Classification and genome-wide analysis of chitin-binding proteins gene family in pepper (*Capsicum annuum* L.) and transcriptional regulation to *Phytophthora capsici*, abiotic stresses and hormonal applications

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Table S1. Primers for gene sequencing and confirmation.

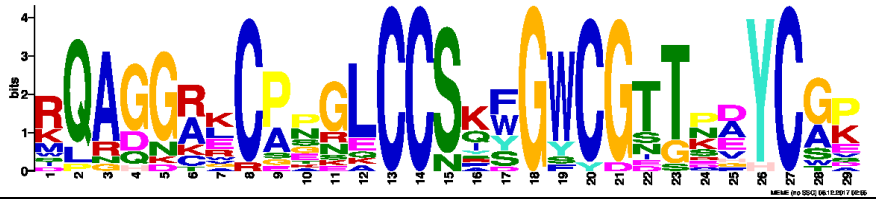
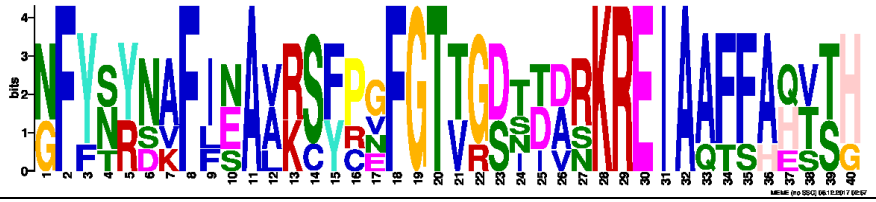
Gene Name	Accession#		Primer sequence (5'→3')
CaChiI1	Capana07g001653	F	ATGAAGCTTTGTGAATTCACAGC
		R	TTACATAGAATCGATTAAGAGTCCA
CaChiI2	Capana10g001143	F	CACTTTGTCACTTTCTTTCCATCAC
		R	CCTCGTCAAAAATATTTTCTTCCAG
CaChiI3	CA10g09850	F	GCCACTTGTTTCCCATTACC
		R	CTGATCTCAAAGTTGAACTTATC
CaChiIII1	Capana03g000778	F	ATGATGAGAACTAGAGAGACAGC
		R	CTAGAGAGCATTGAGCAGGAAG
CaChiIII3	CA03g30170	F	CCATCCTGTCATCACAAAATGATG
		R	GGAACGACCAACATCTAGCTAG
CaChiIII5	CA03g30190	F	CGTCTTATAACAATTCACAAAATG
		R	CTTGTTATACGAGGTTAGACC
CaChiIV2	Capana06g002084	F	ATGTTGGCTCAGAATTGTGAGTG
		R	CTAACAAGAGAGATTATCCCCAG
CaChiVI1	CA07g09480	F	GTAAGAAAGAAGCATAAAGAG
		R	GTATCATACGTTCATTAGTTGG
CaChiVI2	Capana08g001237	F	ATGGAGAAGCTAAGTACTACTGC
		R	TCAGTTATCACCACAATCAAC
CaChiVI3	CA08g10220	F	CAACCACATTATAGCAGCTCT
		R	CAGACTAAACAGAGCCATG

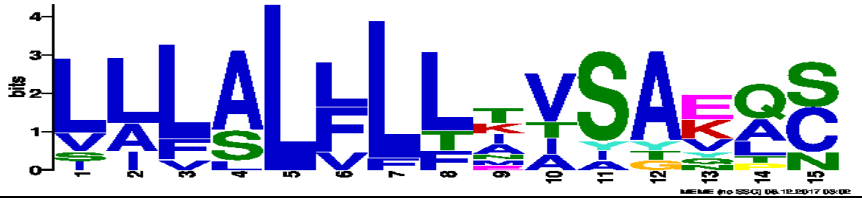
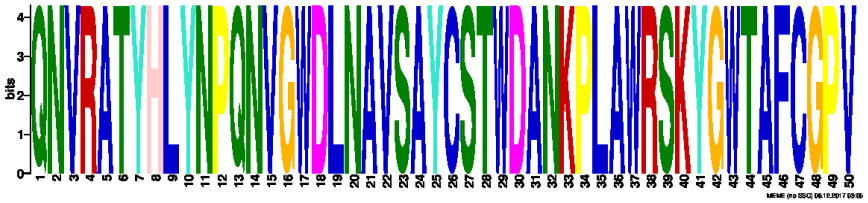
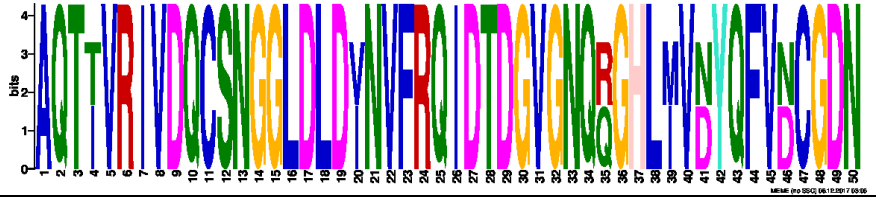
Table S2. Chemistry and domains organization of CaChi´s genes of pepper.

Genes	Domains Interval				Formula	Total number of atoms
	Chitin_bind_1	Glyco_hydro_19 super family	chitinase_glyco_hydro_19	Barwin		
CaChiI1	24-62	84-316	---	---	$C_{1554}H_{2366}N_{452}O_{461}S_{23}$	4856
CaChiI2	24-62	84-187	---	---	$C_{897}H_{1375}N_{261}O_{259}S_{14}$	2806
CaChiI3	24-62	84-154	---	---	$C_{715}H_{1096}N_{200}O_{221}S_{13}$	2245
CaChiIII1	47-85 97-136	---	---	---	$C_{735}H_{1149}N_{209}O_{223}S_{19}$	2335
CaChiIII2	35-73 83-119 143-181	---	---	---	$C_{908}H_{1373}N_{271}O_{274}S_{26}$	2852
CaChiIII3	48-86 102-140 156-194 210-248	---	---	---	$C_{1252}H_{1927}N_{349}O_{369}S_{36}$	3933
CaChiIII4	2-36 52-90 106-143	---	---	---	$C_{756}H_{1151}N_{213}O_{234}S_{26}$	2380
CaChiIII5	57-95 103-119	---	---	---	$C_{985}H_{1570}N_{290}O_{279}S_{16}$	3140
CaChiIII6	49-87 96-132	---	---	---	$C_{691}H_{1079}N_{187}O_{223}S_{18}$	2198
CaChiIII7	48-85 94-132 143-181	---	---	---	$C_{894}H_{1400}N_{250}O_{306}S_{26}$	2876
CaChiIV1	33-59	---	78-277	---	$C_{1320}H_{1959}N_{357}O_{414}S_{19}$	4069

CaChiIV2	3-34	---	53-252	---	$C_{1226}H_{1832}N_{330}O_{379}S_{21}$	3788
CaChiVI1	22-59	---	---	---	$C_{374}H_{599}N_{117}O_{127}S_{9}$	1226
CaChiVI2	26-65	---	---	83-198	$C_{913}H_{1423}N_{273}O_{288}S_{15}$	2912
CaChiVI3	26-65	---	---	78-193	$C_{956}H_{1496}N_{288}O_{302}S_{16}$	3058
CaChiVI4	43-80	---	---	---	$C_{514}H_{812}N_{150}O_{152}S_{13}$	1641

Table S3. Ten highly conserved motifs found in CaChi´s proteins.

No.	Motif consensus sequence	E-value	Regular expression (RE) describing the motif.	Length (AA)
1		1.5e-156	RQAGGRKCPPGLCCSKFGWCGTTPAYCGP	29
2		6.8e-060	NFYSYNAFINAVRSFPGFGTTGDTTARKRE IAAFFAQTTH	40
3		1.2e-044	RGPIQLSWNFNYGPAGKAIGFDGLNDPDIV ARDPVISFKTALWYWMNNCH	50

4		1.2e-039	NCQSQCPSGPSPKPPTPGPRPGGDISGVIS NSMFDQMLKHRNDNACQGK	49
5		1.6e-034	LLLALLLLTVSAEQS	15
6		2.2e-024	PTGQCCSISGWCGATEDYCEE	21
7		3.8e-023	QNVRATYHLYNPQNVGWDLNAVSAYCSTWD ANKPLAWRSKYGWTAFCGPV	50
8		2.2e-019	AQTIVRIVDQCSNGGLDLDINVFRQIDTDGV GNQRGHLIVDYQFVDCGDN	50

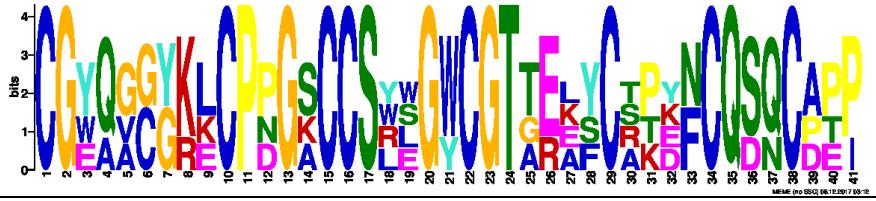
9		7.6e-017	QGFGPTIRAINGRLECDDGNPQAVARRVEY YTQYCEQLGVDPGDN	45
10		3.3e-016	CGYQGGGKLCPPGSCCSWWGWCGTTEEYCS PEFCQSQCAPP	41

Table S4. Function of the *cis*-acting elements found in the promoter region of CaChi´s.

Cis acting elements	Motif	Function	Reference
Defense-related and stress stimulative elements	TC-rich repeats	Defense and stress responsiveness	[1]
	W box	Fungal elicitor-responsive element	[2]
	WUN-motif	Wound-responsive element	[3]
	HSE	Heat stress responsiveness	[3]
	LTR	Low temperature responsiveness	[4]
	MBS	MYB binding site involved in drought-inducibility	[5]
Plant hormones responsive elements	CGTCA-motif	MeJA responsiveness	[6]
	GARE-motif	GA-responsive element	[7]
	TCA-element	Salicylic acid responsiveness	[8]
	TGA-element	Auxin-responsive element	[3]
	ERE	Ethylene-responsive element	[9]
	ABRE	ABA responsiveness	[10]
	AuxRR-core	Auxin responsiveness	[11]
	P-box	GA-responsive element	[12]

Table S5. Primers for qRT-PCR of CaChi´s genes of pepper.

Gene name	RT-PCR Primer sequence (5'→3')	Product length
CaChiI1	F: AAACCTCCCATGAAACTACCG	227
	R: GTTTAAAAGGTCAACTCCGATGG	
CaChiI2	F: GGACATCAGCGGTGTAATCT	116
	R: CAGCATTGATGAAGGCATTGT	
CaChiI3	F: CTATTTGCTCTCTTATTGCTGATGG	133
	R: CAGGACCACAATAGGCATCG	
CaChiIII1	F: TCTTCCCTTTCATCTTCCAACC	229
	R: AGTTTGTTCTCCGCATCGTC	
CaChiIII2	F: CTCCACCTCCACCTAATTTCC	100
	R: CCACACCAACCCCATCTAC	
CaChiIII3	F: TGGTGCGGAACTACAGAAAAG	127
	R: TTCTACCATCAGCTTGCCTTC	
CaChiIII4	F: GGAATGCAAGCTGATGGTAGA	110
	R: CTCTGACTTTGACACCACTCTT	
CaChiIII5	F: GAAAGCAAGCTGCTGGTAGA	106
	R: TGACTTTGACAGTAGGGAGAAC	
CaChiIII6	F: GTCCTAGTGAAGAGTGTTGTAGTT	114
	R: CGCATAAACCTGGCTCTTCT	
CaChiIII7	F: TCAGCCAAAACATCTCTTCCC	121

	R: CATCAGGGCATTCTCTACCAC	
CaChiIV1	F: TCTTTGCTCATGTCACCCAC	227
	R: ATCTCTTGCAACTATGTCAGGG	
CaChiIV2	F: TCAAGTGCTATCCTGAATTCGG	182
	R: CTTTCCAGAGACACAAGGGTAC	
CaChiVI1	F: CAATACGGGTTCTGTGGTACG	103
	R: CAACATTTTCAGCTTCGCCAG	
CaChiVI2	F: TGGGACTTGAATGCGGTTAG	178
	R: TCACTATCGTCTGAGCTCCTG	
CaChiVI3	F: CGACATGGGATGCTAATAAGCC	143
	R: CGTTGTTTGAGCTCTGGTTCG	
CaChiVI4	F: GTCTTTGTGATTTTGGCCCTG	191
	R: TTGGCGAACATGGTAGTGG	

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