

Supplementary Figure 1

Supplementary Figure 1: Phenotype of *msh1* and *recA3* mutants after heat stress of 37°C for approximately 24 hours. Pictures were taken 3 days after returning to 24°C following the heat treatment.



Supplementary Table 1: Putative stress responsive genes in the double mutant that do not correspond with induced heat tolerance

AGI	Col-0_2hr heat (Fold change)	Double Mutant_0hr (Fold change)	Gene Description
AT1G17170	0.69	4.28	GST (tau class)
AT5G42800	0.16	4.27	Dihydroflavanol reductase
AT1G03495, AT1G03940	0.6	3.91	Anthocyanin transferase
AT1G03495, AT1G03940	0.23	3.65	Leucoanthocyanidin dioxygenase
AT5G17220	0.21	2.73	GST (phi class)
AT3G16420, AT3G16430	0.58	2.56	PBP1
AT4G14090	0.53	2.3	Anthocyanidin 5-O-glucosyltransferase
AT1G52000	0.41	2.13	Jacalin lectin family protein

Supplementary Table 2: Primers used to amplify mitochondrial transcripts in qRT-PCR analyses.

AGI	Forward Primer (5' – 3')	Reverse Primer (5' – 3')
ATMG00620	ATCGGCCAATCACGCTATCTCCTT	TCCCTCGTGTAGCTATGATGCCA
ATMG00180	TGGTGC GGCTTAGGTCAACTAACA	TCGCAAACAACAACGTTTCCTTCCC
ATMG00690	AGTCAATCGTGCTGCTCTCGATCT	AACGCCTGACGACGCCAGATATTA
ATMG00660	TTGGCGAAGCCAAGTTTCTTTCGG	ACGTACACGCTTCCCTTTACTCCA
ATMG00630	TGCTGAAGTTGCGAATGAAGCGAC	TGATCCGGGAAAGGTTAGTGCCAT
ATMG00210	GATTCCGCGCGGT CAGAAATTCAT	AGTGCTTTGTCTGTGCTAGGTCACT
ATMG00220	AAGCTTAGCTAGCGCCATACCTGT	ATGCAATGCGGCCAGATGAAGAAG
ATMG00080	ACCGGGAAACCCACAGAAGTAAGA	TCGAGCATTTGCCAAACTCACACC
ATMG00980	TATATTTGCTCACATCCC GGCGCA	TCTTCTCGACCCGGAATTCCCAT
ATMG01360	ATGGTTATGCCGGCGATGATAGGT	TAGGAGCAAGAGACTTGGTGGCAA
ATMG00270	ATCCCAGTCTTTCGCGACACTTCA	TCCCACTACTGGTAAATAGCGCA
ATMG00610	AACCACAAGAGTGCTCCAGGAACT	ACGTTCTTCTCCAGCAACAGCCTA
ATMG00470	GCCGGCATTGCAAGCAAATAGAGA	TAGCTTAACCTGAACCCGCAACT
ATMG01350	AGAGGAGAAGCTCTGCTCGACTTT	AGTAGGAAAGGGT GCGTTCCTTGA
ATMG00600	TCATTAATGGGAAATGCGCGGAGC	AAGAGAGGGCAATGAAGAAGGGCT
ATMG00900	TGGGATGCTCGTTTGACCTCTGTA	ATCGGCTAATGCTCCAGGTTGAT
ATMG01120	CGAGTGAGATTGTCATGGCGCAAA	ATTCAGCTTCCGCTTCTGGGAGAT
ATMG01275	TGTGCAACGTAGAAAGGGTCTTGA	CCCGAGCGACCAGACTTAACATAA
ATMG00285	TCCGACCAAGAGAGGTTTGATGCT	AAATATTTGAGCCGGCTTCCGTG
ATMG01320	GCCATGGCCCAAACGAAAGTCAAA	CGGGTTTGCCGTAATGCTGAAACT
ATMG00060	TAGCGGATCAATTCCAACGAGCCT	ATCCGAAACGCAGGAACGATCTGA
ATMG00513	AATCCGCGCAGATAGGATCGCATA	AGTAGCTGCATGAATCGAAGCGGA
ATMG00516	ATATGGGTCCGTGCAGCATTTCCA	AACAGGGACTACCCGAGCTAATGA
ATMG00070	ACCAGTGCAGACGAAGTAACACGA	ACGGCGTAGATCCGGATGATTGAT
ATMG01360	ATGGTTATGCCGGCGATGATAGGT	TAGGAGCAAGAGACTTGGTGGCAA
ATMG00730	TCCATGGCCTATTTCCGGGTTCACT	TAGAACATCGCGCCACCATAACGAA
ATMG01190	ATAGGCCGTGGTCAACGAGA ACTT	TCGAGCGTTTCTGTCCAATCGCTA
ATMG00480	TACGGAACCAACTGCTTTCACACC	ACGGCCTTACACCATTGGGATACT

Supplementary Table 3. List of genes with information regarding expression, relative to Col-0, in *msh1*, *recA3*, and *msh1 recA3*. Genes are considered altered in expression if p-value < 0.1 and absolute log fold change compared to wild type is greater than 1. Table available at <http://psiweb.unl.edu/mackenzie/supp/supp3.xls>

Supplementary Table 4. List of genes with information regarding expression, relative to Col-0 under normal conditions, in *msh1 recA3* under normal conditions, Col-0 under heat stress and *msh1 recA3* under heat stress. Genes are considered altered in expression if FDR < 0.1. Table available at <http://psiweb.unl.edu/mackenzie/supp/supp4.xls>