œBacterial Survival Strategiesâ€• Microbial Physiology, 2021, 31, 1-3.	2.4	0
22	Strong coupling between an optical microcavity and photosystems in single living cyanobacteria. Journal of Biophotonics, 2021, , e202100136.	2.3	3
23	Arabidopsis PII Proteins Form Characteristic Foci in Chloroplasts Indicating Novel Properties in Protein Interaction and Degradation. International Journal of Molecular Sciences, 2021, 22, 12666.	4.1	6
24	Diurnal metabolic control in cyanobacteria requires perception of second messenger signaling molecule c-di-AMP by the carbon control protein SbtB. Science Advances, 2021, 7, eabk0568.	10.3	26
25	Carbon/nitrogen homeostasis control in cyanobacteria. FEMS Microbiology Reviews, 2020, 44, 33-53.	8.6	130
26	Interaction of Nâ€•acetylâ€•l â€•glutamate kinase with the PII signal transducer in the nonâ€•photosynthetic alga Polytomella parva : Coâ€•evolution towards a heteroâ€•oligomeric enzyme. FEBS Journal, 2020, 287, 465-482.	4.7	29
27	The Protein-Protein Interaction Network Reveals a Novel Role of the Signal Transduction Protein PII in the Control of c-di-GMP Homeostasis in Azospirillum brasilense. MSystems, 2020, 5, .	3.8	8
28	Complete Genome Sequence of Lactobacillus hilgardii LMG 7934, Carrying the Gene Encoding for the Novel PII-Like Protein PotN. Current Microbiology, 2020, 77, 3538-3545.	2.2	9
29	Maximizing PHB content in Synechocystis sp. PCC 6803: a new metabolic engineering strategy based on the regulator PirC. Microbial Cell Factories, 2020, 19, 231.	4.0	61
30	The Slr0058 Protein From Synechocystis sp. PCC 6803 Is a Novel Regulatory Protein Involved in PHB Granule Formation. Frontiers in Microbiology, 2020, 11, 809.	3.5	14
31	The NADP-dependent malic enzyme MaeB is a central metabolic hub controlled by the acetyl-CoA to CoASH ratio. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2020, 1868, 140462.	2.3	4
32	NAD+ biosynthesis in bacteria is controlled by global carbon/nitrogen levels via PII signaling. Journal of Biological Chemistry, 2020, 295, 6165-6176.	3.4	12
33	From cyanobacteria to Archaeplastida: new evolutionary insights into PII signalling in the plant kingdom. New Phytologist, 2020, 227, 722-731.	7.3	42
34	Glycolytic Shunts Replenish the Calvinâ€“Bensonâ€“Bassham Cycle as Anaplerotic Reactions in Cyanobacteria. Molecular Plant, 2020, 13, 471-482.	8.3	53
35	Phosphoenolpyruvate carboxylase from the cyanobacterium Synechocystis sp. PCC 6803 is under global metabolic control by P_{II} signaling. Molecular Microbiology, 2020, 114, 292-307.	2.5	30
36	On the Role and Production of Polyhydroxybutyrate (PHB) in the Cyanobacterium Synechocystis sp. PCC 6803. Life, 2020, 10, 47.	2.4	39

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37	Construction of Antisense RNA-mediated Gene Knock-down Strains in the Cyanobacterium Anabaena sp. PCC 7120. Bio-protocol, 2020, 10, e3528.	0.4	1
38	Structure and Function of a Bacterial Gap Junction Analog. Cell, 2019, 178, 374-384.e15.	28.9	78
39	Effects of arginine on Polytomella parva growth, PII protein levels and lipid body formation. Planta, 2019, 250, 1379-1385.	3.2	3
40	Cyanobacterial antimetabolite 7-deoxy-sedoheptulose blocks the shikimate pathway to inhibit the growth of prototrophic organisms. Nature Communications, 2019, 10, 545.	12.8	53
41	The Signal Transduction Protein PII Controls Ammonium, Nitrate and Urea Uptake in Cyanobacteria. Frontiers in Microbiology, 2019, 10, 1428.	3.5	59
42	A novel Ca2+-binding protein influences photosynthetic electron transport in Anabaena sp. PCC 7120. Biochimica Et Biophysica Acta - Bioenergetics, 2019, 1860, 519-532.	1.0	12
43	PHB is Produced from Glycogen Turn-over during Nitrogen Starvation in Synechocystis sp. PCC 6803. International Journal of Molecular Sciences, 2019, 20, 1942.	4.1	88
44	A nanopore array in the septal peptidoglycan hosts gated septal junctions for cell-cell communication in multicellular cyanobacteria. International Journal of Medical Microbiology, 2019, 309, 151303.	3.6	15
45	Tuning the in vitro sensing and signaling properties of cyanobacterial PII protein by mutation of key residues. Scientific Reports, 2019, 9, 18985.	3.3	15
46	Nitrogen chlorosis in unicellular cyanobacteria â€“ a developmental program for surviving nitrogen deprivation. Environmental Microbiology, 2019, 21, 1173-1184.	3.8	62
47	How glyphosate and its associated acidity affect early development in zebrafish (Danio rerio). PeerJ, 2019, 7, e7094.	2.0	28
48	LytM factor Alr3353 affects filament morphology and cellâ€“cell communication in the multicellular cyanobacterium Anabaena sp. PCC 7120. Molecular Microbiology, 2018, 108, 187-203.	2.5	22
49	The PII signaling protein from red algae represents an evolutionary link between cyanobacterial and Chloroplastida PII proteins. Scientific Reports, 2018, 8, 790.	3.3	27
50	A Specific Glycogen Mobilization Strategy Enables Rapid Awakening of Dormant Cyanobacteria from Chlorosis. Plant Physiology, 2018, 177, 594-603.	4.8	57
51	P _{II} -like signaling protein SbtB links cAMP sensing with cyanobacterial inorganic carbon response. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4861-E4869.	7.1	65
52	Cyanophycin Synthesis Optimizes Nitrogen Utilization in the Unicellular Cyanobacterium Synechocystis sp. Strain PCC 6803. Applied and Environmental Microbiology, 2018, 84, .	3.1	58
53	Chlorosis as a Developmental Program in Cyanobacteria: The Proteomic Fundament for Survival and Awakening. Molecular and Cellular Proteomics, 2018, 17, 1650-1669.	3.8	47
54	Down-Regulation of the Alternative Sigma Factor SigJ Confers a Photoprotective Phenotype toAnabaenaPCC 7120. Plant and Cell Physiology, 2017, 58, pcw188.	3.1	22

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55	Glycogen, a major player for bacterial survival and awakening from dormancy. Future Microbiology, 2017, 12, 101-104.	2.0	38
56	Glutamine synthetase stabilizes the binding of GlnR to nitrogen fixation gene operators. FEBS Journal, 2017, 284, 903-918.	4.7	15
57	PII Protein-Derived FRET Sensors for Quantification and Live-Cell Imaging of 2-Oxoglutarate. Scientific Reports, 2017, 7, 1437.	3.3	29
58	Non-classical Protein Excretion Is Boosted by PSMÎ±-Induced Cell Leakage. Cell Reports, 2017, 20, 1278-1286.	6.4	68
59	Role of Two Cell Wall Amidases in Septal Junction and Nanopore Formation in the Multicellular Cyanobacterium Anabaena sp. PCC 7120. Frontiers in Cellular and Infection Microbiology, 2017, 7, 386.	3.9	35
60	Interaction of the Nitrogen Regulatory Protein GlnB (PII) with Biotin Carboxyl Carrier Protein (BCCP) Controls Acetyl-CoA Levels in the Cyanobacterium Synechocystis sp. PCC 6803. Frontiers in Microbiology, 2016, 7, 1700.	3.5	45
61	Enabling cellâ€“cell communication via nanopore formation: structure, function and localization of the unique cell wall amidase AmiC2 of Nostoc punctiforme. FEBS Journal, 2016, 283, 1336-1350.	4.7	21
62	Sensory properties of the <scp>P_{II}</scp> signalling protein family. FEBS Journal, 2016, 283, 425-437.	4.7	109
63	Awakening of a Dormant Cyanobacterium from Nitrogen Chlorosis Reveals a Genetically Determined Program. Current Biology, 2016, 26, 2862-2872.	3.9	149
64	Septal Junctions in Filamentous Heterocyst-Forming Cyanobacteria. Trends in Microbiology, 2016, 24, 79-82.	7.7	48
65	DNA affinity capturing identifies new regulators of the heterologously expressed novobiocin gene cluster in Streptomyces coelicolor M512. Applied Microbiology and Biotechnology, 2016, 100, 4495-4509.	3.6	11
66	The Molecular Basis of TnrA Control by Glutamine Synthetase in Bacillus subtilis. Journal of Biological Chemistry, 2016, 291, 3483-3495.	3.4	27
67	Clear differences in metabolic and morphological adaptations of akinetes of two Nostocales living in different habitats. Microbiology (United Kingdom), 2016, 162, 214-223.	1.8	39
68	Microbiology Comment. Microbiology (United Kingdom), 2016, 162, 727-729.	1.8	9
69	Characterization of DNA Binding Sites of RokB, a ROK-Family Regulator from Streptomyces coelicolor Reveals the RokB Regulon. PLoS ONE, 2016, 11, e0153249.	2.5	8
70	Metabolic pathway engineering using the central signal processor PII. Microbial Cell Factories, 2015, 14, 192.	4.0	47
71	Energy Sensing versus 2-Oxoglutarate Dependent ATPase Switch in the Control of Synechococcus PII Interaction with Its Targets NAGK and PipX. PLoS ONE, 2015, 10, e0137114.	2.5	19
72	Nitrogen Starvation Acclimation in Synechococcus elongatus: Redox-Control and the Role of Nitrate Reduction as an Electron Sink. Life, 2015, 5, 888-904.	2.4	34

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73	The Bacterial signal transduction protein <scp>GlnB</scp> regulates the committed step in fatty acid biosynthesis by acting as a dissociable regulatory subunit of acetylâ€<scp>CoA</scp> carboxylase. Molecular Microbiology, 2015, 95, 1025-1035.	2.5	54
74	Phosphoproteome of the cyanobacterium Synechocystis sp. PCC 6803 and its dynamics during nitrogen starvation. Frontiers in Microbiology, 2015, 6, 248.	3.5	79
75	Photoautotrophic Polyhydroxybutyrate Granule Formation Is Regulated by Cyanobacterial Phasin PhaP in Synechocystis sp. Strain PCC 6803. Applied and Environmental Microbiology, 2015, 81, 4411-4422.	3.1	45
76	Reduction of PII signaling protein enhances lipid body production in Chlamydomonas reinhardtii. Plant Science, 2015, 240, 1-9.	3.6	28
77	Glutamine Assimilation and Feedback Regulation of L-acetyl-N-glutamate Kinase Activity in Chlorella variabilis NC64A Results in Changes in Arginine Pools. Protist, 2015, 166, 493-505.	1.5	12
78	Structural Basis and Target-specific Modulation of ADP Sensing by the Synechococcus elongatus PII Signaling Protein. Journal of Biological Chemistry, 2014, 289, 8960-8972.	3.4	57
79	Ammonium tolerance in the cyanobacterium <scp>S</scp>ynechocystis sp. strain <scp>PCC</scp> 6803 and the role of the <scp>psbA</scp> multigene family. Plant, Cell and Environment, 2014, 37, 840-851.	5.7	59
80	Structureâ€“function analysis of the ATPâ€driven glycolipid efflux pump DevBCA reveals complex organization with TolC/HgdD. FEBS Letters, 2014, 588, 395-400.	2.8	19
81	A Widespread Glutamine-Sensing Mechanism in the Plant Kingdom. Cell, 2014, 159, 1188-1199.	28.9	127
82	SPR analysis of promoter binding of Synechocystis PCC6803 transcription factors NtcA and CRP suggests crossâ€talk and sheds light on regulation by effector molecules. FEBS Letters, 2014, 588, 2270-2276.	2.8	35
83	Transcription factor TnrA inhibits the biosynthetic activity of glutamine synthetase in Bacillus subtilis. FEBS Letters, 2013, 587, 1293-1298.	2.8	31
84	PII Signal Transduction Protein in Chlamydomonas reinhardtii: Localization and Expression Pattern. Protist, 2013, 164, 49-59.	1.5	27
85	From cyanobacteria to plants: conservation of PII functions during plastid evolution. Planta, 2013, 237, 451-462.	3.2	58
86	Prokaryotic multicellularity: a nanopore array for bacterial cell communication. FASEB Journal, 2013, 27, 2293-2300.	0.5	61
87	Metabolic Changes in Synechocystis PCC6803 upon Nitrogen-Starvation: Excess NADPH Sustains Polyhydroxybutyrate Accumulation. Metabolites, 2013, 3, 101-118.	2.9	87
88	From PII Signaling to Metabolite Sensing: A Novel 2-Oxoglutarate Sensor That Details PII - NAGK Complex Formation. PLoS ONE, 2013, 8, e83181.	2.5	22
89	An engineered PII protein variant that senses a novel ligand: atomic resolution structure of the complex with citrate. Acta Crystallographica Section D: Biological Crystallography, 2012, 68, 901-908.	2.5	19
90	Signal-transduction protein PII from Synechococcus elongatus PCC 7942 senses low adenylate energy charge in vitro. Biochemical Journal, 2011, 440, 147-156.	3.7	35

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91	Interaction of the general transcription factor TnrA with the PII-like protein GlnK and glutamine synthetase in Bacillusâ€ƒsubtilis. FEBS Journal, 2011, 278, 1779-1789.	4.7	34
92	Novel ATP-driven Pathway of Glycolipid Export Involving TolC Protein. Journal of Biological Chemistry, 2011, 286, 38202-38210.	3.4	31
93	Metabolic and Transcriptomic Phenotyping of Inorganic Carbon Acclimation in the Cyanobacterium Synechococcus elongatus PCC 7942 Â. Plant Physiology, 2011, 155, 1640-1655.	4.8	81
94	Requirement of the Nitrogen Starvation-Induced Protein Sll0783 for Polyhydroxybutyrate Accumulation in Synechocystis sp. Strain PCC 6803. Applied and Environmental Microbiology, 2010, 76, 6101-6107.	3.1	104
95	DevT (Alr4674), resembling a Ser/Thr protein phosphatase, is essential for heterocyst function in the cyanobacterium Anabaena sp. PCC 7120. Microbiology (United Kingdom), 2010, 156, 3544-3555.	1.8	7
96	Mechanism of 2-oxoglutarate signaling by the Synechococcus elongatus P _{II} signal transduction protein. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 19760-19765.	7.1	106
97	Structural basis for the regulation of NtcA-dependent transcription by proteins PipX and PII. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 15397-15402.	7.1	116
98	A Novel Signal Transduction Protein PII Variant from Synechococcus elongatus PCC 7942 Indicates a Two-Step Process for NAGKâ€“PII Complex Formation. Journal of Molecular Biology, 2010, 399, 410-421.	4.2	42
99	N-Acetyl-l-Glutamate Kinase (NAGK) from Oxygenic Phototrophs: PII Signal Transduction across Domains of Life Reveals Novel Insights in NAGK Control. Journal of Molecular Biology, 2009, 389, 748-758.	4.2	41
100	PII signal transducers: novel functional and structural insights. Trends in Microbiology, 2008, 16, 65-72.	7.7	192
101	Inactivation of the general transcription factor TnrA in Bacillus subtilis by proteolysis. Microbiology (United Kingdom), 2008, 154, 2348-2355.	1.8	24
102	The crystal structure of the complex of PII and acetylglutamate kinase reveals how PII controls the storage of nitrogen as arginine. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 17644-17649.	7.1	113
103	Role of the Synechococcus PCC 7942 nitrogen regulator protein PipX in NtcA-controlled processes. Microbiology (United Kingdom), 2007, 153, 711-718.	1.8	66
104	Regulatory links between carbon and nitrogen metabolism. Current Opinion in Microbiology, 2006, 9, 167-172.	5.1	171
105	Interaction network in cyanobacterial nitrogen regulation: PipX, a protein that interacts in a 2-oxoglutarate dependent manner with PII and NtcA. Molecular Microbiology, 2006, 61, 457-469.	2.5	149
106	P II -Regulated Arginine Synthesis Controls Accumulation of Cyanophycin in Synechocystis sp. Strain PCC 6803. Journal of Bacteriology, 2006, 188, 2730-2734.	2.2	57
107	Interaction of the Membrane-bound GlnK-AmtB Complex with the Master Regulator of Nitrogen Metabolism TnrA in Bacillus subtilis. Journal of Biological Chemistry, 2006, 281, 34909-34917.	3.4	74
108	Unique mechanistic features of post-translational regulation of glutamine synthetase activity inMethanosarcina mazeistrain GÃ¶1 in response to nitrogen availability. Molecular Microbiology, 2005, 55, 1841-1854.	2.5	53

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109	Signal Transduction Protein P II Phosphatase PphA Is Required for Light-Dependent Control of Nitrate Utilization in Synechocystis sp. Strain PCC 6803. Journal of Bacteriology, 2005, 187, 6683-6690.	2.2	33
110	Acclimation of unicellular cyanobacteria to macronutrient deficiency: emergence of a complex network of cellular responses. Microbiology (United Kingdom), 2005, 151, 2503-2514.	1.8	217
111	Complex Formation and Catalytic Activation by the PII Signaling Protein of N-Acetyl-l-glutamate Kinase from Synechococcus elongatus Strain PCC 7942. Journal of Biological Chemistry, 2004, 279, 55202-55210.	3.4	93
112	The Synechococcus elongatus PII signal transduction protein controls arginine synthesis by complex formation with N-acetyl-l-glutamate kinase. Molecular Microbiology, 2004, 52, 1303-1314.	2.5	126
113	Nitrogen Starvation-Induced Chlorosis inSynechococcus PCC 7942. Low-Level Photosynthesis As a Mechanism of Long-Term Survival. Plant Physiology, 2001, 126, 233-243.	4.8	160
114	Phosphorylation of the signal transducer PII protein and an additional effector are required for the PII-mediated regulation of nitrate and nitrite uptake in the cyanobacterium Synechococcus sp. PCC 7942. FEBS Journal, 2000, 267, 591-600.	0.2	70
115	The Synechococcus Strain PCC 7942glnN Product (Glutamine Synthetase III) Helps Recovery from Prolonged Nitrogen Chlorosis. Journal of Bacteriology, 2000, 182, 5615-5619.	2.2	41
116	Nitrogen-starvation-induced chlorosis in Synechococcus PCC 7942: adaptation to long-term survival. Microbiology (United Kingdom), 1998, 144, 2449-2458.	1.8	135
117	Characterization of the glnB gene product of Nostoc punctiforme strain ATCC 29133: glnB or the PII protein may be essential. Microbiology (United Kingdom), 1998, 144, 1537-1547.	1.8	37
118	Cyanophycin: A Nitrogen-Rich Reserve Polymer. , 0, , .		9