

# J Allan Downie

## List of Publications by Year in descending order

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111  
papers

14,124  
citations

20817

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30087

103  
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all docs

123  
docs citations

123  
times ranked

8228  
citing authors

#	ARTICLE	IF	CITATIONS
1	The Rules of Engagement in the Legume-Rhizobial Symbiosis. Annual Review of Genetics, 2011, 45, 119-144.	7.6	1,008
2	Coordinating Nodule Morphogenesis with Rhizobial Infection in Legumes. Annual Review of Plant Biology, 2008, 59, 519-546.	18.7	942
3	A family of related ATP-binding subunits coupled to many distinct biological processes in bacteria. Nature, 1986, 323, 448-450.	27.8	757
4	Nodulation Signaling in Legumes Requires NSP2, a Member of the GRAS Family of Transcriptional Regulators. Science, 2005, 308, 1786-1789.	12.6	525
5	From The Cover: A Ca <sup>2+</sup> /calmodulin-dependent protein kinase required for symbiotic nodule development: Gene identification by transcript-based cloning. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 4701-4705.	7.1	433
6	Deregulation of a Ca <sup>2+</sup> /calmodulin-dependent kinase leads to spontaneous nodule development. Nature, 2006, 441, 1153-1156.	27.8	400
7	Plastid proteins crucial for symbiotic fungal and bacterial entry into plant roots. Nature, 2005, 433, 527-531.	27.8	391
8	From The Cover: A nucleoporin is required for induction of Ca <sup>2+</sup> spiking in legume nodule development and essential for rhizobial and fungal symbiosis. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 359-364.	7.1	361
9	The roles of extracellular proteins, polysaccharides and signals in the interactions of rhizobia with legume roots. FEMS Microbiology Reviews, 2010, 34, 150-170.	8.6	344
10	GRAS Proteins Form a DNA Binding Complex to Induce Gene Expression during Nodulation Signaling in <i>Medicago truncatula</i> . Plant Cell, 2009, 21, 545-557.	6.6	342
11	The Root Hair Infection of <i>Medicago truncatula</i> Uncovers Changes in Cell Cycle Genes and Reveals a Requirement for Auxin Signaling in Rhizobial Infection. Plant Cell, 2014, 26, 4680-4701.	6.6	313
12	Calcium, kinases and nodulation signalling in legumes. Nature Reviews Molecular Cell Biology, 2004, 5, 566-576.	37.0	312
13	NUCLEOPORIN85 Is Required for Calcium Spiking, Fungal and Bacterial Symbioses, and Seed Production in <i>Lotus japonicus</i> . Plant Cell, 2007, 19, 610-624.	6.6	309
14	Differential and chaotic calcium signatures in the symbiosis signaling pathway of legumes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9823-9828.	7.1	262
15	<i>Lotus japonicus</i> Nodulation Requires Two GRAS Domain Regulators, One of Which Is Functionally Conserved in a Non-Legume. Plant Physiology, 2006, 142, 1739-1750.	4.8	250
16	Membrane Adenosine Triphosphatases of Prokaryotic Cells. Annual Review of Biochemistry, 1979, 48, 103-131.	11.1	245
17	Quorum sensing as a population-density-dependent determinant of bacterial physiology. Advances in Microbial Physiology, 2001, 45, 199-270.	2.4	239
18	Nuclear calcium changes at the core of symbiosis signalling. Current Opinion in Plant Biology, 2006, 9, 351-357.	7.1	228

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19	Legume pectate lyase required for root infection by rhizobia. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 633-638.	7.1	225
20	What Makes the Rhizobia-Legume Symbiosis So Special?. Plant Physiology, 2001, 127, 1484-1492.	4.8	214
21	The regulatory locus <i>cinRI</i> in <i>Rhizobium leguminosarum</i> controls a network of quorum-sensing loci. Molecular Microbiology, 2000, 37, 81-97.	2.5	209
22	Nuclear membranes control symbiotic calcium signaling of legumes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14348-14353.	7.1	191
23	The biocontrol strain <i>Pseudomonas fluorescens</i> F113 produces the <i>Rhizobium</i> small bacteriocin, N-(3-hydroxy-7-cis-tetradecenoyl)homoserine lactone, via HdtS, a putative novel N-acylhomoserine lactone synthase The GenBank accession number for the sequence determined in this work is AF286536.. Microbiology (United Kingdom). 2000. 146. 2469-2480.	1.8	185
24	Adaptation of <i>Rhizobium leguminosarum</i> to pea, alfalfa and sugar beet rhizospheres investigated by comparative transcriptomics. Genome Biology, 2011, 12, R106.	9.6	167
25	Genome sequence and genetic diversity of European ash trees. Nature, 2017, 541, 212-216.	27.8	166
26	Analysis of Nod-Factor-Induced Calcium Signaling in Root Hairs of Symbiotically Defective Mutants of <i>Lotus japonicus</i> . Molecular Plant-Microbe Interactions, 2006, 19, 914-923.	2.6	164
27	Legume nodulation. Current Biology, 2014, 24, R184-R190.	3.9	155
28	Cloned nodulation genes of <i>Rhizobium leguminosarum</i> determine host-range specificity. Molecular Genetics and Genomics, 1983, 190, 359-365.	2.4	153
29	Quorum-sensing regulation in rhizobia and its role in symbiotic interactions with legumes. Philosophical Transactions of the Royal Society B: Biological Sciences, 2007, 362, 1149-1163.	4.0	153
30	Analysis of calcium spiking using aameleon calcium sensor reveals that nodulation gene expression is regulated by calcium spike number and the developmental status of the cell. Plant Journal, 2006, 48, 883-894.	5.7	150
31	Rearrangement of Actin Cytoskeleton Mediates Invasion of <i>Lotus japonicus</i> Roots by <i>Mesorhizobium loti</i> . Plant Cell, 2009, 21, 267-284.	6.6	149
32	Analysis of Quorum-Sensing-Dependent Control of Rhizosphere-Expressed ( <i>rhi</i> ) Genes in <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> . Journal of Bacteriology, 1999, 181, 3816-3823.	2.2	134
33	Subunits of the Adenosine Triphosphatase Complex Translated In Vitro from the <i>Escherichia coli</i> <i>unc</i> Operon. Journal of Bacteriology, 1980, 143, 8-17.	2.2	134
34	Plant responses to nodulation factors. Current Opinion in Plant Biology, 1999, 2, 483-489.	7.1	131
35	A H <sup>+</sup> -ATPase That Energizes Nutrient Uptake during Mycorrhizal Symbioses in Rice and <i>Medicago truncatula</i> . Plant Cell, 2014, 26, 1818-1830.	6.6	131
36	Positional Cloning Identifies <i>Lotus japonicus</i> NSP2, A Putative Transcription Factor of the GRAS Family, Required for NIN and ENOD40 Gene Expression in Nodule Initiation. DNA Research, 2006, 13, 255-265.	3.4	129

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37	Morphotype of bacteroids in different legumes correlates with the number and type of symbiotic NCR peptides. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5041-5046.	7.1	126
38	Glucomannan-Mediated Attachment of <i>Rhizobium leguminosarum</i> to Pea Root Hairs Is Required for Competitive Nodule Infection. <i>Journal of Bacteriology</i> , 2008, 190, 4706-4715.	2.2	120
39	Proteins Exported via the PrsD-PrsE Type I Secretion System and the Acidic Exopolysaccharide Are Involved in Biofilm Formation by <i>Rhizobium leguminosarum</i> . <i>Journal of Bacteriology</i> , 2006, 188, 4474-4486.	2.2	110
40	Recipient-Induced transfer of the symbiotic plasmid pRL1J1 in <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> is regulated by a quorum-sensing relay. <i>Molecular Microbiology</i> , 2003, 50, 511-525.	2.5	108
41	Quorum-sensing in <i>Rhizobium</i> . <i>Antonie Van Leeuwenhoek</i> , 2002, 81, 397-407.	1.7	100
42	The <i>Medicago truncatula</i> DMI1 Protein Modulates Cytosolic Calcium Signaling. <i>Plant Physiology</i> , 2007, 145, 192-203.	4.8	99
43	Plant cysteine-rich peptides that inhibit pathogen growth and control rhizobial differentiation in legume nodules. <i>Current Opinion in Plant Biology</i> , 2015, 26, 57-63.	7.1	92
44	The <i>ERN1</i> transcription factor gene is a target of the <i>CCaMK/CYCLOPS</i> complex and controls rhizobial infection in <i>Lotus japonicus</i> . <i>New Phytologist</i> , 2017, 215, 323-337.	7.3	92
45	Entry of <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> into Root Hairs Requires Minimal Nod Factor Specificity, but Subsequent Infection Thread Growth Requires <i>nodO</i> or <i>nodE</i> . <i>Molecular Plant-Microbe Interactions</i> , 2000, 13, 754-762.	2.6	89
46	Bacterial-induced calcium oscillations are common to nitrogen-fixing associations of nodulating legumes and non-legumes. <i>New Phytologist</i> , 2015, 207, 551-558.	7.3	89
47	Molecular markers for tolerance of European ash ( <i>Fraxinus excelsior</i> ) to dieback disease identified using Associative Transcriptomics. <i>Scientific Reports</i> , 2016, 6, 19335.	3.3	85
48	LIN, a Novel Type of U-Box/WD40 Protein, Controls Early Infection by Rhizobia in Legumes. <i>Plant Physiology</i> , 2009, 151, 1239-1249.	4.8	84
49	The ash dieback invasion of Europe was founded by two genetically divergent individuals. <i>Nature Ecology and Evolution</i> , 2018, 2, 1000-1008.	7.8	82
50	The <i>Rhizobium leguminosarum</i> <i>prsDE</i> genes are required for secretion of several proteins, some of which influence nodulation, symbiotic nitrogen fixation and exopolysaccharide modification. <i>Molecular Microbiology</i> , 1997, 25, 135-146.	2.5	81
51	SCARN a Novel Class of SCAR Protein That Is Required for Root-Hair Infection during Legume Nodulation. <i>PLoS Genetics</i> , 2015, 11, e1005623.	3.5	78
52	Bacterial Biosensors for in Vivo Spatiotemporal Mapping of Root Secretion. <i>Plant Physiology</i> , 2017, 174, 1289-1306.	4.8	78
53	Legume Haemoglobins: Symbiotic Nitrogen Fixation Needs Bloody Nodules. <i>Current Biology</i> , 2005, 15, R196-R198.	3.9	76
54	Signalling strategies for nodulation of legumes by rhizobia. <i>Trends in Microbiology</i> , 1994, 2, 318-324.	7.7	74

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55	Enhanced Symbiotic Performance by <i>Rhizobium tropici</i> Glycogen Synthase Mutants. <i>Journal of Bacteriology</i> , 2001, 183, 854-864.	2.2	74
56	Locks, keys and symbioses. <i>Nature</i> , 2003, 425, 569-570.	27.8	74
57	Identification of protein secretion systems and novel secreted proteins in <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> . <i>BMC Genomics</i> , 2008, 9, 55.	2.8	74
58	Conservation in Function of a SCAR/WAVE Component During Infection Thread and Root Hair Growth in <i>Medicago truncatula</i> . <i>Molecular Plant-Microbe Interactions</i> , 2010, 23, 1553-1562.	2.6	69
59	A Common Genomic Framework for a Diverse Assembly of Plasmids in the Symbiotic Nitrogen Fixing Bacteria. <i>PLoS ONE</i> , 2008, 3, e2567.	2.5	69
60	Exopolysaccharide II Production Is Regulated by Salt in the Halotolerant Strain <i>Rhizobium meliloti</i> EFB1. <i>Applied and Environmental Microbiology</i> , 1998, 64, 1024-1028.	3.1	64
61	Characterization of <i>Rhizobium leguminosarum</i> Exopolysaccharide Glycanases That Are Secreted via a Type I Exporter and Have a Novel Heptapeptide Repeat Motif. <i>Journal of Bacteriology</i> , 1998, 180, 1691-1699.	2.2	64
62	Quorum Sensing. <i>Advances in Microbial Physiology</i> , 2011, 58, 23-80.	2.4	61
63	Functions of Rhizobial Nodulation Genes. , 1998, , 387-402.		57
64	MtLAX2, a Functional Homologue of the Arabidopsis Auxin Influx Transporter AUX1, Is Required for Nodule Organogenesis. <i>Plant Physiology</i> , 2017, 174, 326-338.	4.8	56
65	Structural Implications of Mutations in the Pea <i>SYM8</i> Symbiosis Gene, the <i>DMI1</i> Ortholog, Encoding a Predicted Ion Channel. <i>Molecular Plant-Microbe Interactions</i> , 2007, 20, 1183-1191.	2.6	55
66	Competitive Nodulation Blocking of cv. Afghanistan Pea Is Related to High Levels of Nodulation Factors Made by Some Strains of <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> . <i>Molecular Plant-Microbe Interactions</i> , 2002, 15, 60-68.	2.6	52
67	Quorum-sensing-regulated transcriptional initiation of plasmid transfer and replication genes in <i>Rhizobium leguminosarum</i> biovar <i>viciae</i> . <i>Microbiology (United Kingdom)</i> , 2007, 153, 2074-2082.	1.8	52
68	Rhizobial and Mycorrhizal Symbioses in <i>Lotus japonicus</i> Require Lectin Nucleotide Phosphohydrolase, Which Acts Upstream of Calcium Signaling. <i>Plant Physiology</i> , 2012, 161, 556-567.	4.8	51
69	The <i>cin</i> and <i>rai</i> Quorum-Sensing Regulatory Systems in <i>Rhizobium leguminosarum</i> Are Coordinated by ExpR and CinS, a Small Regulatory Protein Coexpressed with CinI. <i>Journal of Bacteriology</i> , 2009, 191, 3059-3067.	2.2	50
70	Mutation of <i>prpA</i> in <i>Rhizobium leguminosarum</i> enhances root biofilms, improving nodulation competitiveness by increased expression of attachment proteins. <i>Molecular Microbiology</i> , 2014, 93, 464-478.	2.5	49
71	A Plant Arabinogalactan-Like Glycoprotein Promotes a Novel Type of Polar Surface Attachment by <i>Rhizobium leguminosarum</i> . <i>Molecular Plant-Microbe Interactions</i> , 2012, 25, 250-258.	2.6	47
72	The reconstitution of functional respiratory chains in membranes from electron-transport-deficient mutants of <i>Escherichia coli</i> as demonstrated by quenching of atebtrin fluorescence. <i>Biochemical Journal</i> , 1974, 142, 703-706.	3.7	46

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73	Mastoparan Activates Calcium Spiking Analogous to Nod Factor-Induced Responses in <i>Medicago truncatula</i> Root Hair Cells. <i>Plant Physiology</i> , 2007, 144, 695-702.	4.8	46
74	Host-specific Nod factors associated with <i>Medicago truncatula</i> nodule infection differentially induce calcium influx and calcium spiking in root hairs. <i>New Phytologist</i> , 2013, 200, 656-662.	7.3	42
75	Expression of the <i>Arabidopsis thaliana</i> immune receptor EFR in <i>Medicago truncatula</i> reduces infection by a root pathogenic bacterium, but not nitrogen-fixing rhizobial symbiosis. <i>Plant Biotechnology Journal</i> , 2019, 17, 569-579.	8.3	42
76	The C-terminal domain of the <i>Rhizobium leguminosarum</i> chitin synthase NodC is important for function and determines the orientation of the N-terminal region in the inner membrane. <i>Molecular Microbiology</i> , 1996, 19, 443-453.	2.5	40
77	Extracellular Glycanases of <i>Rhizobium leguminosarum</i> Are Activated on the Cell Surface by an Exopolysaccharide-Related Component. <i>Journal of Bacteriology</i> , 2000, 182, 1304-1312.	2.2	40
78	The ABC of symbiosis. <i>Nature</i> , 2001, 412, 597-598.	27.8	40
79	Buffering Capacity Explains Signal Variation in Symbiotic Calcium Oscillations. <i>Plant Physiology</i> , 2012, 160, 2300-2310.	4.8	39
80	Conservation of nolR in the Sinorhizobium and Rhizobium Genera of the Rhizobiaceae Family. <i>Molecular Plant-Microbe Interactions</i> , 1998, 11, 1186-1195.	2.6	36
81	Annexins - calcium- and membrane-binding proteins in the plant kingdom: potential role in nodulation and mycorrhization in <i>Medicago truncatula</i> . <i>Acta Biochimica Polonica</i> , 2009, 56, .	0.5	35
82	The superoxide dismutase SodA is targeted to the periplasm in a SecA-dependent manner by a novel mechanism. <i>Molecular Microbiology</i> , 2011, 82, 164-179.	2.5	34
83	Identification of Symbiotically Defective Mutants of <i>Lotus japonicus</i> Affected in Infection Thread Growth. <i>Molecular Plant-Microbe Interactions</i> , 2006, 19, 1444-1450.	2.6	33
84	Crowdsourcing genomic analyses of ash and ash dieback "power to the people. <i>GigaScience</i> , 2013, 2, 2.	6.4	29
85	Atypical Receptor Kinase RINRK1 Required for Rhizobial Infection But Not Nodule Development in <i>Lotus japonicus</i> . <i>Plant Physiology</i> , 2019, 181, 804-816.	4.8	28
86	Coordination of quorum-sensing regulation in <i>Rhizobium leguminosarum</i> by induction of an anti-repressor. <i>Molecular Microbiology</i> , 2011, 81, 994-1007.	2.5	25
87	Energy Supply for Active Transport in Anaerobically Grown <i>Escherichia coli</i> . <i>Journal of Bacteriology</i> , 1978, 136, 844-853.	2.2	25
88	Natural Variation in Host-Specific Nodulation of Pea Is Associated with a Haplotype of the SYM37 LysM-Type Receptor-Like Kinase. <i>Molecular Plant-Microbe Interactions</i> , 2011, 24, 1396-1403.	2.6	24
89	Lipopolysaccharide O-Chain Core Region Required for Cellular Cohesion and Compaction of In Vitro and Root Biofilms Developed by <i>Rhizobium leguminosarum</i> . <i>Applied and Environmental Microbiology</i> , 2015, 81, 1013-1023.	3.1	22
90	Calcium signals in plant immunity: a spiky issue. <i>New Phytologist</i> , 2014, 204, 733-735.	7.3	21

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91	Lessons from Fraxinus, a crowd-sourced citizen science game in genomics. <i>ELife</i> , 2015, 4, e07460.	6.0	21
92	Arabinose and protocatechuate catabolism genes are important for growth of <i>Rhizobium leguminosarum</i> biovar <i>viciae</i> in the pea rhizosphere. <i>Plant and Soil</i> , 2015, 390, 251-264.	3.7	20
93	What Makes the Rhizobia-Legume Symbiosis So Special?. <i>Plant Physiology</i> , 2001, 127, 1484-1492.	4.8	19
94	Nonlinear Time Series Analysis of Nodulation Factor Induced Calcium Oscillations: Evidence for Deterministic Chaos?. <i>PLoS ONE</i> , 2009, 4, e6637.	2.5	18
95	CERBERUS is critical for stabilization of VAPYRIN during rhizobial infection in <i>Lotus japonicus</i> . <i>New Phytologist</i> , 2021, 229, 1684-1700.	7.3	15
96	Manganese transport is essential for N <sub>2</sub> -fixation by <i>Rhizobium leguminosarum</i> in bacteroids from galeoid but not phaseoloid nodules. <i>Environmental Microbiology</i> , 2017, 19, 2715-2726.	3.8	14
97	Why Should Nodule Cysteine-Rich (NCR) Peptides Be Absent From Nodules of Some Groups of Legumes but Essential for Symbiotic N-Fixation in Others?. <i>Frontiers in Agronomy</i> , 2021, 3, .	3.3	13
98	MgtE From <i>Rhizobium leguminosarum</i> Is a Mg <sup>2+</sup> Channel Essential for Growth at Low pH and N <sub>2</sub> Fixation on Specific Plants. <i>Molecular Plant-Microbe Interactions</i> , 2015, 28, 1281-1287.	2.6	12
99	Characterization of the quaternary amine transporters of <i>Rhizobium leguminosarum</i> bv. <i>viciae</i> 3841. <i>FEMS Microbiology Letters</i> , 2008, 287, 212-220.	1.8	11
100	Crystallization and preliminary diffraction studies of NodL, a rhizobial O <sub>6</sub> -acetyltransferase involved in the host-specific nodulation of legume roots. <i>Protein Science</i> , 1996, 5, 538-541.	7.6	8
101	PLANT SCIENCE: Infectious Heresy. <i>Science</i> , 2007, 316, 1296-1297.	12.6	7
102	Cell-to-Cell Communication in Rhizobia: Quorum Sensing and Plant Signaling. , 0, , 213-232.		7
103	Isolation of a DNA polymerase I (polA) mutant of <i>Rhizobium leguminosarum</i> that has significantly reduced levels of an IncQ-group plasmid. <i>Molecular Genetics and Genomics</i> , 1994, 243, 119-123.	2.4	6
104	Ash dieback epidemic in Europe: How can molecular technologies help?. <i>PLoS Pathogens</i> , 2017, 13, e1006381.	4.7	5
105	News & Notes: Primary Structure of the DNA Polymerase I Gene of an $\alpha$ -Proteobacterium, <i>Rhizobium leguminosarum</i> , and Comparison with Other Family A DNA Polymerases. <i>Current Microbiology</i> , 1999, 38, 355-359.	2.2	3
106	Plant-Microorganism Symbiosis. , 1999, , 211-230.		1
107	Nitrogen fixation symposium: Molecular genetics: out of the laboratory into the field. <i>Nature</i> , 1983, 306, 639-639.	27.8	0
108	A Eulogy to Adam Kondorosi. <i>Molecular Plant-Microbe Interactions</i> , 2011, 24, 1272-1275.	2.6	0

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109	Genetics of the Adenosine Triphosphatase Complex of <i>Escherichia coli.</i> , 1982, , 453-457.		0
110	A Nod of recognition: How the ups and downs of Ca <sup>2+</sup> lead to nodule development during the initiation of rhizobial-legume symbioses. <i>Biochemist</i> , 2014, 36, 4-7.	0.5	0
111	Quorum-Sensing Regulation in <i>Rhizobium leguminosarum</i> biovar <i>viciae</i> . <i>Agronomy</i> , 0, , 223-232.	0.2	0