

Additional file 5: Figure S1. The alignment of the genome sequence and mRNA sequence of *GhCSD7* ([Gh_A09G2473](#)) with *GhCSD8* ([Gh_D09G0858](#)) and its downstream 5000bp (D09: 33604208.. 33609208 -). The multiple alignment was obtained using ClustalW and conserved amino acids were shaded using Boxshade sever (v.3.21) (<http://sourceforge.net/projects/boxshade/>). Dashes (-) indicated gaps in the alignment. The rectangle filled blue represented the GhCSD7, the rectangle filled red represented the C2H2-type zinc finger protein.

Gh_D09G0858	1	TGGTCTTACTCCTGGGCCTCATGGCTTCCACCTGATGGCTGCCCATATTTTCA	TGACAAC
Gh_A09G2473_mRNA	1	-----ATGGCTGCCCATATTTT	CACGACAAC
Gh_A09G2473	1	TGGTCTTACTCCTGGGCCTCATGGCTTCCACCTA	ATGGCTGCCCATATTTT
Gh_D09G0858	61	CCCATCCCACCTCGCTCTCTCTTTTCCATCCTCAACTAACCCTTCAAACCCACCGTTCT	
Gh_A09G2473_mRNA	27	CCCGTCCCACCTCGCTCTCTCTTTTCCATCCTCAACTAACCCTTCAAACCCACCGTTCT	
Gh_A09G2473	61	CCCGTCCCACCTCGCTCTCTCTTTTCCATCCTCAACTAACCCTTCAAACCCACCGTTCT	
Gh_D09G0858	121	TCTCTCCTCATTTTCGTGGGGTCTCTCTTAAGCTCCCTCGTCAATCCCTCTCCCTTGCTGC	
Gh_A09G2473_mRNA	87	TCTCTCCTCATTTTCGTGGGGTCTCTCTTAAGCTCCCTCGTCAATCCCTCTCCCTTGCTGC	
Gh_A09G2473	121	TCTCTCCTCATTTTCGTGGGGTCTCTCTTAAGCTCCCTCGTCAATCCCTCTCCCTTGCTGC	
Gh_D09G0858	181	CACTATTCCCAAGAAGCCCTTTTCTGTGTTTGCTGTTACCAAGAAAGCTGTCGCTGTTCT	
Gh_A09G2473_mRNA	147	TACTATTCCCAAGAAGCCCTTTTCTGTGTTTGCTGTTACCAAGAAAGCTGTCGCTGTTCT	
Gh_A09G2473	181	TACTATTCCCAAGAAGCCCTTTTCTGTGTTTGCTGTTACCAAGAAAGCTGTCGCTGTTCT	
Gh_D09G0858	241	TAAAGGCAATTTCGGAAGTTGAAGGCGTTGTCACGTTGACCCAGGAAAC	TGATGGTTGACC
Gh_A09G2473_mRNA	207	TAAAGGTAATTTCGGAAGTTGAAGGCGTTGTCACGTTGACCCAGGAAAATGATGGTCCG	---
Gh_A09G2473	241	TAAAGGTAATTTCGGAAGTTGAAGGCGTTGTCACGTTGACCCAGGAAAATGATGGGGAA	---
Gh_D09G0858	301	CAGGAAACTGATGGTTTCTGTTTTGCCCCC	CCCCCTCTTTTTATCATT
Gh_A09G2473_mRNA	265	-----TGTTTTGCCCCC	-----TCTTTTTATCATT
Gh_A09G2473	299	-----GGGTTGATATGC	-----AAGCTCAAGCTGTAATTTGTGGG
Gh_D09G0858	361	TCTAATGCATTTTGTGATTTGGGTTTTTTTTT	-CTTCTAGTGGGGAAATTTTGATTCTTTG
Gh_A09G2473_mRNA	302	TCTAATGCATTTTGTGATTTGGGTTTTTTTTT	TCTTCTAGTGGGGAAATTTTGATTCTTTG
Gh_A09G2473	335	TCTGAT---CATCATCATCAAGAAGCCTTGATCATGAAAGGCAAGCGTACCAAGCGCCAA	
Gh_D09G0858	420	GGATTTCTTGTGTTTTTGAAGGATAAGAAGCCAAAGAAATGAAATGGGTACATTTTG	
Gh_A09G2473_mRNA	362	GGATTTCTTGTGTTTTTGAAGGATAAGAAGCCAAAGAAATGAAATGGGTACATTTTG	
Gh_A09G2473	392	AGATCGCCATCCCTGTTTTGCTCTCCGCTGACTTCGAGCTCATCAAATGG-----TG	
Gh_D09G0858	480	CTTTTTGGGGTTTTTCTTATTGACGAATTTAATTCCAAGTTTGATACTTTAAGATTTGAT	
Gh_A09G2473_mRNA	422	CTGTTTGGGGTTTTTCTTATTGACGAATTTAATTCCAAGTTTGATACTTTAAGATTTGAT	
Gh_A09G2473	444	GTGATGGAG-----TGGTGGAGGAATAAATCTGATTTCTTCTCCGATGACATCCGAT	
Gh_D09G0858	540	TGAATCTTGTACAATTAGGGTGTATTAATTTTTT	TAAATTTTGATGCCCAGAACATATTTAA
Gh_A09G2473_mRNA	482	TGAATCTTGTACAATTAGGGTGTATTAATTTTTT	TAAATTTTGATGCCCAGAACATATTTAA
Gh_A09G2473	497	-GAGATTTACCAGAGCACCGACGAAGAGAGGAGATGGCTAATGCTAATCATGTT---	
Gh_D09G0858	600	GGAAATAAAGTCATTGTGGAAGTACTTAACATGTTCTTTCTTTG	GCTGTTTAAACATGGA
Gh_A09G2473_mRNA	542	GGAAATAAAGTCATTGTGGAAGTACTTAACATGTTCTTTCTTTG	GCTGTTTAAACATGGA
Gh_A09G2473	553	-GCCACAAAGTGATGGT-----CCCAAAAGGAGTACTGTTGAAGCGAAATTC AAGATAGC	

Gh_D09G0858 660 AACTAA-ATGAAAAAATGTTAGCTTGTAGTTCTCTTATCTTTTTGGCAATCAAATGTTAG
Gh_A09G2473_mRNA 602 AACTAA-ATGAAAAAATGTTAGCTTGTAGTTCTCTTATCTTTTTGGCAATCAAATTTT-G
Gh_A09G2473 607 TACTAAGACAAAACAAGGTTGAGCTT-----TATGTCCACGAGTGTAAAACTT---

Gh_D09G0858 719 TATCATCTGGGAATGCTTATTTGTTCTGTGGATGAATAGGTCCTACAACGTGAATGTTCT
Gh_A09G2473_mRNA 660 TATCATCTGGGAATGCTTATTTGTTCTGTGGATGAATAGGTCCTACAACGTGAATGTTCT
Gh_A09G2473 654 -GTAACC--GGTCTTTCCCTTCGTTCCAAGCACTAGGAGGCCATATGGCAAGCCACAAGA

Gh_D09G0858 779 GAATTACTGGTCTTACTCCTGGGCCTCATGGCTTCCACCTG GTGAGTGTTTTCGGCTTTA
Gh_A09G2473_mRNA 720 GAATTACTGGTCTTACTCCTGGGCCTCATGGCTTCCACCTAGT GAGTGTTTTCGGCTT-A
Gh_A09G2473 711 AGCCTAAAGGCGCCATTGCAAGC-----AGAAAAGACCACTAGTTT---

Gh_D09G0858 839 GCTGCTTGTGTTAGTGGATTTGAGTGCATAAAAAGTTCTCCGAACAATATGATTTTAATC
Gh_A09G2473_mRNA 779 GCTGCTTGTGTTAGTGGATTTGAGCGCATAAAAAGTTCTCCGAACAATATGATTTTAATC
Gh_A09G2473 753 --TGGCAGTTAATGATGCAGTC-ATTGCTTTACGAGTAAGCAACAAAAAGGGTAATAAAA

Gh_D09G0858 899 TTCCTTTTCGTTTCTTGTGTAGCATGAGTATGGTGACACAACAAATGGGTGCATGTCAAC
Gh_A09G2473_mRNA 839 TTCCTTTTCGTTTCTTGTGTAGCATGAGTATGGTGACACAACGAATGGGTGCATGTCTAC
Gh_A09G2473 810 TTCACGAGTGTCAATCTGTGGCTCGGAATTCACGTC CGTCAAGCCCTCGGAGGTCAACA

Gh_D09G0858 959 AGGTATAACTTAGTGCATTTGAATCAAATGACGTGCGTTC TTATTGCGTTTCAGITCATE
Gh_A09G2473_mRNA 899 AGGTATAACTTAGTGCCTTTGAATCAAATGATGTGCGTTC TTATTGCGATTTAGGTCATE
Gh_A09G2473 870 TGAGAAGGCATAGGACAGCATCAGCACCTGCTGCAAGCAACCAAGATG-----CCATG

Gh_D09G0858 1019 TATGCACAAGATCCTTATTTTTTAAAATTTTAAATGACAGGAC CACATTTCAATCCTAACA
Gh_A09G2473_mRNA 959 TATGTATAAGTCTCTTATTTTTAAAATTTTTAAATGACAGGAG CACATTTCAATCCTAACA
Gh_A09G2473 923 AATGGCAATGAT----CACATCAAGCCTAGSAATA TTA----CGCCTTTGGATCTTAATC

Gh_D09G0858 1079 ATATGACACATGGTGTCTCTGAGGATGAAGTACGCCATGCGGGTGACCTGGGAAACATAA
Gh_A09G2473_mRNA 1019 ATATGACACATGGTGTCTCTGAGGATGAAGTACGCCATGCGGGTGACCTGGGAAACATAA
Gh_A09G2473 975 TTCTTGCACCTGAAGAT---GATGTTAGAG-ATTCCATGTTCTG-AATTGGAAACACC---

Gh_D09G0858 1139 TTGCTAATGCTGATGGTAATACATTCTTAATTTTTTTTTTTTCTT TTTTAAATTTTCTGT
Gh_A09G2473_mRNA 1079 TTGCTAATGCTGATGGTAATACATTCTTAATTTTTTTTTTTTCTTATTTTAAATTTGTCTAT
Gh_A09G2473 1027 ---CCAAC----AAGCTATTGCTTCTCCACACCAGCTTTGGTAGATTGCCATTA-CTAA

Gh_D09G0858 1199 GCACCAATTAAC TTTATTCATTGCCTATGTTTGTAATGCAGGAGTGGCAGAGGCAACAA
Gh_A09G2473_mRNA 1139 GCACCAATTAAC TTTATTCATTGCCTATGTTCTGGTAATGCAGGAGTGGCAGAGGCAACAA
Gh_A09G2473 1079 GTCGACATGAAC TTAGTCTAACCACCTGGAAATGCTGGCGGAAGATTGGCATGTGATACCA

Gh_D09G0858 1259 TTGTG-GACAATCAGGTGATGTTTAAATAACTCGTGTTCCTTTCTGTGCAAATCTCCGTGC
Gh_A09G2473_mRNA 1199 TTGTG-GACAATCAGGTGATGTTCAATAACTCGTGTTCCTTTCTGTGCAAATCTCTGTGC
Gh_A09G2473 1139 CTAAC TGGCCCCAATGCGTTGTTGGAAGAGCATTTGTGGTTTC---ATCAGCTTGAGGAT

Gh_D09G0858 1318 ATTCATTT-CTCTTATGTGTCTGCATGAATAATTTCCCTTTTCAATGTGATCCTGTATAC
Gh_A09G2473_mRNA 1258 ATTCATTTTCTCTTATGTGTCTGCATGAATAATTTCCCTTTTCAATGTGATCCAGTATAC
Gh_A09G2473 1196 GATC-TTGAAAAGGAGTGGCAGAGGCAACAATTGT-----GGACAATCAGGAGCAC

Gh_D09G0858 1377 TTTCTCAGTTGCTAAACTATGACTCTCTTGTGCAGATACCACTAAGTGGCCCCAATGCGG
Gh_A09G2473_mRNA 1318 TTTCTCAGTTGCTAAACTATGACTCTCTTGTGCAGATACCACTAAGTGGCCCCAATGCGG
Gh_A09G2473 1247 ATT-TCAATCCTAACAAATATGACACA-TGGTGCTCCTGAGGATGAAGTACGCCA-TGCGG

Gh_D09G0858	1437	TTG---TTGGAAGAGCATTGTGGTTCATGA-GCTTGAGGATGATCTTGAAAGGGTAAT
Gh_A09G2473_mRNA	1378	TTG---TTGGAAGAGCATTGTGGTTCATGA-GCTTGAGGATGATCTTGAAAGGGTAAT
Gh_A09G2473	1304	GTGACCTGGGAAACATAATTGCTAATGCTGATGCATGAGTATGGTGACACAACGAATGGG
Gh_D09G0858	1493	TATTTGGCTTGCAATTCTAGCAGCTGCTTTAGTAGGAAACTTACCTCAAAGTTGCAGAG
Gh_A09G2473_mRNA	1434	TATTTGGCTTGCAATTCTAGCAGTTGCTTTAGTAGGAAACTTCCCTCAAAGTTGCAGAG
Gh_A09G2473	1364	TGCATGTCT-ACAGGTCCTACAACCTGTGAATGTTTCAATTACTGGTCTTACTCCTGGGCC
Gh_D09G0858	1553	GGAAGAGTGATGTG-AGTGGCTATTTACTTCTTAGTTTTATTTTTCTTATATTTTTGTTT
Gh_A09G2473_mRNA	1494	GGAAGAGTGACGTGTAGTGGCTATTTACTTCTTAGTTTTATTTTTCTTATATTTTTGTTT
Gh_A09G2473	1423	TCATGCCCTTCCACCCTAATGGCTGCCCATATTTTCAACGACAACCCCGTCCCACCTC-----
Gh_D09G0858	1612	GGTCATGCATTTGCAGGTGGACATGAACCTTAGTCTAACCACTGGGAATGCTGGCGGAAGA
Gh_A09G2473_mRNA	1554	GGTCATGCATTTGCAGGTGGACATGAACCTTAGTCTAACCACTGGGAATGCTGGCGGAAGA
Gh_A09G2473	1478	GCTCTCTCTTTTCCATCCTCA-ACTAACCCCTTCAAACCCACCGGTTCTTCTCTCCTCATT
Gh_D09G0858	1672	TTGGCATGTGGTATGTACATGTGTACTTTTTATCTACATGCT-----
Gh_A09G2473_mRNA	1614	TTGGCATGTGGTATGTACATGTGTACTTTTTATCTACATGCTTATATGTTTCCAGAACAGA
Gh_A09G2473	1537	TCC---TGGGTCTCT-CTTAAGCTCCCTCGTCAAATCCCTC-----
Gh_D09G0858	1713	-----ACATTTTCCAGACTCTCATCTCTGGTTTCCTTTTCTTGCATCTA-TG
Gh_A09G2473_mRNA	1674	CATGAAATTCATTACATTTTCCAGACTC--ATCTCTGGTTGC-TTTTCTTGCATCTA-TG
Gh_A09G2473	1574	-----TCCCTTGGCTGCTACTATTCCCAAGAAGCCCTTTTCTGTGTTTGGCTG
Gh_D09G0858	1759	TTTTGAGCAGAATCATCTTTAG-CCTGATTATTATAGTTAAGCAAAAAGCACATTAGTAA
Gh_A09G2473_mRNA	1730	TTTTGAGCAGAATCATCTTTAG-CCTGATTATTATAGTTAAGCAAAAAGCACATTAGTAA
Gh_A09G2473	1620	TTACCAAGAAAGCTCTCGCTGTTCTTAAAGGTAATTCGGAAGTTGAAGGCG--TTGTCAC
Gh_D09G0858	1818	CTTGAAGAATGCTGCAGCTTGTGTACCAGTTTTCTATAGCCTTCAGTTTGTGTTTGT
Gh_A09G2473_mRNA	1789	CTTGAAGAATGCTGCAGCTTGTGTACCATTTTTCTATAGCCTTCAGTTTGTGTTTGT
Gh_A09G2473	1678	GTTGACCCAGGAAATGATGGGAAGGGTTGATATGCAAGCTCAAGCT-GTATTTGTGG
Gh_D09G0858	1878	TTTTTGTTCACTTTCATTGTCTCAGCTCAAGCCTTGATTTTGCTTGCGGGGATGATTCTGT
Gh_A09G2473_mRNA	1849	TTTTTGTTCACTTTCATTGGCTCAGCTCAAGCCTTGAATTTGCTCAGGGGGATGATTCTGT
Gh_A09G2473	1737	GGTCTGATCA--TCATCATCAAG----AAGCCTTGATCATGAAAGGCAAGCGTACCAAGC
Gh_D09G0858	1938	GTTTGAT----TCAAACCTTTTCTCGAAACCTGACAAAATTAAATCTTTAGTATATTAGAT
Gh_A09G2473_mRNA	1909	GTTTGAT----TCAAACCTTTTCTCGAGACCTCACAAAATTAAATCTGTAGTATATTAGAT
Gh_A09G2473	1791	GCCAAAGATCGCCATCCCTGTTTGGTGTGCGGCTGACTTCGAGCTCATCAAATGGTGG--
Gh_D09G0858	1994	CCTTCAGCTTGATGCAATTCATTCATTCAATTTGTATGTATGTTTGGAGGGAGGGGATTT
Gh_A09G2473_mRNA	1965	CCTTCAGCTTGATGCAATTCATTTATTCATTGTATGTATGTTTGGAGGGAGGGGATTT
Gh_A09G2473	1849	-TGATCGAGTGTGAGGAAATATAACTCGATTTCTTCTCCGATGACATCCGATGAGATTT
Gh_D09G0858	2054	AAAAGGCCATGGGTAGGACAAGGACAGATAGGTTTAAAGGTTTGGATATATTTGCAGCCTC
Gh_A09G2473_mRNA	2025	AAAAGGCCATGGGTAGGACAAGGACAGATAGGTTTAAAGGTTTGGATATATTTGCAGCCTC
Gh_A09G2473	1908	ACGAGAGCACCGA-GGAAGAAGAGGAGAT-GGCTAATTCCTTAATCATGTTGGCAC----
Gh_D09G0858	2114	TTAAGACTGATAACCCATCTCAGATGGACCCTTGAACGT---TTTGAAATACTTG-TGCA
Gh_A09G2473_mRNA	2085	TTAGGACTGATAATCCATCTCAGATGGACCCTTGAACGT---TTTGAAATACTTG-TGCA
Gh_A09G2473	1962	---AAAAGTGAATGGTCC-CAAAAGGAGTACTGTTGAAGCGAAATTCAGATAGCTACTAAG

Gh_D09G0858	2170	TTGACTATGGCTTGGCAATGAA	CATGGTGGTGTACGTATCTATCTTCTTTTTGTTGGACA
Gh_A09G2473_mRNA	2141	TTGACTATGGCTTGGCAATGAT	CATGGTGGTGTACGTATCTATCTTCTTTTTGTTGGACA
Gh_A09G2473	2018	ACAAACAAGGGTGA	GCTTTATGTCCACGAGTGTA-AAACTTGTAAACCGGTCTTTC--CCT
Gh_D09G0858	2230	TAGTTTTGTCAATTCTGCGTTCCGTTT	GAGACGGACTAAGTTATCTTTAGTCC
Gh_A09G2473_mRNA	2201	TAGTTTTGTCAATTCTGCT	GTTCCGTTT
Gh_A09G2473	2075	TCCACTAGGAGGCCATATG	CAAGCCACAAGAAGCCCTAAAGGCGCCATTG
Gh_D09G0858	2290	TTTGATGTCTATGCGAATGTTCTTTTCC	CACATAAACATCCTATT
Gh_A09G2473_mRNA	2261	TTTGATGTCTATGCGAATGTTCTTTTCC	CACATAAACATATATTATT
Gh_A09G2473	2133	CAGACCA	GAAAAGACCACTAGT
Gh_D09G0858	2350	TACATCAAACATTATACTGAATTTGTAAC	TTCCCTCTCATCTTCTTCTGATAATGTCTGTG
Gh_A09G2473_mRNA	2321	TACATCAAACATTATACTGAATTTGTAAG	TTCCCTCTCATCTTCTTCTGATAATGTCTGTG
Gh_A09G2473	2192	AGCAACAAAAGG	TAAATAAAATTCACGAGTGCTCA-ATCTGTGGCTCGGAATTCACGTC
Gh_D09G0858	2410	CAGGTGTTGTTGGCTTGACTCCGGTATAAAATC	TATCGATGAAACCAGTTTGGTGTTC-
Gh_A09G2473_mRNA	2381	CAGGTGTTGTTGGCTTGACTCCGGTATAAAATC	TATCGATGAAACCAGTTTGGTGTTC-
Gh_A09G2473	2251	C-GGTCAA	CCCTCGGAGGTCACATGAGAA
Gh_D09G0858	2469	-GCTATTTGTTGGTTGGATTTGGCAGCTTCTC	TTATAGAGCCGCATGTGATGTTGCTTTC
Gh_A09G2473_mRNA	2440	-GCTATTTGTTGGTTGGATTTGGCAGCTTCTC	TTATAGAGCCGCATGTGATGTTGCTTTC
Gh_A09G2473	2309	AGCAACCAAGAT	CCATGAATGGCAATGATGACATCAAGCCTAGGAATATTACGCCTTTG
Gh_D09G0858	2528	AATGTTGATAGCGTGT	TATATGAGATTGTGCAGACAAGTATTTAGT
Gh_A09G2473_mRNA	2499	AATGTTGATAGCGTGT	TATATGAGATTGTGCAGACAAGTATTTAGT
Gh_A09G2473	2369	GATCTTAAT--CTTCC	TGCACCTGAAGATGATGTTAGAGATTCCAT--GTTCCG
Gh_D09G0858	2588	AGACCTTTGTTATGTCATTATTA	TCAACCCAATAAAAAATTAGCACATGGCTTGTGAACC
Gh_A09G2473_mRNA	2559	AGACCTTTGTTATGTCATTATTA	TCAACCCAATAAAAAATTAGCACATGGCTTGTGAACC
Gh_A09G2473	2425	AA	CAACCCCAACAAGCTATTGCTTTC--TCCACACCAGCTTTGGTAGATTGCC-ATTACTA
Gh_D09G0858	2648	TGCAGACTGTAAAAC	TTGCCTTTTTGAGCTTATGAAATTTTATGGT
Gh_A09G2473_mRNA	2619	TGTAGACTGTAAAAC	TTGCCTTTTTGAGCTTATGAAATTTTATGGT
Gh_A09G2473	2482	ACTCGAC-ATGAACTTAGTCT----	AACCAC
Gh_D09G0858	2708	GGAAATTATGATGCCTT	CTTGTAGTCAGTTATATCTCTGCTTCTCCTGGGAGTTGAGATC
Gh_A09G2473_mRNA	2679	GGAAATTATGATGCCTT	CTTGTAGTCAGTTATATCTCTGCTTCTCCTGGT
Gh_A09G2473	2529	GGCA--TGTGATA	CC-----ACTAAGTGC
Gh_D09G0858	2768	TGTAATTTGGCCGACCAA	ACTCTCAATCCCTACCTGTG
Gh_A09G2473_mRNA	2739	TGTAATTTGGCCGACCAA	ACTCTCAATCCCTACCAGTGATGGGTGGAAGTATAAAATTGC
Gh_A09G2473	2578	TGTGCTTCA--TGAGCTT	GAGGATGATCTTGCAAAGGGAGTGGCAGAGGCA-ACAATTGT
Gh_D09G0858	2828	ACAAAAAT	TATAATCATTAGTTATCTTATATAATATTA
Gh_A09G2473_mRNA	2799	ACAAAAAT	TATAATCATTAGTTATCTTATATAATATTA
Gh_A09G2473	2635	C-GACAAT	CAGGAGCACATTTCAATCCTAACAATATGACACAT-----GGT
Gh_D09G0858	2888	ATCTCTAGCAACTCCACCCCT	TACCTCTCATAATGAGAAAAAAAAAAAAAGAGGTTTGTCT
Gh_A09G2473_mRNA	2859	ATCTCTAGCAACTCCACCCCT	TACCTCTCATAATGAGAAAAAAAAAAAA-----GGTTTGC
Gh_A09G2473	2688	CGATGAA	GTA-----CGCCATGCGGGTGACC-TGGGAAACATAA-----TTGCTA

Gh_D09G0858 2948 TTGCTGACTAGCGAGATCGGATTGGCTAGATGAAGAATTGGTCATGGTATCGGTTCTAAA
Gh_A09G2473_mRNA 2914 ATGCTGACTAGCGAGATTGGATTGGCTGGAGGAAGAATTGGTCATGGTATCGGTTCTAAA
Gh_A09G2473 2732 ATGCTGATGCAATGAGTATGG--TGACACAACGAATGGTGCATGTC-TACAGGTCCTACA

Gh_D09G0858 3008 ----TAAAGGCTTGGAGTGGTTGACTTGTAAATATGTTCAAATTGATTAATCAGATCGAT
Gh_A09G2473_mRNA 2974 ----TAAAGGATTGGAGTGGTTGATTTGTGAATAAGTTCAAATTGATTAGTCGGAACGAT
Gh_A09G2473 2789 ACTGTGAATGTTTCAATTACTGGTCTTACTCCTGGGCCTCA-TGGCTTCCACCTAATGGC

Gh_D09G0858 3064 CAAATTAATTTTTTAAAAATATTTTTTAAATTTTTTAAATAATCTATTCATTTAAAGTAAAC
Gh_A09G2473_mRNA 3030 TAAATTGATTTTTTAAAAATATTTTTTAAATTTTTTAAATAATTTATTCATTTGAACTAAAC
Gh_A09G2473 2848 TG--CCCATATTTTTCAACACAACCCCTCCCACCTCCCTCTCTCTTT-TCCATCTCAAC

Gh_D09G0858 3124 AAATTCATCAGATTAGTTGAACTGACTGAAAAGAAATAGTTTAATTGGTTCCACCACCGA
Gh_A09G2473_mRNA 3090 AAATTCATCAGAT-----GAAAATAAATAGTTTAATTGGTTTCACCACCGA
Gh_A09G2473 2905 TAACCCCTTCAAAC-----CCACCAGTTCTTCTCTCT

Gh_D09G0858 3184 CTTGCTTTGCTACCTCTCACAGCCTCTT-----
Gh_A09G2473_mRNA 3136 CTTGCTTTGCTACCTCTCACAGCCTCTTTCGTGGTAAGAGTTCAACAACGGCAGGAAAC
Gh_A09G2473 2937 CATTTTCGTGGGTCTCTCTTAAAGCTCCCTCGTCA-----

Gh_D09G0858 3212 -----GCGGCTGTGCGATGTTCTTACCTCCCACAAACTGACATCATTTATTTAT
Gh_A09G2473_mRNA 3196 GGCAAAGAAATGCGGCTGTGCCATGTTCTTACCTCCCACAAACC AACATCATTTATTTAT
Gh_A09G2473 2971 -----ATCCCTCTCCCTTGCTGCTACTATTCCAAG--AAGCCCTTTTCTGTGT

Gh_D09G0858 3261 TGATTAATTTCTGTACATTC AACCTTCATTTTTTTTATCACAACCTTTTTTAAATAAAAT
Gh_A09G2473_mRNA 3256 TGATTGATTGCCTGTACATTC AACCTTCATTTTTTTA--TACAACCTTTTTTAAATAAAAT
Gh_A09G2473 3018 TTCTG-TTACCAAGA----AAGCTGTCCCTGTTCTTA----AAGGTAATTGGAAGTTG

Gh_D09G0858 3321 GGGACATA--ATATTC AATTGAGATAGAAAGTCTTTAAATCTTGAATTAATTTTTTACG
Gh_A09G2473_mRNA 3314 GGGACATATAATATTC AATTGAGATAGAAAGTGTTTAAATCTTGAATTAATTTTTTACG
Gh_A09G2473 3069 AAGCCGT----TGT CACGTTGACCCAGGAA-----AATGATGGGGAAG-----

Gh_D09G0858 3379 TAGTTTAAATATCGCAATATATCTTATTATTTATTCAATATGTTGACTAATATTAATTTTT
Gh_A09G2473_mRNA 3374 TAGTTTAAATATCGCAATATATCTTATTATTTATTCAATATGTTGACTAATATTAATTTTT
Gh_A09G2473 3108 -CGGTTGATAT-GCAAAGCTCAAGCTGTATTTGTGGGGTCTGATCATCATCATCAAGAAGC

Gh_D09G0858 3439 GTTAAAATCATGGATCACA AATCCTATACCACACCAATTAATCAAAAAACGAATC-TGT
Gh_A09G2473_mRNA 3434 GTTAAAATCATGGATCACA AATCCTTACCACACCAATTAATCAAAAAACGAATC-TGT
Gh_A09G2473 3166 CTTGA--TCATGAAAGGCAAG-----CGTACCAAGGCCCAAAGATCGCCATCCCTGT

Gh_D09G0858 3498 TGGGTGATGCATGAACCTT CAGAAGGAGCTTCGTTGGAAACAATGAACTTTGCTGCGTA
Gh_A09G2473_mRNA 3493 TGGGTGATGCATGAACCTT CAGAAGGAGCTTCGTTGGAAACAATGAACTTTGCTGCGTA
Gh_A09G2473 3216 TTGCTGTCGCCGTGACTTC-----GAGCT-CATC--AAATGGTG-----GTGATGGA

Gh_D09G0858 3558 TTTGTGGATAAA-ATAAACTACTGCTTTTTAACATTTGTTATTTT CAGAATCTTTCTTAGATT
Gh_A09G2473_mRNA 3553 TTTGTGGATAAA-ATAAACTACTGCTTTTTAACATTTGTTATTTT CAGAATCTTTCTTAGATT
Gh_A09G2473 3260 GTCTGGAGCAATATAA CTCGATTTCTCCGATGACATCCGATGAGATTTACGAGAGC

Gh_D09G0858 3617 TGCCAAAACCTGTCATGCATGCCACTTTGATCTCAACTGCTGTTGTTGTTGGCTCTTTTT
Gh_A09G2473_mRNA 3612 TGCCAAAACCTGTCATGCATGCCACTTTGATCTCAACTGCTGTTGTTGTTGGCTCTTTTT
Gh_A09G2473 3320 ACCGAGGAAGAGAGGAGATGGCTAAATG--CCTAATCA-----TGTGGCACAAAGT

Gh_D09G0858 3677 TATGGCTCGGGCAAAGCCAATGCTAAATTGCTACAGTGAAATGGCTAGTTTGGGAAACTA
Gh_A09G2473_mRNA 3672 TATGGCTCGGGCAAAGCCAATCCTAAATTGCTACAGTGAAATGGCTAGTTTGGGAAACTA
Gh_A09G2473 3371 GATGGTCCCAAAGGAGTACTGTTGAAGCGAAATT-CAAGATAGCTACTAAGACAAACAA

Gh_D09G0858 3737 AGAACTGGAACTTAAGCATAATGGAGTTGATATTTTAATCGTTTTCAGCATGCATACCAAG
Gh_A09G2473_mRNA 3732 AGAACTTGGAACTTAAGCATAATGGAGTTGATATTTTAATCGTTTTCAGCATGCATAACAAG
Gh_A09G2473 3430 GGG-----TGAGCTTTATG-----TCCACGAGTGTAAAACCTTGTAACCGG

Gh_D09G0858 3797 ATTATAGACTTGTGAGCTTTTTCATTGAAGAACCCTTTTGTAGTATCACTTAATCAGTTG
Gh_A09G2473_mRNA 3792 ATTATAGACTTGTGAGCTTTTTCATTCAAGAACCCTTTTGTAGTATCACTTAATCAGTTG
Gh_A09G2473 3470 TCTTCCCTTCGT--CCAAGCACT-AGGAGGCCATATGGCAA-GCCAC--AAGAAGCCT

Gh_D09G0858 3857 ATTCTATGATGGCANCCC-CCCCCCCCGCCCAAAAATAAATACCATACTTGATTTGAT
Gh_A09G2473_mRNA 3852 ATTCTATGATGGCATCTCAATGCGAGACCCCCCCCCNNNNNNNNNNNNNNNNNNNNNN
Gh_A09G2473 3524 A----AAGCGCCATGCGAGCAGAAAAGACCCTAGTTTTGGCAGTTAATGATGCAGT

Gh_D09G0858 3916 CAAATTATGATGACAAAAGAGAAGGGGGGGGAGCTGGCGTGAAAGTAACCAGAATCTATAT
Gh_A09G2473_mRNA 3912 NNNNNNNNNNNNNNNNNNNNGGGGGGGGGGGAGCTGGCGTGAAAGTAACCAGAATCTAT--
Gh_A09G2473 3580 CATTGCTTTACGAGTAAGCAACAAAAGGGTAATAAAATTCACGAGTGTCAATCTGTGG

Gh_D09G0858 3976 GAGGGAACCTCAAATT-GATTAGGGTGTGGTATTTTGCCTTTAAGAAGACATGGAGTGAATG
Gh_A09G2473_mRNA 3970 GAGGGAACCTCAAATT-GATTGGAGTGTGGTATTTTGCCTTTAAGAACACATGGAGTGAATG
Gh_A09G2473 3640 CTCGGAAATCACCTCCGTCAGGCCCTCGGAGGTCAAT-GAGAAGGCATAGGAC-AGCA

Gh_D09G0858 4035 AAGGTAGCATCCCATGCTTTTTTAACGTGCAGTTCCTCATTCCCTTTTGCTTTAATTTAATA
Gh_A09G2473_mRNA 4029 AAGGTAGCATCCCATGCTTTTTTAACGTGCAGTTCCTCATTCCCTTTTGCTTTAATTTAATA
Gh_A09G2473 3698 TCAGCAGCTGTGCAAGCAACCAGATGCCATGAATGCCAATGATGACATCAAGCCTAGG

Gh_D09G0858 4095 ATAACATATTGTTATTATATATGGAGTGACTTGGGTGGGTGTGTGTGAACTCTGAAACTCT
Gh_A09G2473_mRNA 4089 ATAACATATTGTTATTATATATGGAGTGACTTGGGTGGGTGTGTGTGAACTCTGAAACTCT
Gh_A09G2473 3758 AATAATTAC-GCCTTTGATCTTAATCTTCTGCACC--TGAAGATGATGTTAGAGATTCC

Gh_D09G0858 4155 CTCTTGACGTTAAGAACAACCTCAATTGAAGTGTCCCTAACTCCCATTTTTTGCCCCTTTTCG
Gh_A09G2473_mRNA 4149 CTCTTGACGTTAAGAACAACCTCAATTGAAGTGTCCCTAACTCCCATTTTTTGCCCCTTTTCG
Gh_A09G2473 3815 ATGTTGCAATTTGGAACACCCCAAC-AAGCTATTGTCTTCTCCACACCAGCTTTGGTAGA

Gh_D09G0858 4215 CCACC-CTATCTTTTCCACCTAATGCTCAACTCATATCTTTACCTAC--ACTTATTGTAG
Gh_A09G2473_mRNA 4209 CCACC-CTATCTTTTCCACCTAATGCTCAACTCATATCTTTACCTAC--ACTTATTGTAG
Gh_A09G2473 3874 TTCCATTACTAAGTGGACATGAAGTACTTAACCACTGGGAATGCTGGCGGAAGATTG

Gh_D09G0858 4272 TCCTATCATCTCCCTAAGATGCTTGTTAACCAACCTAAATACGTAGTT-TATTTGATTG
Gh_A09G2473_mRNA 4266 TCCTATCATCTCCCTAAGATGCTTGTTAACCAATCCTAAATACATAGTT-TATTTGATTG
Gh_A09G2473 3934 GCATCTGATACCACTAAGTGGCCCCCAATCGGGTTGTTGGAAACAGCATTGTGGTTTCATGA

Gh_D09G0858 4331 TCTTAAATAATTGTCCTAATTCTAAATCAAATATTCCTCCATTTCTTTGTAATTAGAGA
Gh_A09G2473_mRNA 4325 TCTTAAATAATTATCCTAATTCTAGACCAAATATTCCTCCATTTCTTTGTAATTAGAGA
Gh_A09G2473 3994 GCTTGAC-GATGATCTTGGAAAGGGAGTGG-CAGAGGCAACAATTGTGGCAATCAGG--

Gh_D09G0858 4391 AATACATAATTATACCAACAATAAAAATAAACAATAAATCTCTGTGTGCGAGTAACTCTT
Gh_A09G2473_mRNA 4385 AATACATAATTATACCAACAATAAAAATAAACAATAAATCTCTGTGTGCGAGTAACTCTT
Gh_A09G2473 4050 AGCACATTTCAATCTTAACAATA--TGACACATGGTCTCTGAGGATGAAGTACGCCAT

Gh_D09G0858 4451 ACTCCTAAAAAACCCTAAAT-TGCACACAAGGAATTAAGGGGAGTAATTTTATGA
Gh_A09G2473_mRNA 4445 ACTACTAAGAAAACCCTAAATCACGCACACAAGGAATTAAGGGA-AGTAATTTG-ATGA
Gh_A09G2473 4108 GC----GGGTGACC TGGGAAACATAATTGCTAATGCTGATGCATGAGTATGGTGACACAA

Gh_D09G0858 4510 TGAAAGTAAAAACTTTTCTTTCTACAGTAGCTTTTAAAAGTTGGAAAT---GGAAAGAAA
Gh_A09G2473_mRNA 4503 TGAAAGTAAAAACTTTTCTTTCTACTAGTAGCTTTTAAAAGTTGGAAAT---GAAAAGAAA
Gh_A09G2473 4164 CGAATGGGTGCATGTCCTACAGGTCCTA-CAACTGTGAATGTTCCGAATTACTGGTCTTACT

Gh_D09G0858 4567 AAAGAAGTGGGTGTTTTATAAGCAACAATAGTTATACTATTCATGGGCGGCTTTTCTGAG
Gh_A09G2473_mRNA 4560 AAAGAAGTGGGTGTTTTATAAGCAACAATAGTTATACTATTCATGGGCGGCTTTTCTGAG
Gh_A09G2473 4223 CCTGGCCTCA TGGCTTCCACCTAATGGCTGCCATAATTTTCACGACAACCCCGTCCAC

Gh_D09G0858 4627 TTTTGACTCCAAAAATAACTGTCACCCTTCTTGTC--TTTACTATATATAAGAACCCCA
Gh_A09G2473_mRNA 4620 TTTTGACTCCAAAAATAACTGTCACCCTTCTTGTC--TTTCTATATATAAGAACCCCG
Gh_A09G2473 4283 CTGCTCTCTCTTTTCCATCCCTCAACTAACCCCTCAACCCACCGGTTCTTCTCTCTCA

Gh_D09G0858 4685 TTTC-----TCCATCTATGCTTCCTCCGTGATCATTTTTTGCTCTTTCTAGCTGTTAC
Gh_A09G2473_mRNA 4678 TTTC-----TCCATCTATGCTTCCTCCGTGATCATTTTTTGCTCTTTCTAGCTGTTAC
Gh_A09G2473 4343 TTTCGTGGGGTCTCTCTTAAGCTCCCTCGTCAATCCCTCTCCCTTGTCTGCTA-CTATTCC

Gh_D09G0858 4738 TCATTTTCTTTTGGTTAGGTCACACTACTTGCTTGTGTTGTTGAGTACAATTTTATGTCTT
Gh_A09G2473_mRNA 4731 TCATTTTCTTTTGGTTAGGTCACACTACTTGCTTGTGTTGTTGAGTACAATCTTATGTCTT
Gh_A09G2473 4402 CAAGAAGCCCTTTTCTCTGTT-TGCTGTTACCAAGAAAGCTGTGCTGTTCTTAAAGGTA

Gh_D09G0858 4798 TTCTAAGTCTTTCATACTATTTTTGACTGGGTTTTGG---TTTAGGGGAAGGGGTGATA
Gh_A09G2473_mRNA 4791 TTCTAAGTCTTTCATACTATTTTTGACTGGCTTTTTGG---TTTAGGGGAAGGGGTGATA
Gh_A09G2473 4461 ATTCCGAAGTTGAAAGCGTGTGTCACGTTGACCCAGGAAAATGATGGGGAAGGGGTGATA

Gh_D09G0858 4855 TGCAAGCTCAAGCTGTATTTGTGGGGTCTGATCATCATCTTCATCAAGCCTTGATCATGA
Gh_A09G2473_mRNA 4848 TGCAAGCTCAAGCTGTATTTGTGGGGTCTGATCATCATCATCAAGAAGCCTTGATCATGA
Gh_A09G2473 4521 TGCAAGCTCAAGCTGTATTTGTGGGGTCTGATCATCATCATCAAGAAGCCTTGATCATGA

Gh_D09G0858 4915 AAGGCAAGCGTACCAAGCGCCAAAGATCGCCATCCCTGTTTGGTGTGCGGGTACTTCGA
Gh_A09G2473_mRNA 4908 AAGGCAAGCGTACCAAGCGCCAAAGATCGCCATCCCTGTTTGGTGTGCGGGTACTTCGA
Gh_A09G2473 4581 AAGGCAAGCGTACCAAGCGCCAAAGATCGCCATCCCTGTTTGGTGTGCGGGTACTTCGA

Gh_D09G0858 4975 GCTCATCAAATGGTGGTGTGAGTGGTGGAGGAATATAACTCGATTTCTTCTCCGACGA
Gh_A09G2473_mRNA 4968 GCTCATCAAATGGTGGTGTGAGTGGTGGAGGAATATAACTCGATTTCTTCTCCGATGA
Gh_A09G2473 4641 GCTCATCAAATGGTGGTGTGAGTGGTGGAGGAATATAACTCGATTTCTTCTCCGATGA

Gh_D09G0858 5035 CATCCGACGAGATTTACGGAGCACCAGGAAGAAGAGGAGATGGCTAATTGCCTAATCA
Gh_A09G2473_mRNA 5028 CATCCGATGAGATTTACGAGAGCACCAGGAAGAAGAGGAGATGGCTAATTGCCTAATCA
Gh_A09G2473 4701 CATCCGATGAGATTTACGAGAGCACCAGGAAGAAGAGGAGATGGCTAATTGCCTAATCA

Gh_D09G0858 5095 TGTGGCACAAAGTGATGGTCCCAAAGGAGTACTGTTGAAGCGAAATTCAGATAGCTA
Gh_A09G2473_mRNA 5088 TGTGGCACAAAGTGATGGTCCCAAAGGAGTACTGTTGAAGCGAAATTCAGATAGCTA
Gh_A09G2473 4761 TGTGGCACAAAGTGATGGTCCCAAAGGAGTACTGTTGAAGCGAAATTCAGATAGCTA

Gh_D09G0858 5155 CTAAGACAAAACAAGGGTGAGCTTTATGTCCACGAGTGTAACCTTGTAAACCGGCTTTCC
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Gh_A09G2473 4821 CTAAGACAAAACAAGGGTGAGCTTTATGTCCACGAGTGTAACCTTGTAAACCGGCTTTCC

Gh_D09G0858 5215 CTTCGTTCCAAGCACTAGGAGGCCATATGGCAAGCCACAAGAAGCCTAAAGGCGCCATTG
Gh_A09G2473_mRNA 5208 CTTCGTTCCAAGCACTAGGAGGCCATATGGCAAGCCACAAGAAGCCTAAAGGCGCCATTG
Gh_A09G2473 4881 CTTCGTTCCAAGCACTAGGAGGCCATATGGCAAGCCACAAGAAGCCTAAAGGCGCCATTG

Gh_D09G0858 5275 CAGAGCAGAAAAGACCCTAGTTTTGGCAGTTAATGATGCAGTCATTGCTTTACGAGTAA
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Gh_A09G2473 4941 CAGAGCAGAAAAGACCCTAGTTTTGGCAGTTAATGATGCAGTCATTGCTTTACGAGTAA

Gh_D09G0858 5335 GCAACAAAAAGGGTAATAAAAATTCACGAGTGCTCAATCTGTGGTTCGGAATTCACGTCCG
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Gh_A09G2473 5001 GCAACAAAAAGGGTAATAAAAATTCACGAGTGCTCAATCTGTGGCTCGGAATTCACGTCCG

Gh_D09G0858 5395 GTCAAGCCCTCGGAGGTCACATGAGAAGGCATAGGACAGCATCAGCAGCTGCTGCAAGCA
Gh_A09G2473_mRNA 5388 GTCAAGCCCTCGGAGGTCACATGAGAAGGCATAGGACAGCATCAGCAGCTGCTGCAAGCA
Gh_A09G2473 5061 GTCAAGCCCTCGGAGGTCACATGAGAAGGCATAGGACAGCATCAGCAGCTGCTGCAAGCA

Gh_D09G0858 5455 ACCAAGATGCCATGAATGGCAGATGATGACATCAAGCCTAGGAATATTACGCCTTTGGATC
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Gh_A09G2473 5121 ACCAAGATGCCATGAATGGCAATGATGACATCAAGCCTAGGAATATTACGCCTTTGGATC

Gh_D09G0858 5515 TTAATCTTCCTGCACCTGAAGATGATGTTAGAGATTCCATGTTTGAATTTGGAACACCCC
Gh_A09G2473_mRNA 5508 TTAATCTTCCTGCACCTGAAGATGATGTTAGAGATTCCATGTTTGAATTTGGAACACCCC
Gh_A09G2473 5181 TTAATCTTCCTGCACCTGAAGATGATGTTAGAGATTCCATGTTTGAATTTGGAACACCCC

Gh_D09G0858 5575 AACAAAGCTATTGTCTTCTCCACACCAGCTTTGGTAGATTGCCATTACTAAACAAGGAAAA
Gh_A09G2473_mRNA 5568 AACAAAGCTATTGTCTTCTCCACACCAGCTTTGGTAGATTGCCATTACTAA-----
Gh_A09G2473 5241 AACAAAGCTATTGTCTTCTCCACACCAGCTTTGGTAGATTGCCATTACTAAGTGGACATGA

Gh_D09G0858 5635 TCCTGAACCAA
Gh_A09G2473_mRNA -----
Gh_A09G2473 5301 ACTTAGTCTAA