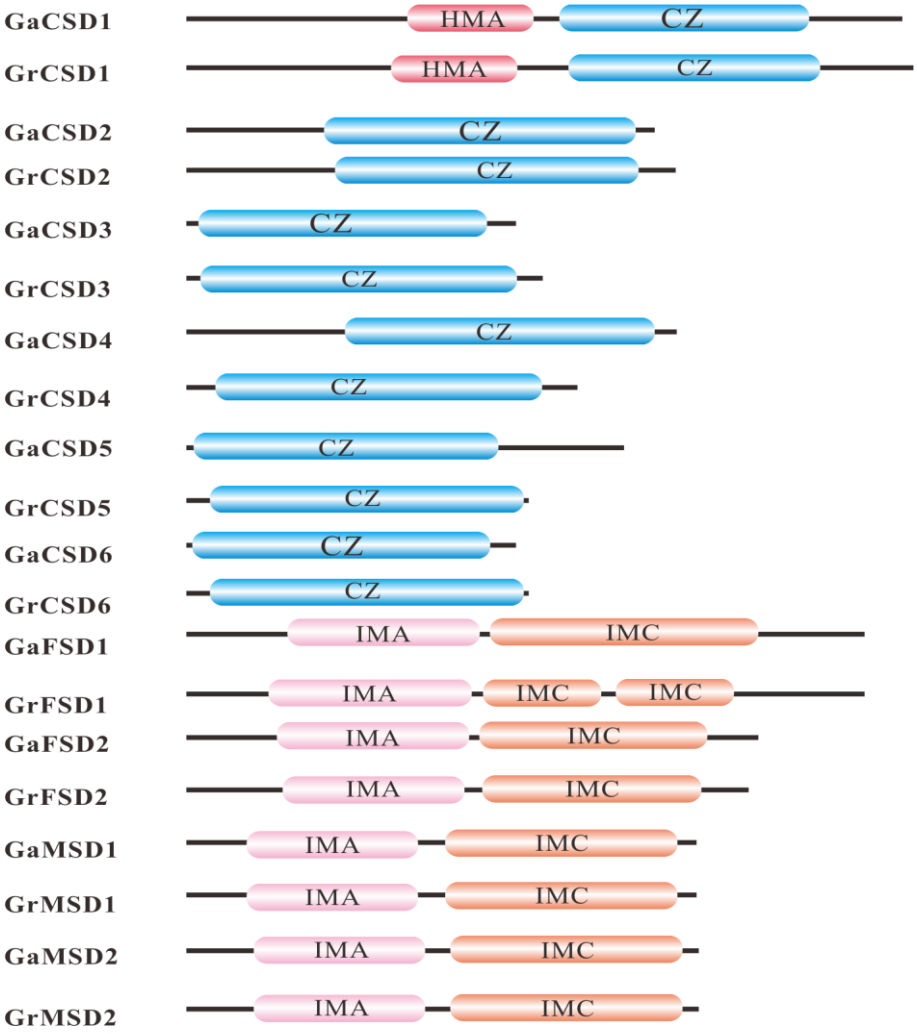
Supplemental figure and table legends



Supplementary Figure S1 Domain analysis of SOD genes in cotton

Supplementary Table S1. The duplicated genes of SOD gene family and their date of duplication events

Gene pairs		ka	ks	Ka/ks	T= Ks/2λ
GaCSD2	GaCSD6	0.039	0.5586	0.07	18.62Mya
GaCSD3	GaCSD5	0.0975	0.3729	0.26	12.43Mya
GaFSD1	GaFSD2	0.4156	0.9221	0.45	30.73Mya
GaMSD1	GaMSD2	0.0429	0.4071	0.11	13.57Mya
GrCSD2	GrCSD6	0.0328	0.4939	0.07	16.46Mya
GrCSD3	GrCSD4	0.6042	0.5853	1.03	19.51Mya
GrCSD3	GrCSD5	0.0662	0.3630	0.18	12.1Mya
GrCSD1	GrCSD6	0.4787	0.2739	1.75	9.13Mya
GrFSD1	GrFSD2	0.4136	0.9845	0.42	32.827Mya
GrMSD1	GrMSD2	0.0529	0.4198	0.13	13.99Mya

Supplementary Table S2. The sequences of the 14 motifs by motif analysis of *GaSOD* genes.

Motif No.	Length (aa)	E-value	Multilevel Consensus Sequence	No. of SOD proteins in which motif is present	SOD proteins in which motif is present
Motif 1	91	5.4E-514	[PA]HFNP[ANL][GKNR][KM][ETD]HGAP[ES]D[EGV][NVE]RHAGDLGN[IV][ITV][AV][GN][ADP]DG[VCS]A[ES][AFV][ST]I[VKT]D[KNW]QIPL[ST]G[PQ][NH][SA][IV][ILV]GRA[VF]VVH[AE][DL][PE]DDLGKGGHELS[KL][TS]TGNAG[GA]R[VL][AG]CG[IV][IV]GL[QT]	10	GaCSD1,GaCSD2, GaCSD3,GaCSD5 GaCSD6,GrCSD1, GrCSD2,GrCSD3 GrCSD5,GrCSD6
Motif 2	42	1.00E-156	[AQ][TY][FY][SEG]L[KP][DAT][LP]PY[DNP][LY][GDN][AD]LEP[AHY][IM]S[GKR][ER][IAT][LM][QE][LVY]H[HW][GQ][KV]HH[QR][TD][YF][IV][TDE]N[LY]NK[AQ]	8	GaFSD1,GaFSD2, GaMSD1,GaMSD2 GrFSD1,GrFSD2, GrMSD1,GrMSD2
Motif 3	41	1.40E-213	[LF]TQEGDGPTTV[NT][GV][NR]I[ST]GL[KTS]PGLHGFH[LVI]H[EA][LY]GDTTNGCMSTG	11	GaCSD2,GaCSD3, GaCSD4,GaCSD5 GaCSD6,GrCSD1, GrCSD2,GrCSD3 GrCSD4,GrCSD5, GrCSD6
Motif 4	47	2.20E-131	GG[EDG][PKM]P[HKNS][GAL][SDG]L[GL][WDE][ALQ]I[DE][TR][DHN]FGS[FL][ET][SNR][FL][IR][EQ][KE][FM][NKV][AE][AE][AG][AL][AST][LQ][FQ]GSGW[VA]WL[GAV][LVY][KDN][KAR][ENQ]	8	GaFSD1,GaFSD2, GaMSD1,GaMSD2 GrFSD1,GrFSD2, GrMSD1,GrMSD2
Motif 5	31	6.00E-123	[PT][IKLN][GV][PW][DHN][LDY][VFI]P[LI]L[GNT][IL]D[VM]WEHAYYL[DQ][YF][KQ]N[VD][RK][PA][DR]Y[LI]		GaFSD1,GaFSD2, GaMSD1,GaMSD2 GrFSD1,GrFSD2, GrMSD1,GrMSD2
Motif 6	41	1.00E-72	QLH[DE]AIQKGDSSTVVKLQSAIKFNGGGH[IV]NHSIFWKNLAPI	4	GaMSD1,GaMSD2. GrMSD1,GrMSD2
Motif 7	29	5.20E-51	TYN[KN]G[DN][IP]LP[AE]FNNAA[EQ][AV]WNHDFFWESM[KQ]P	4	GaFSD1,GaFSD2, GrFSD1,GrFSD2
Motif 8	41	1.30E-46	L[PS][RN][QP][SV][LV][SR][IL][AL][AG][TN][IS]P[KV]K[QT][FM][SN][VE][AFL][AL][VE][QST][KT][KG][AR][VK]A[VR]L[KI]G[DNQ][SG][EKV][VP]E[GD][VF][VL][TV]		GaCSD3,GaCSD4, GaCSD5,GrCSD3 GrCSD4,GrCSD5
Motif 9	21	2.80E-40	[KV][NF][IMV][WE]K[VL][IV][NS]W[KE][YT][AV][SN][ET][VR][YL]EK[EA][CKS]A	6	GaFSD1,GrFSD1, GaMSD1,GaMSD2 GrMSD1,GrMSD2
Motif 10	80	1.40E-27	TLDVDKNGE[AS]FYTGV[EK]QQLRVADLIGRSIAVYETEDRSDPGLTAAVIARSAGVGENYKKICACDGTTIWEASDKDFVT[ST]K	2	GaCSD4,GrCSD4
Motif 11		3.10E-27	RNSSHFPNAKSLPFLSSPPNRLGL[IT]RNFATSP[IT]ALNMDSPS[ST][HN]HNPSQENGSLPDLLTEYMVDMKCEGCVTAVKNKLQTV	2	GaCSD4,GrCSD4
Motif 12	21	4.80E-23	[MA]A[LT][RT]S[LMS][VA]T[RS][KLR]T[LF]T[LI][AGP][LS][NL][SG]TRL	6	GaFSD1,GrFSD1, GaMSD1,GaMSD2 GrMSD1,GrMSD2
Motif 13	41	5.20E-16	RAAEREMEEERRRKEEEEGKPTNEE[DE]DDDDLEMYVDNDNDD	2	GaFSD1,GrFSD1
Motif 14	15	2.50E-15	K[AKP][LV][VA][VL][LE][ST][ST]F[EN][GQ][VD][SP][LG][TV]	11	GaCSD2,GaCSD3, GaCSD5,GaCSD6 GrCSD2,GrCSD3, GrCSD6,GaMSD1 GaMSD2,GrMSD1, GrMSD2

Supplementary Table S3. List of primers used in quantitative real time-PCR expression analysis.

Name	Forward primers (5′- 3′)	Reverse primers (5′- 3′)
GaCSD1	CCCTGATGGAGTTGCTGAGG	CCTGCATTCCCTGTCGTCTT
GaCSD2	CTACCGTGACTGGGAACCTTT	CACAGCCATCATCACCAACAG
GaCSD3	ACCCACCGGTTCTTTTCTCC	GTCAACGTGACAACGCCTTC
GaCSD4	ACCTGGAAAACACGGTTGGT	AAACAGCTATTGACCGCCCA
GaCSD5	CAGCCACTTCTCACATTATCTCC	AGAACTTGTGGGTCTGAAGGGTT
GaCSD6	TCAACAGGACCTCACTTCAA	ACGACCGCTCTTCCAATA
GaFSD1	CCCCTTGTTTGGGACTACTT	TCGGTTTGCCCTCTTCTT
GaFSD2	ATTGGGGTGTGCATCATCGT	TCATGGTTCCACACCTCTGC
GaMSD1	TGAGCCTCCACATGGTTCTTTG	ATCCTGATTTGCAGTGGTTTCG
GaMSD2	CACGATGCTGCTGCCTCTGTC	ACCTCCGCCGTTGAACTTGAT

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