Elizabeth Vierling

List of Publications by Citations

91 papers	13,673 citations	59 h-index	104 g-index
104 ext. papers	15,224 ext. citations	7 avg, IF	6.47 L-index

#	Paper	IF	Citations
91	Complexity of the heat stress response in plants. *Current Opinion in Plant Biology*, **2007**, 10, 310-6	9.9	845
90	Heat stress phenotypes of Arabidopsis mutants implicate multiple signaling pathways in the acquisition of thermotolerance. *Plant Physiology*, **2005**, 138, 882-97	6.6	603
89	A small heat shock protein stably binds heat-denatured model substrates and can maintain a substrate in a folding-competent state. *EMBO Journal*, **1997**, 16, 659-71	13	594
88	Crystal structure and assembly of a eukaryotic small heat shock protein. *Nature Structural Biology*, **2001**, 8, 1025-30		579
87	Heat shock protein 101 plays a crucial role in thermotolerance in Arabidopsis. *Plant Cell*, **2000**, 12, 479-92	11.6	534
86	Evolution, structure and function of the small heat shock proteins in plants. *Journal of Experimental Botany*, **1996**, 47, 325-338	7	530
85	Molecular chaperones and protein folding in plants. *Plant Molecular Biology*, **1996**, 32, 191-222	4.6	457
84	Small heat shock proteins and α-crystallins: dynamic proteins with flexible functions. *Trends in Biochemical Sciences*, **2012**, 37, 106-17	10.3	382
83	A small heat shock protein cooperates with heat shock protein 70 systems to reactivate a heat-denatured protein. *Plant Physiology*, **2000**, 122, 189-98	6.6	376
82	Comprehensive expression profile analysis of the Arabidopsis Hsp70 gene family. *Plant Physiology*, **2001**, 126, 789-800	6.6	367
81	Mutants of Arabidopsis thaliana defective in the acquisition of tolerance to high temperature stress. *Proceedings of the National Academy of Sciences of the United States of America*, **2000**, 97, 4392-7	11.5	332
80	A first line of stress defense: small heat shock proteins and their function in protein homeostasis. *Journal of Molecular Biology*, **2015**, 427, 1537-48	6.5	331
79	Core genome responses involved in acclimation to high temperature. *Plant Physiology*, **2008**, 146, 748-61	6.6	329
78	A cascade of transcription factor DREB2A and heat stress transcription factor HsfA3 regulates the heat stress response of Arabidopsis. *Plant Journal*, **2008**, 53, 264-74	6.9	296
77	Small heat shock proteins, ClpB and the DnaK system form a functional triade in reversing protein aggregation. *Molecular Microbiology*, **2003**, 50, 585-95	4.1	294
76	Modulation of nitrosative stress by S-nitrosoglutathione reductase is critical for thermotolerance and plant growth in Arabidopsis. *Plant Cell*, **2008**, 20, 786-802	11.6	263
75	Small heat-shock proteins regulate membrane lipid polymorphism. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 13504-9	11.5	261

74	Conserved cell and organelle division. *Nature*, **1995**, 376, 473-4	50.4	259
73	The expanding family of Arabidopsis thaliana small heat stress proteins and a new family of proteins containing alpha-crystallin domains (Acd proteins). *Cell Stress and Chaperones*, **2001**, 6, 225-37	4	258
72	Structure and in vitro molecular chaperone activity of cytosolic small heat shock proteins from pea. *Journal of Biological Chemistry*, **1995**, 270, 10432-8	5.4	243
71	Refolding of substrates bound to small Hsps relies on a disaggregation reaction mediated most efficiently by ClpB/DnaK. *Journal of Biological Chemistry*, **2003**, 278, 31033-42	5.4	224
70	The expression of small heat shock proteins in seeds responds to discrete developmental signals and suggests a general protective role in desiccation tolerance. *Plant Physiology*, **2000**, 122, 1099-108	6.6	222
69	A novel transcriptional cascade regulating expression of heat stress proteins during seed development of Arabidopsis. *Plant Cell*, **2007**, 19, 182-95	11.6	207
68	Quaternary dynamics and plasticity underlie small heat shock protein chaperone function. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 2007-12	11.5	205
67	Exceptional Sensitivity of Rubisco Activase to Thermal Denaturation in Vitro and in Vivo. *Plant Physiology*, **2001**, 127, 1053-1064	6.6	193
66	Substrate binding site flexibility of the small heat shock protein molecular chaperones. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 15604-9	11.5	192
65	Evidence for an unfolding/threading mechanism for protein disaggregation by Saccharomyces cerevisiae Hsp104. *Journal of Biological Chemistry*, **2004**, 279, 29139-46	5.4	191
64	Analysis of natural allelic variation of Arabidopsis seed germination and seed longevity traits between the accessions Landsberg erecta and Shakdara, using a new recombinant inbred line population. *Plant Physiology*, **2004**, 135, 432-43	6.6	182
63	Arabidopsis hot mutants define multiple functions required for acclimation to high temperatures. *Plant Physiology*, **2003**, 132, 757-67	6.6	168
62	The plant sHSP superfamily: five new members in Arabidopsis thaliana with unexpected properties. *Cell Stress and Chaperones*, **2008**, 13, 183-97	4	162
61	Subunit exchange of multimeric protein complexes. Real-time monitoring of subunit exchange between small heat shock proteins by using electrospray mass spectrometry. *Journal of Biological Chemistry*, **2002**, 277, 38921-9	5.4	161
60	Hsp101 is necessary for heat tolerance but dispensable for development and germination in the absence of stress. *Plant Journal*, **2001**, 27, 25-35	6.9	160
59	The identity of proteins associated with a small heat shock protein during heat stress in vivo indicates that these chaperones protect a wide range of cellular functions. *Journal of Biological Chemistry*, **2004**, 279, 7566-75	5.4	132
58	The N-terminal arm of small heat shock proteins is important for both chaperone activity and substrate specificity. *Journal of Biological Chemistry*, **2006**, 281, 39943-52	5.4	131
57	The Arabidopsis ClpB/Hsp100 family of proteins: chaperones for stress and chloroplast development. *Plant Journal*, **2007**, 49, 115-27	6.9	131

56	Changes in oligomerization are essential for the chaperone activity of a small heat shock protein in vivo and in vitro. *Journal of Biological Chemistry*, **2002**, 277, 46310-8	5.4	129
55	Expression of a Conserved Family of Cytoplasmic Low Molecular Weight Heat Shock Proteins during Heat Stress and Recovery. *Plant Physiology*, **1991**, 96, 1038-47	6.6	124
54	A rhizosphere fungus enhances Arabidopsis thermotolerance through production of an HSP90 inhibitor. *Plant Physiology*, **2007**, 145, 174-82	6.6	119
53	The chloroplast small heat shock protein undergoes oxidation-dependent conformational changes and may protect plants from oxidative stress. *Cell Stress and Chaperones*, **1999**, 4, 129-38	4	107
52	Developmental control of small heat shock protein expression during pea seed maturation. *Plant Journal*, **1994**, 5, 93-102	6.9	103
51	The growing world of small heat shock proteins: from structure to functions. *Cell Stress and Chaperones*, **2017**, 22, 601-611	4	101
50	S-nitrosoglutathione reductases are low-copy number, cysteine-rich proteins in plants that control multiple developmental and defense responses in Arabidopsis. *Frontiers in Plant Science*, **2013**, 4, 430	6.2	90
49	Interactions between small heat shock protein subunits and substrate in small heat shock protein-substrate complexes. *Journal of Biological Chemistry*, **2004**, 279, 1080-9	5.4	90
48	Chaperone activity of cytosolic small heat shock proteins from wheat. *FEBS Journal*, **2004**, 271, 1426-36		84
47	Genetic analysis reveals domain interactions of Arabidopsis Hsp100/ClpB and cooperation with the small heat shock protein chaperone system. *Plant Cell*, **2005**, 17, 559-71	11.6	83
46	Analysis of conserved domains identifies a unique structural feature of a chloroplast heat shock protein. *Molecular Genetics and Genomics*, **1991**, 226, 425-31		81
45	Functional characterization of the higher plant chloroplast chaperonins. *Journal of Biological Chemistry*, **1995**, 270, 18158-64	5.4	79
44	Ribulose 1,5-Bisphosphate Carboxylase Synthesis during Heat Shock. *Plant Physiology*, **1985**, 78, 155-62	6.6	78
43	S-Nitrosation of Conserved Cysteines Modulates Activity and Stability of S-Nitrosoglutathione Reductase (GSNOR). *Biochemistry*, **2016**, 55, 2452-64	3.2	78
42	Mutations in an Arabidopsis mitochondrial transcription termination factor-related protein enhance thermotolerance in the absence of the major molecular chaperone HSP101. *Plant Cell*, **2012**, 24, 3349-65	11.6	77
41	Arabidopsis UVH6, a homolog of human XPD and yeast RAD3 DNA repair genes, functions in DNA repair and is essential for plant growth. *Plant Physiology*, **2003**, 132, 1405-14	6.6	72
40	Arabidopsis hot2 encodes an endochitinase-like protein that is essential for tolerance to heat, salt and drought stresses. *Plant Journal*, **2007**, 49, 184-93	6.9	71
39	Mechanistic differences between two conserved classes of small heat shock proteins found in the plant cytosol. *Journal of Biological Chemistry*, **2010**, 285, 11489-97	5.4	70

38	Evidence for an essential function of the N terminus of a small heat shock protein in vivo, independent of in vitro chaperone activity. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 18896-901	11.5	65
37	Class I and II Small Heat Shock Proteins Together with HSP101 Protect Protein Translation Factors during Heat Stress. *Plant Physiology*, **2016**, 172, 1221-1236	6.6	64
36	Real-time monitoring of protein complexes reveals their quaternary organization and dynamics. *Chemistry and Biology*, **2008**, 15, 246-53		64
35	Dissecting heterogeneous molecular chaperone complexes using a mass spectrum deconvolution approach. *Chemistry and Biology*, **2012**, 19, 599-607		61
34	Cytoplasmic HSP70 homologues of pea: differential expression in vegetative and embryonic organs. *Plant Molecular Biology*, **1995**, 27, 441-56	4.6	60
33	Insights into small heat shock protein and substrate structure during chaperone action derived from hydrogen/deuterium exchange and mass spectrometry. *Journal of Biological Chemistry*, **2008**, 283, 26634-42	5.4	59
32	"Heat shock lipid" in cyanobacteria during heat/light-acclimation. *Archives of Biochemistry and Biophysics*, **2005**, 436, 346-54	4.1	56
31	Poly(A) tail length of a heat shock protein RNA is increased by severe heat stress, but intron splicing is unaffected. *Molecular Genetics and Genomics*, **1993**, 239, 323-33		56
30	Plant small heat shock proteins - evolutionary and functional diversity. *New Phytologist*, **2020**, 227, 24-37	9.8	53
29	Mutants in a small heat shock protein that affect the oligomeric state. Analysis and allele-specific suppression. *Journal of Biological Chemistry*, **2004**, 279, 32674-83	5.4	49
28	An unusual dimeric small heat shock protein provides insight into the mechanism of this class of chaperones. *Journal of Molecular Biology*, **2013**, 425, 1683-96	6.5	48
27	A mutant small heat shock protein with increased thylakoid association provides an elevated resistance against UV-B damage in synechocystis 6803. *Journal of Biological Chemistry*, **2008**, 283, 22983-91	5.4	44
26	Solution structure and dynamics of a heat shock protein assembly probed by hydrogen exchange and mass spectrometry. *Biochemistry*, **2003**, 42, 10667-73	3.2	44
25	The quaternary organization and dynamics of the molecular chaperone HSP26 are thermally regulated. *Chemistry and Biology*, **2010**, 17, 1008-17		41
24	The chloroplast small heat-shock protein oligomer is not phosphorylated and does not dissociate during heat stress in vivo. *Plant Physiology*, **1998**, 116, 1151-61	6.6	39
23	HSP101 Interacts with the Proteasome and Promotes the Clearance of Ubiquitylated Protein Aggregates. *Plant Physiology*, **2019**, 180, 1829-1847	6.6	38
22	Plant Responses to High Temperature100-144		36
21	Metabolic adaptation of wheat grain contributes to a stable filling rate under heat stress. *Journal of Experimental Botany*, **2018**, 69, 5531-5545	7	35

20	Molecular characterization of cDNAs encoding low-molecular-weight heat shock proteins of soybean. *Plant Molecular Biology*, **1996**, 30, 159-69	4.6	35
19	Structural principles that enable oligomeric small heat-shock protein paralogs to evolve distinct functions. *Science*, **2018**, 359, 930-935	33.3	29
18	Replica exchange molecular dynamics simulations provide insight into substrate recognition by small heat shock proteins. *Biophysical Journal*, **2014**, 106, 2644-55	2.9	28
17	Expression, purification, and molecular chaperone activity of plant recombinant small heat shock proteins. *Methods in Enzymology*, **1998**, 290, 350-65	1.7	28
16	Mutations in eIF5B Confer Thermosensitive and Pleiotropic Phenotypes via Translation Defects in. *Plant Cell*, **2017**, 29, 1952-1969	11.6	25
15	The small heat shock proteins in plants are members of an ancient family of heat induced proteins. *Acta Physiologiae Plantarum*, **1997**, 19, 539-547	2.6	25
14	A cDNA clone from Pisum sativum encoding a low molecular weight heat shock protein. *Nucleic Acids Research*, **1990**, 18, 4274	20.1	23
13	It takes a dimer to tango: Oligomeric small heat shock proteins dissociate to capture substrate. *Journal of Biological Chemistry*, **2018**, 293, 19511-19521	5.4	23
12	Molecular chaperones and protein folding in plants **1996**, 191-222		22
11	Model Chaperones: Small Heat Shock Proteins from Plants. *Heat Shock Proteins*, **2015**, 119-153	0.2	15
10	An Arabidopsis Heat Shock Protein Complements a Thermotolerance Defect in Yeast. *Plant Cell*, **1994**, 6, 1899	11.6	15
9	Triticum aestivum cDNAs homologous to nuclear-encoded mitochondrion-localized small heat shock proteins. *Plant Science*, **1999**, 141, 93-103	5.3	7
8	Auxin efflux controls orderly nucellar degeneration and expansion of the female gametophyte in Arabidopsis. *New Phytologist*, **2021**, 230, 2261-2274	9.8	6
7	Structural and functional aspects of the interaction partners of the small heat-shock protein in Synechocystis. *Cell Stress and Chaperones*, **2018**, 23, 723-732	4	5
6	Assessing Plant Tolerance to Acute Heat Stress. *Bio-protocol*, **2017**, 7, e2405	0.9	3
5	Mitochondrial ATP synthase subunit d, a component of the peripheral stalk, is essential for growth and heat stress tolerance in Arabidopsis thaliana. *Plant Journal*, **2021**, 107, 713-726	6.9	3
4	mTERF18 and ATAD3 are required for mitochondrial nucleoid structure and their disruption confers heat tolerance in Arabidopsis thaliana. *New Phytologist*, **2021**, 232, 2026-2042	9.8	3
3	Quantitative Proteome Profiling of a -Nitrosoglutathione Reductase (GSNOR) Null Mutant Reveals a New Class of Enzymes Involved in Nitric Oxide Homeostasis in Plants.. *Frontiers in Plant Science*, **2021**, 12, 787435	6.2	0

List of Publications

2	Direct Measurement of S-Nitrosothiols with an Orbitrap Fusion Mass Spectrometer: S-Nitrosoglutathione Reductase as a Model Protein. *Methods in Molecular Biology*, **2018**, 1747, 143-160	1.4
1	Identification of substrate binding sites on a small heat shock protein reveals a unique mode of interaction between differentially aggregating substrates. *FASEB Journal*, **2009**, 23, 673.6	0.9