John W Peters

List of Publications by Year
in descending order

130 papers	9,700 citations	38742 50 h-index	39675 94 g-index
138 all docs	138 docs citations	138 times ranked	7235 citing authors

#	Article	IF	Citations
1	Light-driven dinitrogen reduction catalyzed by a CdS:nitrogenase MoFe protein biohybrid. Science, 2016, 352, 448-450.	12.6	676
2	Redox-Dependent Structural Changes in the Nitrogenase P-Cluster,. Biochemistry, 1997, 36, 1181-1187.	2.5	498
3	Symbiotic Nitrogen Fixation and the Challenges to Its Extension to Nonlegumes. Applied and Environmental Microbiology, 2016, 82, 3698-3710.	3.1	443
4	[FeFe]- and [NiFe]-hydrogenase diversity, mechanism, and maturation. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1350-1369.	4.1	400
5	Dithiomethylether as a Ligand in the Hydrogenase H-Cluster. Journal of the American Chemical Society, 2008, 130, 4533-4540.	13.7	304
6	Binding of Exogenously Added Carbon Monoxide at the Active Site of the Iron-Only Hydrogenase (CpI) fromClostridium pasteurianumâ€,â€¡. Biochemistry, 1999, 38, 12969-12973.	2.5	297
7	Stepwise [FeFe]-hydrogenase H-cluster assembly revealed in the structure of HydAÎ”EFG. Nature, 2010, 465, 248-251.	27.8	295
8	In situanalysis of nitrogen fixation and metabolic switching in unicellular thermophilic cyanobacteria inhabiting hot spring microbial mats. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 2398-2403.	7.1	239
9	Insights into [FeFe]-Hydrogenase Structure, Mechanism, and Maturation. Structure, 2011, 19, 1038-1052.	3.3	220
10	Structure and mechanism of iron-only hydrogenases. Current Opinion in Structural Biology, 1999, 9, 670-676.	5.7	207
11	New insights into the evolutionary history of biological nitrogen fixation. Frontiers in Microbiology, 2013, 4, 201.	3.5	199
12	Nitrogenase Structure and Function: A Biochemical-Genetic Perspective. Annual Review of Microbiology, 1995, 49, 335-366.	7.3	181
13	[FeFe]-Hydrogenase Maturation: HydG-Catalyzed Synthesis of Carbon Monoxide. Journal of the American Chemical Society, 2010, 132, 9247-9249.	13.7	149
14	[FeFe]â€Hydrogenase Cyanide Ligands Derived From <i>S</i>â€Adenosylmethionineâ€Dependent Cleavage of Tyrosine. Angewandte Chemie - International Edition, 2010, 49, 1687-1690.	13.8	144
15	Reversible Carbon Monoxide Binding and Inhibition at the Active Site of the Fe-Only Hydrogenaseâ€. Biochemistry, 2000, 39, 7455-7460.	2.5	142
16	The Electron Bifurcating FixABCX Protein Complex from <i>Azotobacter vinelandii</i>: Generation of Low-Potential Reducing Equivalents for Nitrogenase Catalysis. Biochemistry, 2017, 56, 4177-4190.	2.5	140
17	Electron bifurcation. Current Opinion in Chemical Biology, 2016, 31, 146-152.	6.1	139
18	Control of nitrogen fixation in bacteria that associate with cereals. Nature Microbiology, 2020, 5, 314-330.	13.3	135

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19	Synthesis of the 2Fe subcluster of the [FeFe]-hydrogenase H cluster on the HydF scaffold. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 10448-10453.	7.1	129
20	Exploring the alternatives of biological nitrogen fixation. Metallomics, 2018, 10, 523-538.	2.4	125
21	HydF as a scaffold protein in [FeFe] hydrogenase Hâ€cluster biosynthesis. FEBS Letters, 2008, 582, 2183-2187.	2.8	122
22	Goniometer-based femtosecond crystallography with X-ray free electron lasers. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17122-17127.	7.1	122
23	Mechanistic insights into energy conservation by flavin-based electron bifurcation. Nature Chemical Biology, 2017, 13, 655-659.	8.0	121
24	Activation of HydA^{Î”EFG} Requires a Preformed [4Fe-4S] Cluster. Biochemistry, 2009, 48, 6240-6248.	2.5	119
25	[FeFe]-Hydrogenase Oxygen Inactivation Is Initiated at the H Cluster 2Fe Subcluster. Journal of the American Chemical Society, 2015, 137, 1809-1816.	13.7	119
26	Exploring new frontiers of nitrogenase structure and mechanism. Current Opinion in Chemical Biology, 2006, 10, 101-108.	6.1	116
27	In vitro activation of [FeFe] hydrogenase: new insights into hydrogenase maturation. Journal of Biological Inorganic Chemistry, 2007, 12, 443-447.	2.6	109
28	Investigations on the Role of Proton-Coupled Electron Transfer in Hydrogen Activation by [FeFe]-Hydrogenase. Journal of the American Chemical Society, 2014, 136, 15394-15402.	13.7	107
29	Insights into Nucleotide Signal Transduction in Nitrogenase:â€‰ Structure of an Iron Protein with MgADP Bound,. Biochemistry, 2000, 39, 14745-14752.	2.5	105
30	An Alternative Path for the Evolution of Biological Nitrogen Fixation. Frontiers in Microbiology, 2011, 2, 205.	3.5	105
31	Energy Transduction in Nitrogenase. Accounts of Chemical Research, 2018, 51, 2179-2186.	15.6	101
32	Transcriptional Profiling of Nitrogen Fixation in Azotobacter vinelandii. Journal of Bacteriology, 2011, 193, 4477-4486.	2.2	99
33	Use of plant colonizing bacteria as chassis for transfer of N2-fixation to cereals. Current Opinion in Biotechnology, 2015, 32, 216-222.	6.6	99
34	Evolution of Molybdenum Nitrogenase during the Transition from Anaerobic to Aerobic Metabolism. Journal of Bacteriology, 2015, 197, 1690-1699.	2.2	97
35	Evidence That the P_i Release Event Is the Rate-Limiting Step in the Nitrogenase Catalytic Cycle. Biochemistry, 2016, 55, 3625-3635.	2.5	95
36	[FeFe]-Hydrogenase Maturation. Biochemistry, 2014, 53, 4090-4104.	2.5	93

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37	Structure of an Ancient Respiratory System. Cell, 2018, 173, 1636-1649.e16.	28.9	92
38	MgATP-Bound and Nucleotide-Free Structures of a Nitrogenase Protein Complex between the Leu 127Î"-Fe-Protein and the MoFe-Proteinâ€‚â€¡. Biochemistry, 2001, 40, 641-650.	2.5	85
39	Electron Transfer to Nitrogenase in Different Genomic and Metabolic Backgrounds. Journal of Bacteriology, 2018, 200, .	2.2	85
40	EPR and FTIR Analysis of the Mechanism of H₂ Activation by [FeFe]-Hydrogenase HydA1 from Chlamydomonas reinhardtii. Journal of the American Chemical Society, 2013, 135, 6921-6929.	13.7	82
41	The role of geochemistry and energetics in the evolution of modern respiratory complexes from a proton-reducing ancestor. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 958-970.	1.0	79
42	Defining Electron Bifurcation in the Electron-Transferring Flavoprotein Family. Journal of Bacteriology, 2017, 199, .	2.2	78
43	Mechanistic Features and Structure of the Nitrogenase Î±-Gln195MoFe Proteinâ€‚â€¡. Biochemistry, 2001, 40, 1540-1549.	2.5	77
44	Unification of [FeFe]-hydrogenases into three structural and functional groups. Biochimica Et Biophysica Acta - General Subjects, 2016, 1860, 1910-1921.	2.4	76
45	A radical solution for the biosynthesis of the H-cluster of hydrogenase. FEBS Letters, 2006, 580, 363-367.	2.8	72
46	Photochemistry at the Active Site of the Carbon Monoxide Inhibited Form of the Iron-Only Hydrogenase (CpI). Journal of the American Chemical Society, 2000, 122, 3793-3794.	13.7	71
47	Surprising cofactors in metalloenzymes. Current Opinion in Structural Biology, 2003, 13, 220-226.	5.7	70
48	Insights into substrate binding at FeMo-cofactor in nitrogenase from the structure of an Î±-70Ile MoFe protein variant. Journal of Inorganic Biochemistry, 2010, 104, 385-389.	3.5	67
49	Biosynthesis of complex ironâ€"sulfur enzymes. Current Opinion in Chemical Biology, 2011, 15, 319-327.	6.1	65
50	[FeFe]-Hydrogenase Maturation: Insights into the Role HydE Plays in Dithiomethylamine Biosynthesis. Biochemistry, 2015, 54, 1807-1818.	2.5	57
51	Geobiological feedbacks, oxygen, and the evolution of nitrogenase. Free Radical Biology and Medicine, 2019, 140, 250-259.	2.9	56
52	Tuning Catalytic Bias of Hydrogen Gas Producing Hydrogenases. Journal of the American Chemical Society, 2020, 142, 1227-1235.	13.7	55
53	Two functionally distinct NADP+-dependent ferredoxin oxidoreductases maintain the primary redox balance of Pyrococcus furiosus. Journal of Biological Chemistry, 2017, 292, 14603-14616.	3.4	54
54	A new era for electron bifurcation. Current Opinion in Chemical Biology, 2018, 47, 32-38.	6.1	54

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55	Carbon Source Preference in Chemosynthetic Hot Spring Communities. Applied and Environmental Microbiology, 2015, 81, 3834-3847.	3.1	52
56	Structure-Based Mechanism for Oxidative Decarboxylation Reactions Mediated by Amino Acids and Heme Propionates in Coproheme Decarboxylase (HemQ). Journal of the American Chemical Society, 2017, 139, 1900-1911.	13.7	52
57	Biochemical and Kinetic Characterization of Radical <i>S</i>-Adenosyl-<scp>l</scp>-methionine Enzyme HydG. Biochemistry, 2013, 52, 8696-8707.	2.5	50
58	On the nature of organic and inorganic centers that bifurcate electrons, coupling exergonic and endergonic oxidationâ€"reduction reactions. Chemical Communications, 2018, 54, 4091-4099.	4.1	50
59	Hydrogen Metabolism and the Evolution of Biological Respiration. Microbe Magazine, 2014, 9, 361-367.	0.4	47
60	Getting a Handle on the Role of Coenzyme M in Alkene Metabolism. Microbiology and Molecular Biology Reviews, 2008, 72, 445-456.	6.6	46
61	Electron Bifurcation: Thermodynamics and Kinetics of Two-Electron Brokering in Biological Redox Chemistry. Accounts of Chemical Research, 2017, 50, 2410-2417.	15.6	44
62	Structural characterization of the P1+ intermediate state of the P-cluster of nitrogenase. Journal of Biological Chemistry, 2018, 293, 9629-9635.	3.4	44
63	Control of electron transfer in nitrogenase. Current Opinion in Chemical Biology, 2018, 47, 54-59.	6.1	43
64	Reduction Potentials of [FeFe]-Hydrogenase Accessory Ironâ€"Sulfur Clusters Provide Insights into the Energetics of Proton Reduction Catalysis. Journal of the American Chemical Society, 2017, 139, 9544-9550.	13.7	42
65	Environmental Constraints Underpin the Distribution and Phylogenetic Diversity of nifH in the Yellowstone Geothermal Complex. Microbial Ecology, 2011, 61, 860-870.	2.8	40
66	Microbial substrate preference dictated by energy demand rather than supply. Nature Geoscience, 2017, 10, 577-581.	12.9	39
67	Reversible H Atom Abstraction Catalyzed by the Radical <i>S</i>-Adenosylmethionine Enzyme HydG. Journal of the American Chemical Society, 2014, 136, 13086-13089.	13.7	38
68	Fe Protein-Independent Substrate Reduction by Nitrogenase MoFe Protein Variants. Biochemistry, 2015, 54, 2456-2462.	2.5	38
69	H/D exchange mass spectrometry and statistical coupling analysis reveal a role for allostery in a ferredoxin-dependent bifurcating transhydrogenase catalytic cycle. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 9-17.	2.4	38
70	Modulating the Midpoint Potential of the [4Fe-4S] Cluster of the Nitrogenase Fe Protein,. Biochemistry, 2000, 39, 641-648.	2.5	37
71	H-Cluster assembly during maturation of the [FeFe]-hydrogenase. Journal of Biological Inorganic Chemistry, 2014, 19, 747-757.	2.6	36
72	Substrate specificity and evolutionary implications of a NifDK enzyme carrying NifBâ€co at its active site. FEBS Letters, 2010, 584, 1487-1492.	2.8	34

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73	Syntrophomonas wolfei Uses an NADH-Dependent, Ferredoxin-Independent [FeFe]-Hydrogenase To Reoxidize NADH. Applied and Environmental Microbiology, 2017, 83, .	3.1	34
74	A Conformational Mimic of the MgATP-Bound â€œOn Stateâ€•of the Nitrogenase Iron Protein,. Biochemistry, 2004, 43, 1787-1797.	2.5	33
75	Defining Intermediates of Nitrogenase MoFe Protein during N₂ Reduction under Photochemical Electron Delivery from CdS Quantum Dots. Journal of the American Chemical Society, 2020, 142, 14324-14330.	13.7	32
76	The Physiological Functions and Structural Determinants of Catalytic Bias in the [FeFe]-Hydrogenases CpI and CpII of Clostridium pasteurianum Strain W5. Frontiers in Microbiology, 2017, 8, 1305.	3.5	30
77	The catalytic mechanism of electron-bifurcating electron transfer flavoproteins (ETFs) involves an intermediary complex with NAD+. Journal of Biological Chemistry, 2019, 294, 3271-3283.	3.4	30
78	Protein Scaffold Activates Catalytic CO₂ Hydrogenation by a Rhodium Bis(diphosphine) Complex. ACS Catalysis, 2019, 9, 620-625.	11.2	30
79	Comment on â€œStructural evidence for a dynamic metallocofactor during N ₂ reduction by Mo-nitrogenaseâ€• Science, 2021, 371, .	12.6	29
80	Growth of Chlamydomonas reinhardtii in acetate-free medium when co-cultured with alginate-encapsulated, acetate-producing strains of Synechococcus sp. PCC 7002. Biotechnology for Biofuels, 2014, 7, 154.	6.2	28
81	Transcriptional Analysis of an Ammonium-Excreting Strain of Azotobacter vinelandii Deregulated for Nitrogen Fixation. Applied and Environmental Microbiology, 2017, 83, .	3.1	27
82	Radical AdoMet enzymes in complex metal cluster biosynthesis. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2012, 1824, 1254-1263.	2.3	25
83	Electron bifurcation: progress and grand challenges. Chemical Communications, 2019, 55, 11823-11832.	4.1	25
84	Structural Basis for CO2 Fixation by a Novel Member of the Disulfide Oxidoreductase Family of Enzymes, 2-Ketopropyl-Coenzyme M Oxidoreductase/Carboxylase,. Biochemistry, 2002, 41, 12907-12913.	2.5	24
85	Insights into the role of nucleotide-dependent conformational change in nitrogenase catalysis: Structural characterization of the nitrogenase Fe protein Leu127 deletion variant with bound MgATP. Journal of Inorganic Biochemistry, 2006, 100, 1041-1052.	3.5	23
86	Excitation-Rate Determines Product Stoichiometry in Photochemical Ammonia Production by CdS Quantum Dot-Nitrogenase MoFe Protein Complexes. ACS Catalysis, 2020, 10, 11147-11152.	11.2	23
87	Radical S-Adenosyl-l-methionine Chemistry in the Synthesis of Hydrogenase and Nitrogenase Metal Cofactors. Journal of Biological Chemistry, 2015, 290, 3987-3994.	3.4	22
88	Distinct properties underlie flavin-based electron bifurcation in a novel electron transfer flavoprotein FixAB from Rhodopseudomonas palustris. Journal of Biological Chemistry, 2018, 293, 4688-4701.	3.4	22
89	Evolutionary and Biotechnological Implications of Robust Hydrogenase Activity in Halophilic Strains of Tetraselmis. PLoS ONE, 2014, 9, e85812.	2.5	21
90	Unraveling the interactions of the physiological reductant flavodoxin with the different conformations of the Fe protein in the nitrogenase cycle. Journal of Biological Chemistry, 2017, 292, 15661-15669.	3.4	21

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91	Structural characterization of the nitrogenase molybdenum-iron protein with the substrate acetylene trapped near the active site. Journal of Inorganic Biochemistry, 2018, 180, 129-134.	3.5	21
92	Cyanide and Carbon Monoxide Ligand Formation in Hydrogenase Biosynthesis. European Journal of Inorganic Chemistry, 2011, 2011, 935-947.	2.0	19
93	A Positive Charge in the Outer Coordination Sphere of an Artificial Enzyme Increases CO₂ Hydrogenation. Organometallics, 2020, 39, 1532-1544.	2.3	19
94	A Redox Active [2Fe-2S] Cluster on the Hydrogenase Maturase HydF. Biochemistry, 2016, 55, 3514-3527.	2.5	18
95	[FeFe]-Hydrogenase Abundance and Diversity along a Vertical Redox Gradient in Great Salt Lake, USA. International Journal of Molecular Sciences, 2014, 15, 21947-21966.	4.1	17
96	Structural and biochemical implications of single amino acid substitutions in the nucleotide-dependent switch regions of the nitrogenase Fe protein from Azotobacter vinelandii. Journal of Biological Inorganic Chemistry, 2004, 9, 1028-1033.	2.6	16
97	Hydrogen Deuterium Exchange Mass Spectrometry of Oxygen Sensitive Proteins. Bio-protocol, 2018, 8, .	0.4	16
98	Metabolic Model of the Nitrogen-Fixing Obligate Aerobe Azotobacter vinelandii Predicts Its Adaptation to Oxygen Concentration and Metal Availability. MBio, 2021, 12, e0259321.	4.1	16
99	Catalytic bias in oxidationâ€“reduction catalysis. Chemical Communications, 2021, 57, 713-720.	4.1	15
100	Structural basis for carbon dioxide binding by 2-ketopropyl coenzyme M oxidoreductase/carboxylase. FEBS Letters, 2011, 585, 459-464.	2.8	14
101	Biochemical and Structural Properties of a Thermostable Mercuric Ion Reductase from Metallosphaera sedula. Frontiers in Bioengineering and Biotechnology, 2015, 3, 97.	4.1	14
102	Revealing a role for the G subunit in mediating interactions between the nitrogenase component proteins. Journal of Inorganic Biochemistry, 2021, 214, 111273.	3.5	13
103	Roles of the Redox-Active Disulfide and Histidine Residues Forming a Catalytic Dyad in Reactions Catalyzed by 2-Ketopropyl Coenzyme M Oxidoreductase/Carboxylase. Journal of Bacteriology, 2011, 193, 4904-4913.	2.2	12
104	Electron Bifurcation Makes the Puzzle Pieces Fall Energetically into Place in Methanogenic Energy Conservation. ChemBioChem, 2017, 18, 2295-2297.	2.6	12
105	Structural Basis for the Mechanism of ATP-Dependent Acetone Carboxylation. Scientific Reports, 2017, 7, 7234.	3.3	12
106	ENZYMOLOGY: A Trio of Transition Metals in Anaerobic CO2 Fixation. Science, 2002, 298, 552-553.	12.6	11
107	HydG, the â€œdanglerâ€•iron, and catalytic production of free CO and CN^{âˆ’}: implications for [FeFe]-hydrogenase maturation. Dalton Transactions, 2021, 50, 10405-10422.	3.3	11
108	Nuclear resonance vibrational spectroscopy (NRVS) of rubredoxin and MoFe protein crystals. Hyperfine Interactions, 2013, 222, 77-90.	0.5	10

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109	Coenzyme M biosynthesis in bacteria involves phosphate elimination by a functionally distinct member of the aspartase/fumarase superfamily. Journal of Biological Chemistry, 2018, 293, 5236-5246.	3.4	10
110	Mechanistic Implications of the Structure of the Mixed-Disulfide Intermediate of the Disulfide Oxidoreductase, 2-Ketopropyl-Coenzyme M Oxidoreductase/Carboxylaseâ€‚â€¡. Biochemistry, 2006, 45, 113-120.	2.5	9
111	High level of hydrogen production activity achieved for hydrogenase encapsulated in solâ€“gel material doped with carbon nanotubes. Journal of Materials Chemistry, 2010, 20, 1065.	6.7	9
112	Biochemical and Structural Characterization of Enolase from Chloroflexus aurantiacus: Evidence for a Thermophilic Origin. Frontiers in Bioengineering and Biotechnology, 2015, 3, 74.	4.1	9
113	Diazotrophic Growth Allows Azotobacter vinelandii To Overcome the Deleterious Effects of a <i>glnE</i> Deletion. Applied and Environmental Microbiology, 2017, 83, .	3.1	9
114	Genetic Determinants of Ammonium Excretion in <i>nifL</i> Mutants of Azotobacter vinelandii. Applied and Environmental Microbiology, 2022, 88, AEM0187621.	3.1	9
115	Mechanical coupling in the nitrogenase complex. PLoS Computational Biology, 2021, 17, e1008719.	3.2	8
116	A site-differentiated [4Feâ€“4S] cluster controls electron transfer reactivity of <i>Clostridium acetobutylicum</i> [FeFe]-hydrogenase I. Chemical Science, 2022, 13, 4581-4588.	7.4	8
117	Substitution of a conserved catalytic dyad into 2â€•KPCC causes loss of carboxylation activity. FEBS Letters, 2016, 590, 2991-2996.	2.8	7
118	Dissecting Electronic-Structural Transitions in the Nitrogenase MoFe Protein P-Cluster during Reduction. Journal of the American Chemical Society, 2022, 144, 5708-5712.	13.7	7
119	The Kinetics of Electron Transfer from CdS Nanorods to the MoFe Protein of Nitrogenase. Journal of Physical Chemistry C, 2022, 126, 8425-8435.	3.1	7
120	Structural Characterization of Poised States in the Oxygen Sensitive Hydrogenases and Nitrogenases. Methods in Enzymology, 2017, 595, 213-259.	1.0	6
121	An uncharacteristically low-potential flavin governs the energy landscape of electron bifurcation. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2117882119.	7.1	5
122	The reactive form of a Câ€“S bondâ€“cleaving, CO2-fixing flavoenzyme. Journal of Biological Chemistry, 2019, 294, 5137-5145.	3.4	4
123	Insights into the unique carboxylation reactions in the metabolism of propylene and acetone. Biochemical Journal, 2020, 477, 2027-2038.	3.7	3
124	Phosphorus containing analogues of SAHA as inhibitors of HDACs. Journal of Enzyme Inhibition and Medicinal Chemistry, 2022, 37, 1315-1319.	5.2	3
125	Biomimetic Synthesis of an Active H2 Catalyst Using the Ferritin Protein Cage Architecture. ACS Symposium Series, 2008, , 263-272.	0.5	1
126	The unique Pheâ€“His dyad of 2-ketopropyl coenzyme M oxidoreductase/carboxylase selectively promotes carboxylation and Sâ€“C bond cleavage. Journal of Biological Chemistry, 2021, 297, 100961.	3.4	1

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127	A catalytic dyad modulates conformational change in the CO2-fixing flavoenzyme 2-ketopropyl coenzyme MÂoxidoreductase/carboxylase. Journal of Biological Chemistry, 2022, 298, 101884.	3.4	1
128	Cyanide and Carbon Monoxide Ligand Formation in Hydrogenase Biosynthesis. European Journal of Inorganic Chemistry, 2011, 2011, .	2.0	0
129	Bioenergetics Theory and Components	Flavin-Based Electron Bifurcation. , 2021, , 130-142.		0
130	The Unfolded-Protein Response Triggers the Arthropod Immune Deficiency Pathway. MBio, 0, , .	4.1	0