Alice Barkan

List of Publications by Year
in descending order

98 papers	9,649 citations	34105 52 h-index	38395 95 g-index
104 all docs	104 docs citations	104 times ranked	6106 citing authors

#	Article	IF	Citations
1	Pentatricopeptide Repeat Proteins in Plants. Annual Review of Plant Biology, 2014, 65, 415-442.	18.7	842
2	Redesigning photosynthesis to sustainably meet global food and bioenergy demand. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8529-8536.	7.1	751
3	A Combinatorial Amino Acid Code for RNA Recognition by Pentatricopeptide Repeat Proteins. PLoS Genetics, 2012, 8, e1002910.	3.5	455
4	Site-specific binding of a PPR protein defines and stabilizes 5â€² and 3â€² mRNA termini in chloroplasts. EMBO Journal, 2009, 28, 2042-2052.	7.8	302
5	Participation of nuclear genes in chloroplast gene expression. Biochimie, 2000, 82, 559-572.	2.6	295
6	Mechanism of RNA stabilization and translational activation by a pentatricopeptide repeat protein. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 415-420.	7.1	262
7	Expression of Plastid Genes: Organelle-Specific Elaborations on a Prokaryotic Scaffold. Plant Physiology, 2011, 155, 1520-1532.	4.8	258
8	A Pentatricopeptide Repeat Protein Facilitates the trans-Splicing of the Maize Chloroplast rps12 Pre-mRNA. Plant Cell, 2006, 18, 2650-2663.	6.6	249
9	Molecular cloning of the maize gene crp1 reveals similarity between regulators of mitochondrial and chloroplast gene expression. EMBO Journal, 1999, 18, 2621-2630.	7.8	238
10	RNA Immunoprecipitation and Microarray Analysis Show a Chloroplast Pentatricopeptide Repeat Protein to Be Associated with the 5â€² Region of mRNAs Whose Translation It Activates. Plant Cell, 2005, 17, 2791-2804.	6.6	235
11	Nucleoid-Enriched Proteomes in Developing Plastids and Chloroplasts from Maize Leaves: A New Conceptual Framework for Nucleoid Functions Â Â Â. Plant Physiology, 2012, 158, 156-189.	4.8	216
12	The Pentatricopeptide Repeat Protein PPR5 Stabilizes a Specific tRNA Precursor in Maize Chloroplasts. Molecular and Cellular Biology, 2008, 28, 5337-5347.	2.3	162
13	A member of the Whirly family is a multifunctional RNA- and DNA-binding protein that is essential for chloroplast biogenesis. Nucleic Acids Research, 2008, 36, 5152-5165.	14.5	154
14	A chloroplast-localized PPR protein required for plastid ribosome accumulation. Plant Journal, 2003, 36, 675-686.	5.7	148
15	Group II intron splicing factors derived by diversification of an ancient RNA-binding domain. EMBO Journal, 2003, 22, 3919-3929.	7.8	135
16	Use of Illumina sequencing to identify transposon insertions underlying mutant phenotypes in high-copy Mutator lines of maize. Plant Journal, 2010, 63, no-no.	5.7	131
17	An RNA recognition motif-containing protein is required for plastid RNA editing in <i>Arabidopsis</i> and maize. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E1169-78.	7.1	131
18	Genetics and genomics of chloroplast biogenesis: maize as a model system. Trends in Plant Science, 2004, 9, 293-301.	8.8	124

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19	Chloroplast RH3 DEAD Box RNA Helicases in Maize and Arabidopsis Function in Splicing of Specific Group II Introns and Affect Chloroplast Ribosome Biogenesis Â Â. Plant Physiology, 2012, 159, 961-974.	4.8	122
20	A Rapid Ribosome Profiling Method Elucidates Chloroplast Ribosome Behavior in Vivo Â. Plant Cell, 2013, 25, 2265-2275.	6.6	122
21	Dynamics of Chloroplast Translation during Chloroplast Differentiation in Maize. PLoS Genetics, 2016, 12, e1006106.	3.5	121
22	CRS1 is a novel group II intron splicing factor that was derived from a domain of ancient origin. Rna, 2001, 7, 1227-1238.	3.5	119
23	A plant-specific RNA-binding domain revealed through analysis of chloroplast group II intron splicing. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 4537-4542.	7.1	116
24	Protein-mediated protection as the predominant mechanism for defining processed mRNA termini in land plant chloroplasts. Nucleic Acids Research, 2012, 40, 3092-3105.	14.5	116
25	The maize plastid psbB-psbF-petB-petD gene cluster: spliced and unspliced petB and petD RNAs encode alternative products. Current Genetics, 1987, 12, 69-77.	1.7	112
26	[4] Approaches to investigating nuclear genes that function in chloroplast biogenesis in land plants. Methods in Enzymology, 1998, , 38-57.	1.0	109
27	Arabidopsis Orthologs of Maize Chloroplast Splicing Factors Promote Splicing of Orthologous and Species-Specific Group II Introns. Plant Physiology, 2006, 142, 1656-1663.	4.8	108
28	RNA processing and decay in plastids. Wiley Interdisciplinary Reviews RNA, 2013, 4, 295-316.	6.4	102
29	A Ribonuclease III Domain Protein Functions in Group II Intron Splicing in Maize Chloroplasts. Plant Cell, 2007, 19, 2606-2623.	6.6	100
30	A PORR domain protein required for <i>rpl2</i> and <i>ccmF</i>_{<i>C</i>} intron splicing and for the biogenesis of <i>c</i>â€type cytochromes in Arabidopsis mitochondria. Plant Journal, 2012, 69, 996-1005.	5.7	99
31	The CRM domain: An RNA binding module derived from an ancient ribosome-associated protein. Rna, 2006, 13, 55-64.	3.5	98
32	Sequence-specific binding of a chloroplast pentatricopeptide repeat protein to its native group II intron ligand. Rna, 2008, 14, 1930-1941.	3.5	97
33	Ribulose-1,5-Bis-Phosphate Carboxylase/Oxygenase Accumulation Factor1 Is Required for Holoenzyme Assembly in Maize. Plant Cell, 2012, 24, 3435-3446.	6.6	97
34	A SecY Homologue Is Required for the Elaboration of the Chloroplast Thylakoid Membrane and for Normal Chloroplast Gene Expression. Journal of Cell Biology, 1998, 141, 385-395.	5.2	93
35	Transcriptional and post-transcriptional control of plastid mRNA levels in higher plants. Trends in Genetics, 1988, 4, 258-263.	6.7	92
36	CRS1, a Chloroplast Group II Intron Splicing Factor, Promotes Intron Folding through Specific Interactions with Two Intron Domains. Plant Cell, 2005, 17, 241-255.	6.6	92

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37	RNA binding and RNA remodeling activities of the half-a-tetratricopeptide (HAT) protein HCF107 underlie its effects on gene expression. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 5651-5656.	7.1	88
38	A short PPR protein required for the splicing of specific group II introns in angiosperm chloroplasts. Rna, 2012, 18, 1197-1209.	3.5	88
39	An mTERF domain protein functions in group II intron splicing in maize chloroplasts. Nucleic Acids Research, 2014, 42, 5033-5042.	14.5	86
40	A CRM Domain Protein Functions Dually in Group I and Group II Intron Splicing in Land Plant Chloroplasts. Plant Cell, 2008, 19, 3864-3875.	6.6	85
41	The Maize tha4 Gene Functions in Sec-Independent Protein Transport in Chloroplasts and Is Related to hcf106, tatA, and tatB. Journal of Cell Biology, 1999, 147, 267-276.	5.2	83
42	Nuclear Mutants of Maize with Defects in Chloroplast Polysome Assembly Have Altered Chloroplast RNA Metabolism. Plant Cell, 1993, 5, 389.	6.6	81
43	Transposon-Disruption of a Maize Nuclear Gene, <i>tha1</i>, Encoding a Chloroplast SecA Homologue: <i>In Vivo</i> Role of cp-SecA in Thylakoid Protein Targeting. Genetics, 1997, 145, 467-478.	2.9	78
44	Maize Mutants Lacking Chloroplast FtsY Exhibit Pleiotropic Defects in the Biogenesis of Thylakoid Membranes[W]. Plant Cell, 2004, 16, 201-214.	6.6	69
45	Large-scale genetic analysis of chloroplast biogenesis in maize. Biochimica Et Biophysica Acta - Bioenergetics, 2015, 1847, 1004-1016.	1.0	68
46	Multilevel effects of light on ribosome dynamics in chloroplasts program genome-wide and psbA-specific changes in translation. PLoS Genetics, 2018, 14, e1007555.	3.5	67
47	PPR8522 encodes a chloroplast-targeted pentatricopeptide repeat protein necessary for maize embryogenesis and vegetative development. Journal of Experimental Botany, 2012, 63, 5843-5857.	4.8	66
48	A Nuclear Gene in Maize Required for the Translation of the Chloroplast atpB/E mRNA. Plant Cell, 1999, 11, 1709-1716.	6.6	64
49	A Thylakoid Membrane Protein Harboring a DnaJ-type Zinc Finger Domain Is Required for Photosystem I Accumulation in Plants. Journal of Biological Chemistry, 2014, 289, 30657-30667.	3.4	64
50	The pentatricopeptide repeatâ€SMR protein ATP4 promotes translation of the chloroplast <i>atpB</i>/<i>E</i> mRNA. Plant Journal, 2012, 72, 547-558.	5.7	63
51	The <scp>PPR</scp>â€<scp>SMR</scp> protein <scp>PPR</scp>53 enhances the stability and translation of specific chloroplast <scp>RNA</scp>s in maize. Plant Journal, 2016, 85, 594-606.	5.7	63
52	Two CRM protein subfamilies cooperate in the splicing of group IIB introns in chloroplasts. Rna, 2008, 14, 2319-2332.	3.5	62
53	Genome-wide analysis of thylakoid-bound ribosomes in maize reveals principles of cotranslational targeting to the thylakoid membrane. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1678-87.	7.1	62
54	Effects of Reduced Chloroplast Gene Copy Number on Chloroplast Gene Expression in Maize Â Â. Plant Physiology, 2012, 160, 1420-1431.	4.8	60

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55	A protein with an inactive pterinâ€4aâ€carbinolamine dehydratase domain is required for Rubisco biogenesis in plants. Plant Journal, 2014, 80, 862-869.	5.7	58
56	The solution structure of the pentatricopeptide repeat protein PPR10 upon binding atpH RNA. Nucleic Acids Research, 2015, 43, 1918-1926.	14.5	56
57	Codon Optimization to Enhance Expression Yields Insights into Chloroplast Translation. Plant Physiology, 2016, 172, 62-77.	4.8	51
58	APO1 Promotes the Splicing of Chloroplast Group II Introns and Harbors a Plant-Specific Zinc-Dependent RNA Binding Domain. Plant Cell, 2011, 23, 1082-1092.	6.6	50
59	Engineered PPR proteins as inducible switches to activate the expression of chloroplast transgenes. Nature Plants, 2019, 5, 505-511.	9.3	49
60	Zmp TAC 12 binds singleâ€stranded nucleic acids and is essential for accumulation of the plastidâ€encoded polymerase complex inÂmaize. New Phytologist, 2015, 206, 1024-1037.	7.3	48
61	Light-induced <i>psbA</i> translation in plants is triggered by photosystem II damage via an assembly-linked autoregulatory circuit. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 21775-21784.	7.1	48
62	A Major Role for the Plastid-Encoded RNA Polymerase Complex in the Expression of Plastid Transfer RNAs Â Â. Plant Physiology, 2014, 164, 239-248.	4.8	46
63	A PPR protein in the PLS subfamily stabilizes the 5â€²-end of processed<i>rpl16</i>mRNAs in maize chloroplasts. Nucleic Acids Research, 2016, 44, 4278-4288.	14.5	45
64	RNA-binding specificity landscapes of designer pentatricopeptide repeat proteins elucidate principles of PPRâ€“RNA interactions. Nucleic Acids Research, 2018, 46, 2613-2623.	14.5	45
65	Ribonucleoprotein Capture by in Vivo Expression of a Designer Pentatricopeptide Repeat Protein in Arabidopsis. Plant Cell, 2019, 31, 1723-1733.	6.6	45
66	Genetic analysis of chloroplast biogenesis in higher plants. Physiologia Plantarum, 1995, 93, 163-170.	5.2	44
67	Structural Analysis of the Group II Intron Splicing Factor CRS2 Yields Insights into its Protein and RNA Interaction Surfaces. Journal of Molecular Biology, 2005, 345, 51-68.	4.2	41
68	Stabilization and translation of synthetic operonâ€derived <scp>mRNA</scp>s in chloroplasts by sequences representing <scp>PPR</scp> proteinâ€binding sites. Plant Journal, 2018, 94, 8-21.	5.7	40
69	Genome-Wide Analysis of RNA-Protein Interactions in Plants. Methods in Molecular Biology, 2009, 553, 13-37.	0.9	38
70	Unexpected functional versatility of the pentatricopeptide repeat proteins PGR3, PPR5 and PPR10. Nucleic Acids Research, 2018, 46, 10448-10459.	14.5	37
71	Engineered RNA-binding protein for transgene activation in non-green plastids. Nature Plants, 2019, 5, 486-490.	9.3	36
72	RNA-binding specificity landscape of the pentatricopeptide repeat protein PPR10. Rna, 2017, 23, 586-599.	3.5	35

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73	Formation of the CRS2-CAF2 Group II Intron Splicing Complex Is Mediated by a 22-Amino Acid Motif in the COOH-terminal Region of CAF2. Journal of Biological Chemistry, 2006, 281, 4732-4738.	3.4	33
74	required to maintain repression2 Is a Novel Protein That Facilitates Locus-Specific Paramutation in Maize. Plant Cell, 2012, 24, 1761-1775.	6.6	33
75	Nuclear genes required for post-translational steps in the biogenesis of the chloroplast cytochrome b 6 f complex in maize. Molecular Genetics and Genomics, 1995, 249, 507-514.	2.4	32
76	Crystal Structure of E. coli YhbY. Structure, 2002, 10, 1593-1601.	3.3	31
77	POGs/PlantRBP: a resource for comparative genomics in plants. Nucleic Acids Research, 2007, 35, D852-D856.	14.5	31
78	PSA3, a Protein on the Stromal Face of the Thylakoid Membrane, Promotes Photosystem I Accumulation in Cooperation with the Assembly Factor PYG7. Plant Physiology, 2017, 174, 1850-1862.	4.8	31
79	The Arabidopsis pentatricopeptide repeat protein LPE1 and its maize ortholog are required for translation of the chloroplast <i>psbJ</i> RNA. Plant Journal, 2019, 99, 56-66.	5.7	31
80	Dynamic localization of SPO11-1 and conformational changes of meiotic axial elements during recombination initiation of maize meiosis. PLoS Genetics, 2020, 16, e1007881.	3.5	28
81	Exploring the Link between Photosystem II Assembly and Translation of the Chloroplast psbA mRNA. Plants, 2020, 9, 152.	3.5	26
82	Nuclear Mutations That Block Group II RNA Splicing in Maize Chloroplasts Reveal Several Intron Classes with Distinct Requirements for Splicing Factors. Plant Cell, 1997, 9, 283.	6.6	25
83	An RNA Chaperoneâ€"Like Protein Plays Critical Roles in Chloroplast mRNA Stability and Translation in Arabidopsis and Maize. Plant Cell, 2019, 31, 1308-1327.	6.6	25
84	Duplication and Suppression of Chloroplast Protein Translocation Genes in Maize. Genetics, 2001, 157, 349-360.	2.9	25
85	Translation and Co-translational Membrane Engagement of Plastid-encoded Chlorophyll-binding Proteins Are Not Influenced by Chlorophyll Availability in Maize. Frontiers in Plant Science, 2017, 8, 385.	3.6	22
86	Studying the Structure and Processing of Chloroplast Transcripts. Methods in Molecular Biology, 2011, 774, 183-197.	0.9	21
87	Ribosome Profiling in Maize. Methods in Molecular Biology, 2018, 1676, 165-183.	0.9	20
88	The PPR-SMR Protein ATP4 Is Required for Editing the Chloroplast <i>rps8</i> mRNA in Rice and Maize. Plant Physiology, 2020, 184, 2011-2021.	4.8	20
89	Exploring the proteome associated with the mRNA encoding the D1 reaction center protein of Photosystem II in plant chloroplasts. Plant Journal, 2020, 102, 369-382.	5.7	19
90	POGs2: A Web Portal to Facilitate Cross-Species Inferences About Protein Architecture and Function in Plants. PLoS ONE, 2013, 8, e82569.	2.5	19

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91	Effects of RNA structure and salt concentration on the affinity and kinetics of interactions between pentatricopeptide repeat proteins and their RNA ligands. PLoS ONE, 2018, 13, e0209713.	2.5	18
92	<i>In vivo</i> stabilization of endogenous chloroplast RNAs by customized artificial pentatricopeptide repeat proteins. Nucleic Acids Research, 2021, 49, 5985-5997.	14.5	14
93	Efficient Replication of the Plastid Genome Requires an Organellar Thymidine Kinase. Plant Physiology, 2018, 178, 1643-1656.	4.8	13
94	Ribosome profiling elucidates differential gene expression in bundle sheath and mesophyll cells in maize. Plant Physiology, 2021, 187, 59-72.	4.8	6
95	CFM1, a member of the CRMâ€domain protein family, functions in chloroplast group II intron splicing in Setaria viridis. Plant Journal, 2021, 105, 639-648.	5.7	4
96	A Nuclear Gene in Maize Required for the Translation of the Chloroplast atpB/E mRNA. Plant Cell, 1999, 11, 1709.	6.6	2
97	Use of plant chloroplast RNA-binding proteins as orthogonal activators of chloroplast transgenes in the green alga Chlamydomonas reinhardtii. Algal Research, 2021, 60, 102535.	4.6	2
98	Functional Analysis of PSRP1, the Chloroplast Homolog of a Cyanobacterial Ribosome Hibernation Factor. Plants, 2020, 9, 209.	3.5	2