Manuel Becana

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/2913673/publications.pdf

Version: 2024-02-01

99

papers

6,526

citations

61857

43

h-index

66788

78

g-index

101

all docs

101

docs citations

101

times ranked

5276

citing authors

#	ARTICLE	IF	CITATIONS
1	Drought induces oxidative stress in pea plants. Planta, 1994, 194, 346.	1.6	486
2	Oxidative Damage in Pea Plants Exposed to Water Deficit or Paraquat1. Plant Physiology, 1998, 116, 173-181.	2.3	389
3	Complexes of Iron with Phenolic Compounds from Soybean Nodules and Other Legume Tissues: Prooxidant and Antioxidant Properties. Free Radical Biology and Medicine, 1997, 22, 861-870.	1.3	315
4	Title is missing!. Plant and Soil, 1998, 201, 137-147.	1.8	268
5	Some Enzymes of Hydrogen Peroxide Metabolism in Leaves and Root Nodules of <i>Medicago sativa</i>. Plant Physiology, 1986, 82, 1169-1171.	2.3	227
6	The Response of Carbon Metabolism and Antioxidant Defenses of Alfalfa Nodules to Drought Stress and to the Subsequent Recovery of Plants. Plant Physiology, 2007, 144, 1104-1114.	2.3	210
7	Reactive oxygen species and antioxidants in legume nodules. Physiologia Plantarum, 2000, 109, 372-381.	2.6	206
8	Biochemistry and Molecular Biology of Antioxidants in the Rhizobia-Legume Symbiosis Â Â. Plant Physiology, 2003, 133, 499-509.	2.3	192
9	Antioxidant Defenses against Activated Oxygen in Pea Nodules Subjected to Water Stress. Plant Physiology, 1995, 108, 753-759.	2.3	177
10	Stress-Induced Legume Root Nodule Senescence. Physiological, Biochemical, and Structural Alterations. Plant Physiology, 1999, 121, 97-112.	2.3	166
11	Recent insights into antioxidant defenses of legume root nodules. New Phytologist, 2010, 188, 960-976.	3.5	147
12	Effects of water stress on antioxidant enzymes of leaves and nodules of transgenic alfalfa overexpressing superoxide dismutases. Physiologia Plantarum, 2002, 115, 531-540.	2.6	141
13	Activated oxygen and antioxidant defences in iron-deficient pea plants. Plant, Cell and Environment, 1995, 18, 421-429.	2.8	124
14	Localization of Superoxide Dismutases and Hydrogen Peroxide in Legume Root Nodules. Molecular Plant-Microbe Interactions, 2004, 17, 1294-1305.	1.4	115
15	Glutathione and Homoglutathione Synthesis in Legume Root Nodules. Plant Physiology, 1999, 121, 879-888.	2.3	111
16	N2 Fixation, Carbon Metabolism, and Oxidative Damage in Nodules of Dark-Stressed Common Bean Plants. Plant Physiology, 1997, 113, 1193-1201.	2.3	107
17	Nitrogen fixation and nitrate reduction in the root nodules of legumes. Physiologia Plantarum, 1987, 70, 757-765.	2.6	99
18	Effects of salt stress on the expression of antioxidant genes and proteins in the model legume <i>Lotus japonicus</i>. New Phytologist, 2009, 181, 851-859.	3.5	95

#	Article	IF	Citations
19	Knocking Out Cytosolic Cysteine Synthesis Compromises the Antioxidant Capacity of the Cytosol to Maintain Discrete Concentrations of Hydrogen Peroxide in Arabidopsis Â. Plant Physiology, 2008, 147, 562-572.	2.3	92
20	Phytochelatin Synthases of the Model Legume Lotus japonicus. A Small Multigene Family with Differential Response to Cadmium and Alternatively Spliced Variants. Plant Physiology, 2007, 143, 1110-1118.	2.3	91
21	Antioxidant Defenses in the Peripheral Cell Layers of Legume Root Nodules1. Plant Physiology, 1998, 116, 37-43.	2.3	89
22	Transition metals in legume root nodules: iron-dependent free radical production increases during nodule senescence.. Proceedings of the National Academy of Sciences of the United States of America, 1992, 89, 8958-8962.	3.3	86
23	Glutathione and Homoglutathione Synthetases of Legume Nodules. Cloning, Expression, and Subcellular Localization. Plant Physiology, 2000, 124, 1381-1392.	2.3	83
24	Leghemoglobin green derivatives with nitrated hemes evidence production of highly reactive nitrogen species during aging of legume nodules. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 2660-2665.	3.3	81
25	Involvement of Activated Oxygen in Nitrate-Induced Senescence of Pea Root Nodules. Plant Physiology, 1996, 110, 1187-1195.	2.3	80
26	Functional Characterization and Expression of a Cytosolic Iron-Superoxide Dismutase from Cowpea Root Nodules,. Plant Physiology, 2003, 133, 773-782.	2.3	74
27	Ascorbate and Homoglutathione Metabolism in Common Bean Nodules under Stress Conditions and during Natural Senescence Â Â. Plant Physiology, 2008, 146, 1282-1292.	2.3	73
28	Regulation of nonsymbiotic and truncated hemoglobin genes of <i>Lotus japonicus</i> in plant organs and in response to nitric oxide and hormones. New Phytologist, 2011, 189, 765-776.	3.5	71
29	Leghemoglobin is nitrated in functional legume nodules in a tyrosine residue within the heme cavity by a nitrite/peroxideâ€dependent mechanism. Plant Journal, 2015, 81, 723-735.	2.8	70
30	Oxidative stress is a consequence, not a cause, of aluminum toxicity in the forage legume <i>Lotus corniculatus</i>. New Phytologist, 2012, 193, 625-636.	3.5	66
31	CRISPR/Cas9 knockout of leghemoglobin genes in <i>Lotus japonicus</i> uncovers their synergistic roles in symbiotic nitrogen fixation. New Phytologist, 2019, 224, 818-832.	3.5	64
32	The Antioxidants of Legume Nodule Mitochondria. Molecular Plant-Microbe Interactions, 2001, 14, 1189-1196.	1.4	57
33	Oxidation and Reduction of Leghemoglobin in Root Nodules of Leguminous Plants. Plant Physiology, 1992, 98, 1217-1221.	2.3	56
34	The glutathione peroxidase gene family of <i>Lotus japonicus</i>: characterization of genomic clones, expression analyses and immunolocalization in legumes. New Phytologist, 2009, 181, 103-114.	3.5	56
35	Function of antioxidant enzymes and metabolites during maturation of pea fruits. Journal of Experimental Botany, 2010, 61, 87-97.	2.4	54
36	Biosynthesis of Ascorbic Acid in Legume Root Nodules. Plant Physiology, 2006, 141, 1068-1077.	2.3	53

#	ARTICLE	IF	CITATIONS
37	Plant hemoglobins: a journey from unicellular green algae to vascular plants. New Phytologist, 2020, 227, 1618-1635.	3.5	52
38	Sulfur Transport and Metabolism in Legume Root Nodules. Frontiers in Plant Science, 2018, 9, 1434.	1.7	49
39	Short-term inhibition of legume N2 fixation by nitrate. Planta, 1989, 180, 40-45.	1.6	47
40	Protein Carbonylation and Glycation in Legume Nodules. Plant Physiology, 2018, 177, 1510-1528.	2.3	47
41	Short-term inhibition of legume N2 fixation by nitrate. Planta, 1989, 180, 46-52.	1.6	46
42	The crystal structure of an eukaryotic iron superoxide dismutase suggests intersubunit cooperation during catalysis. Protein Science, 2005, 14, 387-394.	3.1	46
43	Characterization of Genomic Clones and Expression Analysis of the Three Types of Superoxide Dismutases During Nodule Development in Lotus japonicus. Molecular Plant-Microbe Interactions, 2007, 20, 262-275.	1.4	46
44	Mitochondria are an early target of oxidative modifications in senescing legume nodules. New Phytologist, 2013, 197, 873-885.	3.5	46
45	A Reassessment of Substrate Specificity and Activation of Phytochelatin Synthases from Model Plants by Physiologically Relevant Metals. Plant Physiology, 2006, 140, 1213-1221.	2.3	45
46	Plant hemoglobins may be maintained in functional form by reduced flavins in the nuclei, and confer differential tolerance to nitroâ€oxidative stress. Plant Journal, 2013, 76, 875-887.	2.8	44
47	Function of glutathione peroxidases in legume root nodules. Journal of Experimental Botany, 2015, 66, 2979-2990.	2.4	44
48	Enzymatic and nonenzymatic mechanisms for ferric leghemoglobin reduction in legume root nodules.. Proceedings of the National Academy of Sciences of the United States of America, 1990, 87, 7295-7299.	3.3	43
49	Molecular Analysis of the Pathway for the Synthesis of Thiol Tripeptides in the Model Legume Lotus japonicus. Molecular Plant-Microbe Interactions, 2003, 16, 1039-1046.	1.4	41
50	Functional Characterization of an Unusual Phytochelatin Synthase, LjPCS3, of <i>Lotus japonicus</i>. Plant Physiology, 2008, 148, 536-545.	2.3	41
51	Hemoglobin LjGlb1-1 is involved in nodulation and regulates the level of nitric oxide in the<i>Lotus japonicusâ€"Mesorhizobium loti</i>symbiosis. Journal of Experimental Botany, 2016, 67, 5275-5283.	2.4	41
52	Nitrate and nitrite reduction by alfalfa root nodules: Accumulation of nitrite in Rhizobium melioti bacteroids and senescence of nodules. Physiologia Plantarum, 1985, 64, 353-358.	2.6	40
53	Isoenzymes of Superoxide Dismutase in Nodules of <i>Phaseolus vulgaris</i> L., <i>Pisum sativum</i> L., and <i>Vigna unguiculata</i> (L.) Walp.. Plant Physiology, 1989, 90, 1286-1292.	2.3	40
54	Genetics of nodulation in Aeschynomene evenia uncovers mechanisms of the rhizobiumâ€"legume symbiosis. Nature Communications, 2021, 12, 829.	5.8	38

#	ARTICLE	IF	CITATIONS
55	Peroxiredoxins and NADPH-Dependent Thioredoxin Systems in the Model Legume <i>Lotus japonicus</i> Â Â Â. Plant Physiology, 2011, 156, 1535-1547.	2.3	37
56	Stably Transformed<i>Lotus japonicus</i>Plants Overexpressing Phytoglobin LjGlb1-1 Show Decreased Nitric Oxide Levels in Roots and Nodules as Well as Delayed Nodule Senescence. Plant and Cell Physiology, 2019, 60, 816-825.	1.5	37
57	Thiol-based redox signaling in the nitrogen-fixing symbiosis. Frontiers in Plant Science, 2013, 4, 376.	1.7	36
58	Nitrate and nitrite reduction in the plant fraction of alfalfa root nodules. Physiologia Plantarum, 1985, 65, 185-188.	2.6	35
59	Protective mechanisms of nitrogenase against oxygen excess and partially-reduced oxygen intermediates. Physiologia Plantarum, 1989, 75, 429-438.	2.6	33
60	Hemoglobins in the legumeâ€“<i>Rhizobium </i>symbiosis. New Phytologist, 2020, 228, 472-484.	3.5	33
61	N2Fixation (C2H2-Reducing Activity) and Leghaemoglobin Content during Nitrate- and Water-Stress-Induced Senescence ofMedicago sativaRoot Nodules. Journal of Experimental Botany, 1986, 37, 597-605.	2.4	32
62	Redefining nitric oxide production in legume nodules through complementary insights from electron paramagnetic resonance spectroscopy and specific fluorescent probes. Journal of Experimental Botany, 2018, 69, 3703-3714.	2.4	32
63	Purification and Characterization of Soybean Root Nodule Ferric Leghemoglobin Reductase. Plant Physiology, 1991, 96, 32-37.	2.3	30
64	Sulfate is transported at significant rates through the symbiosome membrane and is crucial for nitrogenase biosynthesis. Plant, Cell and Environment, 2019, 42, 1180-1189.	2.8	29
65	Increased Stress Tolerance of Nodule Activity in the Medicago-Rhizobium-Glomus Symbiosis Under Drought. Journal of Plant Physiology, 1988, 133, 79-83.	1.6	28
66	Immunolocalization of antioxidant enzymes in highâ€pressure frozen root and stem nodules of <i>Sesbania rostrata</i>. New Phytologist, 2009, 183, 395-407.	3.5	28
67	Phytoglobins in the nuclei, cytoplasm and chloroplasts modulate nitric oxide signaling and interact with abscisic acid. Plant Journal, 2019, 100, 38-54.	2.8	28
68	Molecular responses of legumes to abiotic stress: post-translational modifications of proteins and redox signaling. Journal of Experimental Botany, 2021, 72, 5876-5892.	2.4	26
69	Cloning and Sequence Analysis of a cDNA Encoding Ferric Leghemoglobin Reductase from Soybean Nodules. Plant Physiology, 1994, 104, 453-459.	2.3	25
70	Molecular Cloning, Functional Characterization, and Subcellular Localization of Soybean Nodule Dihydrolipoamide Reductase,. Plant Physiology, 2002, 128, 300-313.	2.3	25
71	Altered Plant and Nodule Development and Protein S-Nitrosylation in Lotus japonicus Mutants Deficient in S-Nitrosoglutathione Reductases. Plant and Cell Physiology, 2020, 61, 105-117.	1.5	25
72	Characterization of phenolic glucosides from soybean root nodules by ion-exchange high performance liquid chromatography, ultraviolet spectroscopy and electrospray mass spectrometry. Phytochemical Analysis, 1998, 9, 171-176.	1.2	24

#	ARTICLE	IF	CITATIONS
73	Effect of Nitrate on Components of Nodule Leghaemoglobins. Journal of Experimental Botany, 1989, 40, 725-731.	2.4	23
74	Superoxide dismutases in nodules of leguminous plants. Canadian Journal of Botany, 1989, 67, 415-421.	1.2	22
75	Thiol synthetases of legumes: immunogold localization and differential gene regulation by phytohormones. Journal of Experimental Botany, 2012, 63, 3923-3934.	2.4	22
76	Nitrogen Fixation and Leghemoglobin Content during Vegetative Growth of Alfalfa. Journal of Plant Physiology, 1986, 123, 117-125.	1.6	21
77	Expression Studies of Superoxide Dismutases in Nodules and Leaves of Transgenic Alfalfa Reveal Abundance of Iron-Containing Isozymes, Posttranslational Regulation, and Compensation of Isozyme Activities. Molecular Plant-Microbe Interactions, 2001, 14, 1178-1188.	1.4	21
78	Nitrate and hydrogen peroxide metabolism in Medicago sativa nodules and possible effect on leghaemoglobin function. Physiologia Plantarum, 1988, 72, 755-761.	2.6	20
79	Overproduction in Escherichia coli and Characterization of a Soybean Ferric Leghemoglobin Reductase. Plant Physiology, 1994, 106, 203-209.	2.3	18
80	Characteristics of Modified Leghemoglobins Isolated from Soybean (Glycine max Merr.) Root Nodules. Plant Physiology, 1994, 104, 1231-1236.	2.3	18
81	Cloning and functional characterization of a homoglutathione synthetase from pea nodules. Physiologia Plantarum, 2002, 115, 69-73.	2.6	17
82	Effects of water stress on enzymes of ammonia assimilation in root nodules of alfalfa (Medicago) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 3	2.6	15
83	Flavin-mediated reduction of ferric leghemoglobin from soybean nodules. Planta, 1991, 183, 575-83.	1.6	15
84	Single cellâ€•type transcriptome profiling reveals genes that promote nitrogen fixation in the infected and uninfected cells of legume nodules. Plant Biotechnology Journal, 2022, 20, 616-618.	4.1	15
85	Characterization of the Heme Pocket Structure and Ligand Binding Kinetics of Non-symbiotic Hemoglobins from the Model Legume Lotus japonicus. Frontiers in Plant Science, 2017, 8, 407.	1.7	11
86	Root Nodule Enzymes of Ammonia Metabolism from Medicago sativa L. as Influenced by Nitrate Levels. Journal of Plant Physiology, 1984, 116, 285-292.	1.6	10
87	Involvement of Molecular Oxygen in the Enzyme-Catalyzed NADH Oxidation and Ferric Leghemoglobin Reduction. Plant Physiology, 1992, 100, 33-39.	2.3	10
88	Levels of Ammonia, Nitrite, and Nitrate in Alfalfa Root Nodules Supplied With Nitrate. Journal of Plant Physiology, 1985, 119, 359-367.	1.6	8
89	Nitrate Metabolism in Alfalfa Root Nodules under Water Stress. Journal of Experimental Botany, 1986, 37, 798-806.	2.4	8
90	Crystallization and preliminary X-ray diffraction studies of the eukaryotic iron superoxide dismutase (FeSOD) fromVigna unguiculata. Acta Crystallographica Section D: Biological Crystallography, 2003, 59, 1070-1072.	2.5	8

#	ARTICLE	IF	CITATIONS
91	A Plant Gene Encoding One-Heme and Two-Heme Hemoglobins With Extreme Reactivities Toward Diatomic Gases and Nitrite. Frontiers in Plant Science, 2020, 11, 600336.	1.7	8
92	Redox control of the legume-Rhizobium symbiosis. Advances in Botanical Research, 2020, 94, 67-96.	0.5	6
93	Molecular cloning, functional characterization, and subcellular localization of soybean nodule dihydrolipoamide reductase. Plant Physiology, 2002, 128, 300-13.	2.3	6
94	Molecular Cloning, Functional Characterization, and Subcellular Localization of Soybean Nodule Dihydrolipoamide Reductase. Plant Physiology, 2002, 128, 300-313.	2.3	4
95	Three classes of hemoglobins are required for optimal vegetative and reproductive growth of <i>Lotus japonicus</i>: genetic and biochemical characterization of LjGlb2-1. Journal of Experimental Botany, 2021, 72, 7778-7791.	2.4	4
96	Ascorbate Metabolism and Nitrogen Fixation in Legumes. , 2017, , 471-490.		1
97	Reactive Oxygen/Nitrogen Species and Antioxidant Defenses in Lotus japonicus. Compendium of Plant Genomes, 2014, , 137-147.	0.3	1
98	Unusually Fast bis-Histidyl Coordination in a Plant Hemoglobin. International Journal of Molecular Sciences, 2021, 22, 2740.	1.8	0
99	Crystal structure of eukaryotic FeSODs suggests intersubunit cooperation during catalysis. Acta Crystallographica Section A: Foundations and Advances, 2005, 61, c212-c213.	0.3	0