

Suppl Table 1. Summary of stress tolerance of the different lines

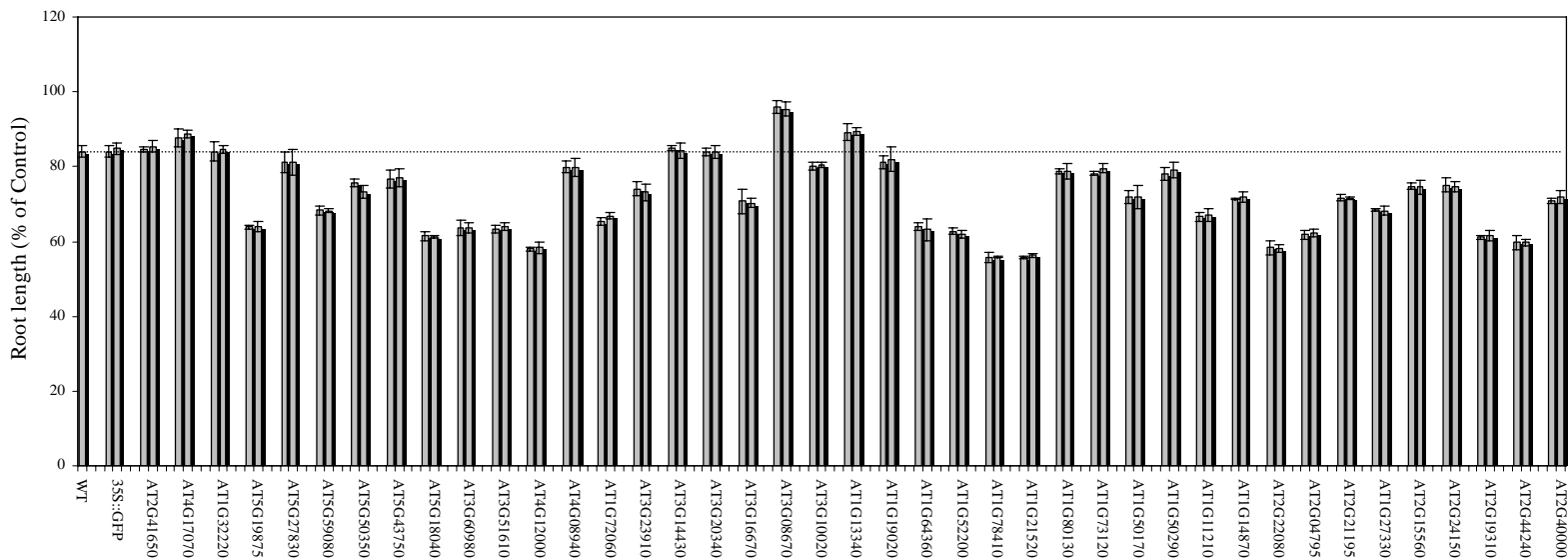
Locus		Annotation	Molecular weight of fusion protein (kD)	t-butyl	Paraquat	Osmotic	Salinity	Heat	Cold	ABA
AT2G41650	Unknown (POF)		53.5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
AT4G17070	Unknown (POF)		72.5	Yellow	Red	Yellow	Yellow	Yellow	Red	Yellow
AT1G32220	Contain NAD-dependent epimerase/dehydratase		78	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
AT5G19875	Unknown (POF)		60.4	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Blue
AT5G27830	Unknown (POF)		79	Yellow	Red	Red	Yellow	Yellow	Yellow	Yellow
AT5G59080	Unknown (POF)		61	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT5G50350	Unknown (POF)		110	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT5G43750	Unknown (POF)		70	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT5G18040	Unknown (POF)		74.7	Red	Red	Yellow	Yellow	Yellow	Yellow	Blue
AT3G60980	Contain pentatricopeptide repeat domain		93.5	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT3G51610	Unknown (POF)		72.2	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT4G12000	Contain SNARE domain		80.5	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT4G08940	Contain Ubiquitin hydrolase domain		92.7	Blue	Red	Yellow	Yellow	Yellow	Red	Yellow
AT1G72060	Contain serine-type endopeptidase inhibitor domain		54.8	Blue	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT3G23910	Unknown (POF)		95	Blue	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT3G14430	Unknown (POF)		55.2	Blue	Red	Yellow	Yellow	Yellow	Red	Yellow
AT3G20340	Unknown (POF)		59.6	Blue	Red	Yellow	Yellow	Yellow	Red	Yellow
AT3G16670	Unknown (POF)		62	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT3G08670	Unknown (POF)		106	Red	Red	Yellow	Yellow	Red	Red	Yellow
AT3G10020	Unknown (POF)		63	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
AT1G13340	Contain DUF292 domain		91.5	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT1G19020	Unknown (POF)		55	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT1G64360	Unknown (POF)		55.1	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Blue
AT1G52200	Contain PLAC8 domain		67	Blue	Red	Yellow	Yellow	Yellow	Yellow	Blue
AT1G78410	Contain VQ motif		58	Red	Red	Yellow	Yellow	Yellow	Yellow	Blue
AT1G21520	Unknown (POF)		53.5	Red	Red	Yellow	Yellow	Yellow	Red	Yellow
AT1G80130	Unknown (POF)		80	Red	Red	Blue	Red	Yellow	Red	Yellow
AT1G73120	Unknown (POF)		58	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT1G50170	Contain Cbix domain		71	Red	Red	Yellow	Blue	Yellow	Yellow	Yellow
AT1G50290	Unknown (POF)		62	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT1G11210	Contain DUF761 domain		81	Red	Red	Yellow	Yellow	Yellow	Yellow	Red
AT1G14870	Contain PLAC8 domain		63	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT2G22080	Contain zinc finger domain		65	Red	Red	Blue	Yellow	Yellow	Blue	Yellow
AT2G04795	Unknown (POF)		56.5	Red	Red	Yellow	Yellow	Yellow	Blue	Yellow
AT2G21195	Unknown (POF)		56.5	Red	Red	Yellow	Yellow	Yellow	Blue	Yellow
AT1G27330	Contain ribosome associated RAMP4 domain		53.6	Red	Red	Red	Red	Yellow	Blue	Yellow
AT2G15560	Contain DUF537 domain		100.4	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
AT2G24150	Contain HlyIII domain		85	Red	Red	Red	Yellow	Yellow	Yellow	Yellow
AT2G19310	Contain HSP20/alpha crystallin domain		64.7	Red	Red	Blue	Red	Yellow	Blue	Yellow
AT2G44240	Contain DUF239 domain		90.8	Red	Red	Blue	Red	Yellow	Blue	Yellow
AT2G40000	Contain Hs1pro-1 domain		95.4	Red	Red	Blue	Yellow	Yellow	Blue	Yellow



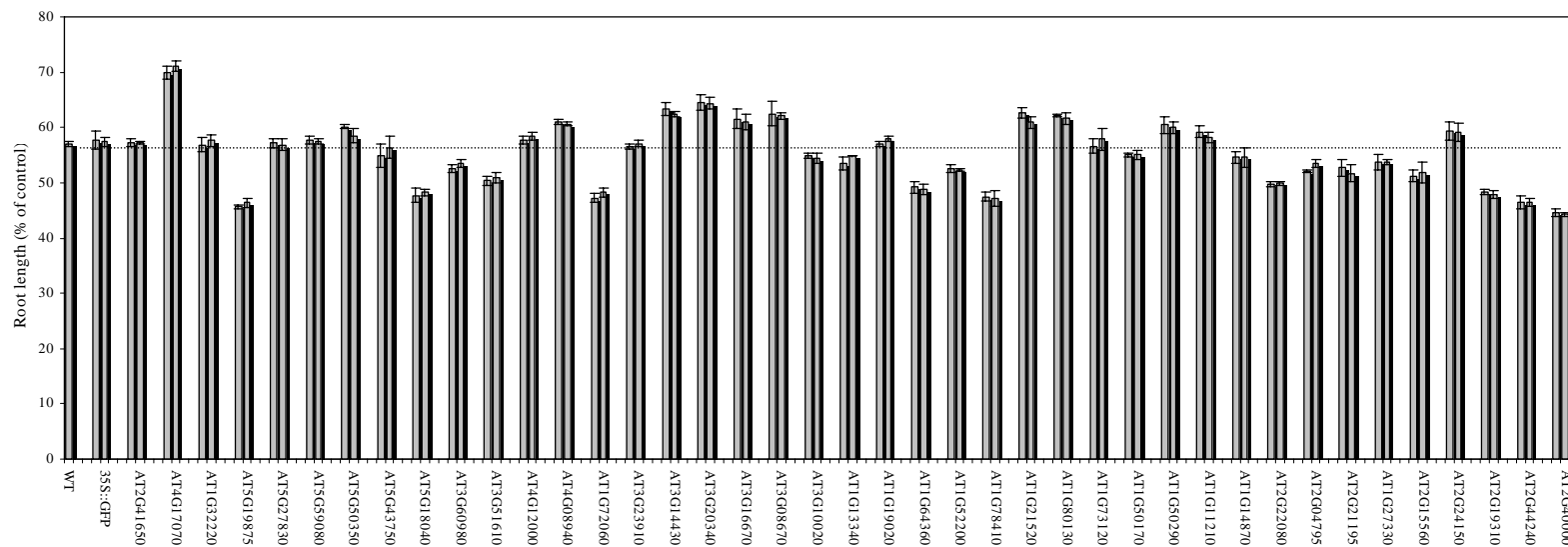
Suppl Table 2. Primers used for the cloning of the different proteins with unknown function

<u>locus</u>	<u>pUni gene</u>	<u>primer</u>	
	clone	forward	reverse
AT2G41650	S66967	gagactcgagATGGCGGCAGCGAGCTTG	gagaactagtGGCTGCTCCATACGCCT
AT4G17070	U14323	gagactcgagATGTGTAGTGGCAACGATG	gagaactagtGAACCGGTTTCTTCTTG
AT1G32220	U17408	gagactcgagATGACTTCGTTTCTTAGT	gagaactagtGCTCTCATTTTTGC
AT5G19875	U61271	gagactcgagATGGCTAGATCACCATA	gagaactagtTTAGCCCCAAACGGGAAC
AT5G27830	U09971	gagactcgagATGGGAAGATGTTTAACG	gagaactagtCCATCAGAGCTTGTCTTCT
AT5G59080	U11769	gagactcgagATGGAGGGTAAAGGACG	gagaactagtCCGTAATAAAGAGAACCTTGC
AT5G50350	U24198	gagagtcgacATGGCGACTTCTGCTTT	gagaactagtCCGATCAATGAGCGGCTAC
AT5G43750	U50098	gagactcgagATGGCAACGGTCACGAT	gagaactagtCGTGTGGCGATATCAT
AT5G18040	U11383	gagactcgagATGAATATGATTACAGCG	gagaactagtCCGTTGATAGATAAGCGT
AT3G60980	U24736	gagactcgagATGTCTCTGATCGGC	gagaactagtCCAAAGAGATGGGAGACCTC
AT3G51610	U24527	gagactcgagATGGCGGGCATGGCTG	gagaactagtCCATCCCCCTTGCCAAAT
AT4G12000	U20042	gagactcgagATGACTTATCACGAAGA	gagaactagtTGTAACAACAAAGCTTC
AT4G08940	U61884	gagagtcgacATGGCTTGGCTTCGTTTCT	gagaactagtCCAATTGCTCCATCTG
AT1G72060	U62101	gagactcgagATGGTTACATACAAGAT	gagaactagtTTGCTACAATGGATAGT
AT3G23910	U19105	gagagtcgacATGGAAGAAGAAACCCA	gagaactagtTTTTGGGAGGATTTATT
AT3G14430	U23423	gagactcgagATGATCGGGCGACGTGC	gagaactagtCCAAACGGCCAGATGTCAGA
AT3G20340	U63078	gagactcgagATGGGGAATTGTTTAAG	gagaactagtCCGTTAACTTCTGGTATGCT
AT3G16670	U22022	gagactcgagATGGCAGTTATCAAGAA	gagaactagtATTGTGGGGATAAAACC
AT3G08670	U61987	gagactcgagATGAATAGGAATCTCAG	gagacctaggAGTGGGGCAAATGGCTCT
AT3G10020	U13057	gagactcgagATGCAGGCGGTATCAGT	gagaactagtCGACCGACCAAGCGAGG
AT1G13340	U51136	gagactcgagATGGGGAAGAAGCTTGAC	gagaactagtCCGTATCCACGAACCTGT
AT1G19020	U11998	gagactcgagATGAACGGAACATCGTG	gagaactagtTGTTTGTGTGTGTTTT
AT1G64360	U61211	gagactcgagATGTCTTTAGAAAAGT	gagaactagtCCGTAATTAGGGAAGTGTT
AT1G52200	U22606	gagactcgagATGGTCTGTCTACTACT	gagaactagtTTAGACATATATTGATT
AT1G78410	U21397	gagactcgagATGTCTGGAAGAGGGAA	gagaactagtccATATTCTGACCATAGT
AT1G21520	U50590	gagactcgagATGAGCTCCGGAGAACT	gagaactagtccGTAGCGAGTGGGATACA
AT1G80130	U09684	gagagtcgacATGTTATTGAGAAGCA	gagaactagtGATGATGCGGTAATAGA
AT1G73120	U60254	gagactcgagATGGCGACTTCTACCTT	gagaactagtGAGAACCAATTAACGA
AT1G50170	U20498	gagactcgagATGACGACTCAGTCGCA	gagaactagtGAACTATTGTAGAGC
AT1G50290	U14460	gagactcgagATGAAGGAGATTAATTTTG	gagaactagtGAGATTTGGCAAAAAC
AT1G11210	U13249	gagactcgagATGGCGTCTGTGGATGAAAG	gagaactagtccATAAGAAAGACCATGAC
AT1G14870	U24063	gagactcgagATGGAAGCTCAACACCT	gagaactagtCGGGTCATGCCGCCT
AT2G22080	U61331	gagactcgagATGGAGTTGAAAGAACA	gagaactagtTTCTTCTCTTCTTTGG
AT2G04795	U12390	gagactcgagATGCTCAAGATGTTGTC	gagaactagtccCATTAAAGAGAGCGTATC
AT2G21195	U23029	gagactcgagATGGAACCGCCGGCCACCG	gagaactagtccATCCAACACATTTGATT
AT1G27330	U22724	gagactcgagATGACAACCTCAAAAAG	agagtctagaGCCATTCTCCACTA
AT2G15560	U61937	gagactcgagATGATACAAAACGCT	gagaactagtACCGGGCTGATGAGTTT
AT2G24150	U10208	gagactcgagATGAAGAGACGAAGATCGG	gagaactagtccAAACCCACAAGAAGGGG
AT2G19310	U18059	gagagtcgacATGTGATGATTCCGAT	gagaactagtccATCATCATCGCCGGTG
AT2G44240	U14883	gagactcgagATGATGGGAGTGGCCG	agagtctagaGGGCATTTAACGTTCT
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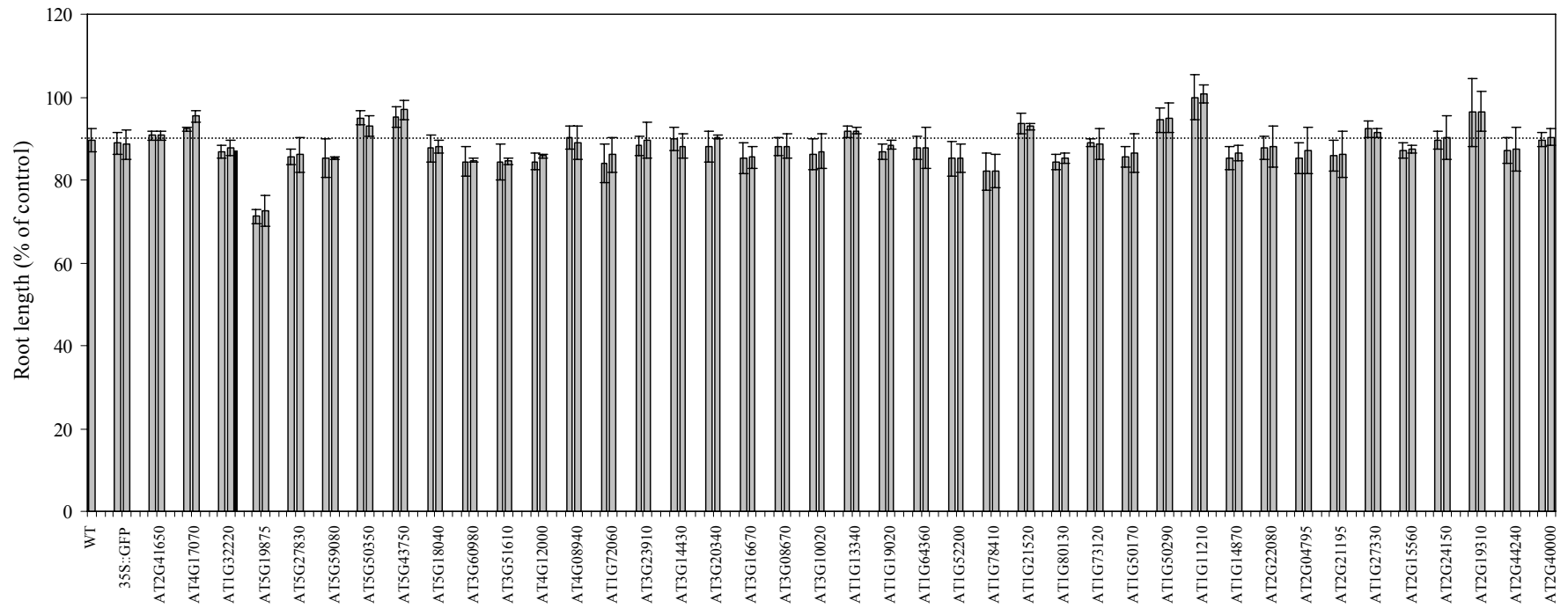
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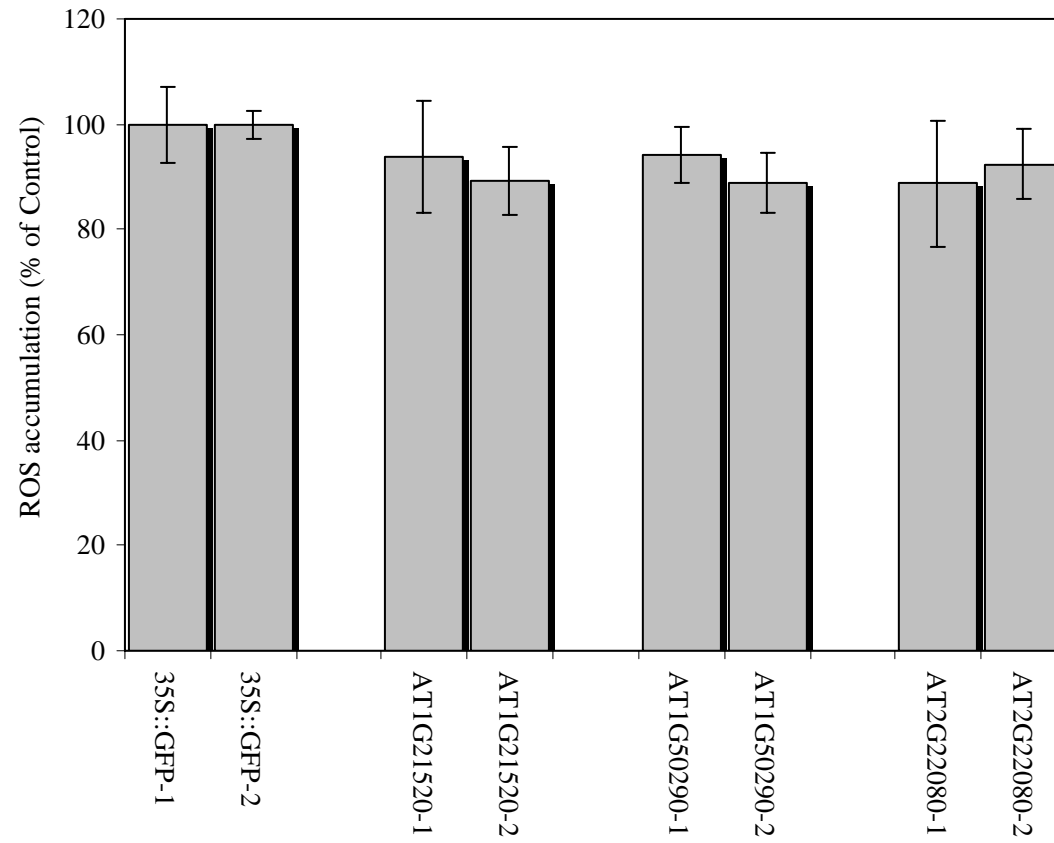
B



Supplementary Figure 1. Effect of **A.** Heat (38°C, 24 hr), or **B.** Cold (4°C, 48 hr) on root elongation of transgenic plants expressing genes of unknown function. All seeds germinated at the same time. Please see method section for experimental details.

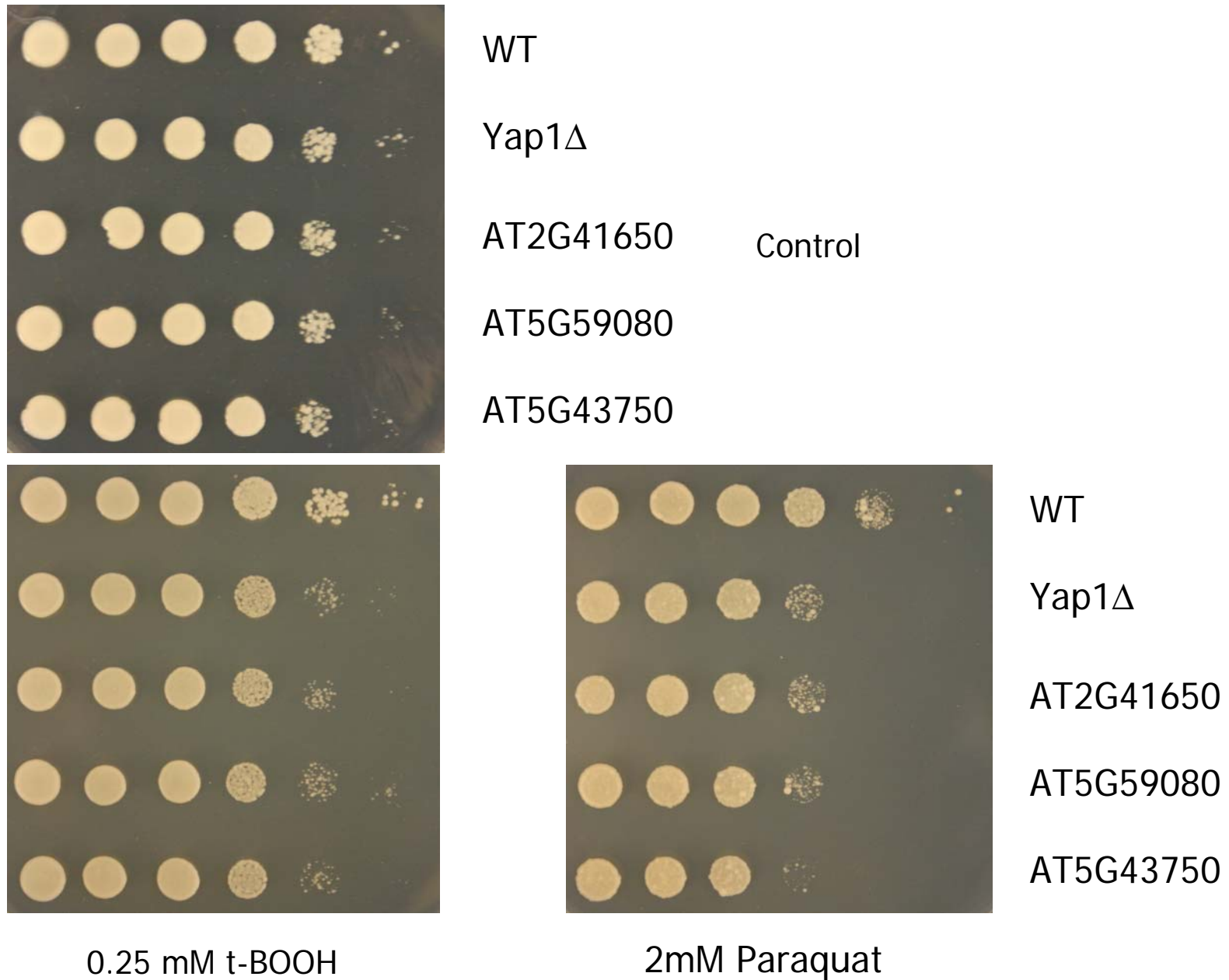


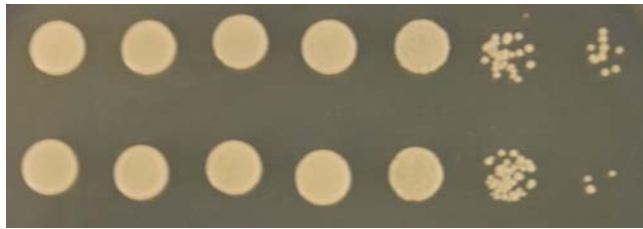
Supplementary Figure 2. Effect of ABA (0.5 μ M) on root elongation of transgenic plants expressing genes of unknown function. All seeds germinated at the same time. Please see method section for experimental details.



Supplementary Figure 3. Accumulation of hydrogen peroxide in roots of 5-day-old seedlings grown on 0.5XMS agar plates under controlled growth conditions

Supplementary Figure 4. Yeast growth assays performed with wild type (WT) Yap1 mutants and Yap1 Mutants transformed with different Arabidopsis genes grown on plates containing paraquat or t-butyl hydroperoxide.





WT

Yap1Δ

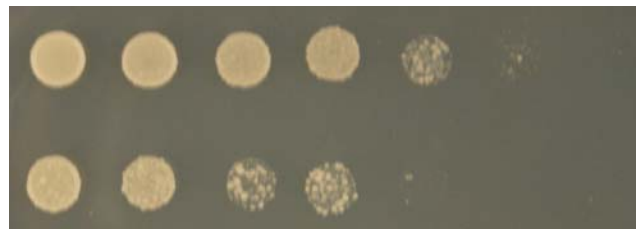


AT3G51610

Control



0.25 mM t-BOOH



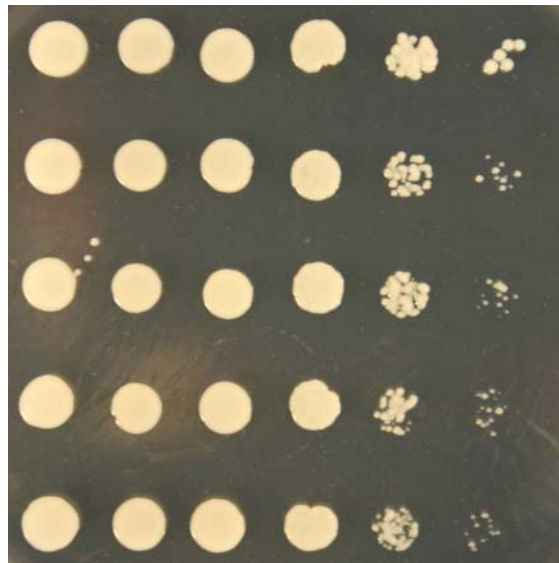
WT

Yap1Δ



AT3G51610

2mM Paraquat



WT

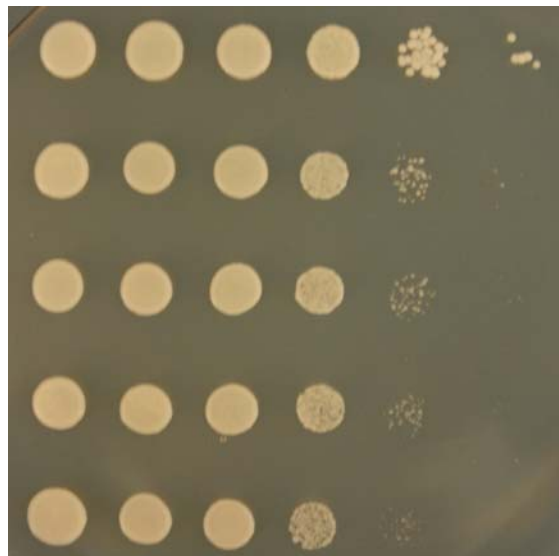
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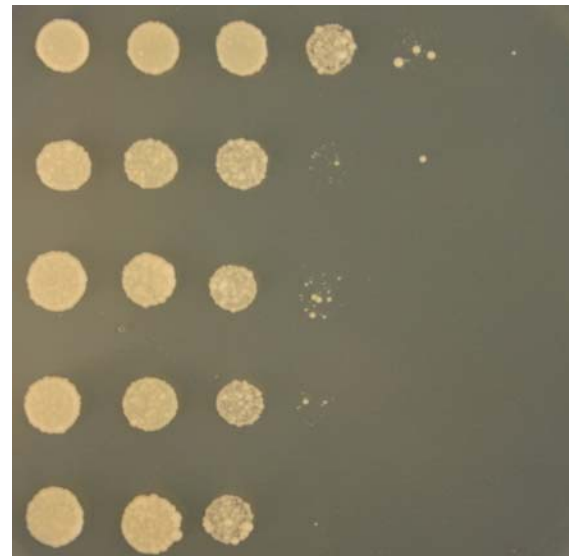
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AT1G50170

Control



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2mM Paraquat

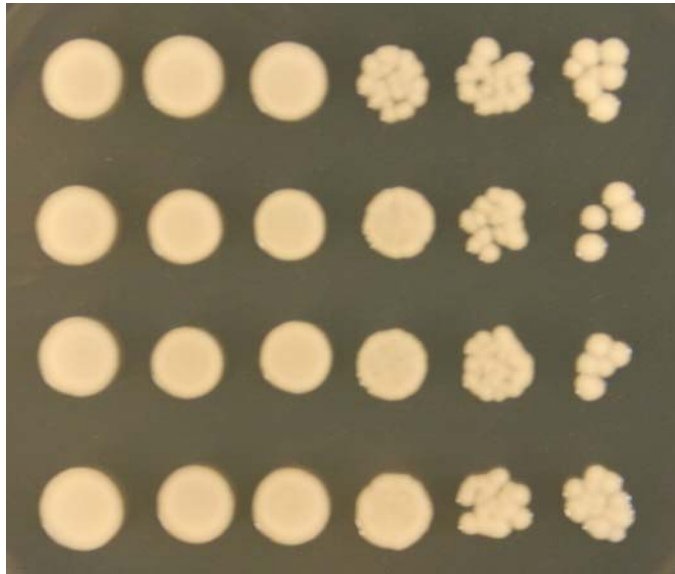
WT

Yap1Δ

AT5G18040

AT3G30300

AT1G50170



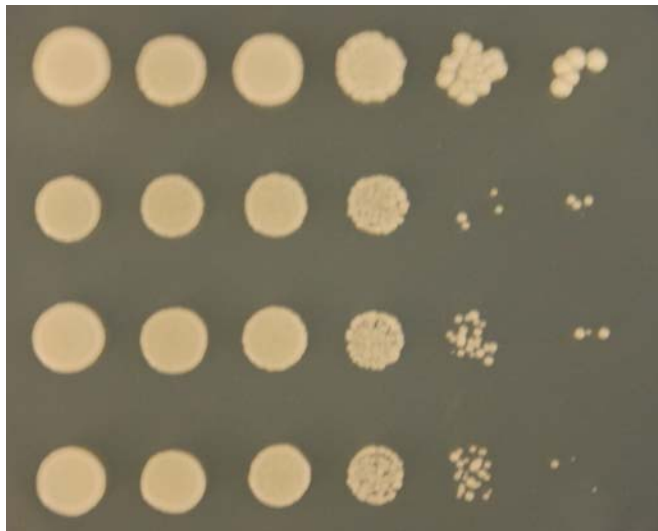
WT

Yap1Δ

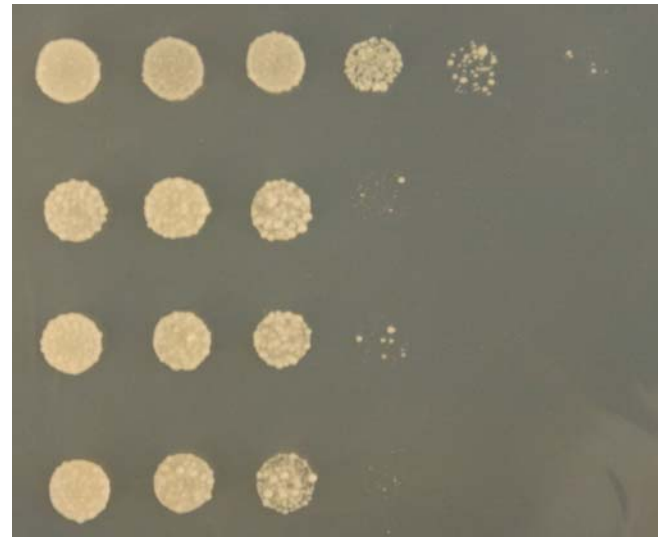
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AT3G43520

Control



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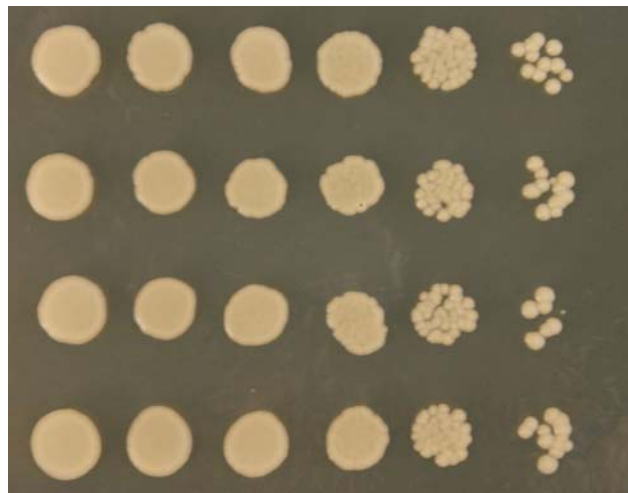
WT

Yap1Δ

AT5G19875

AT3G43520

2mM Paraquat



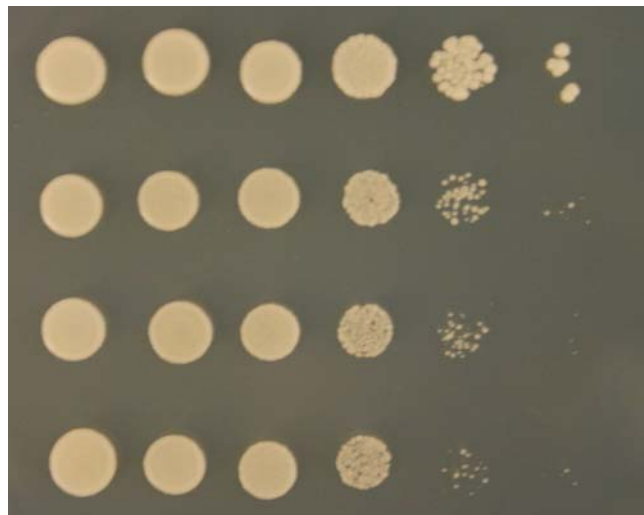
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Yap1 Δ

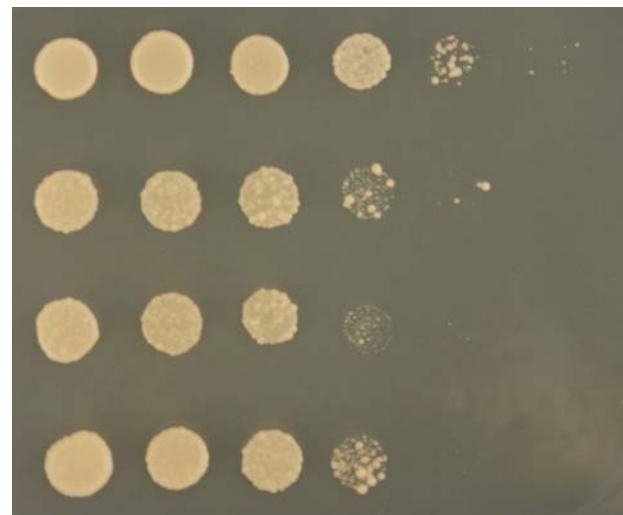
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Control



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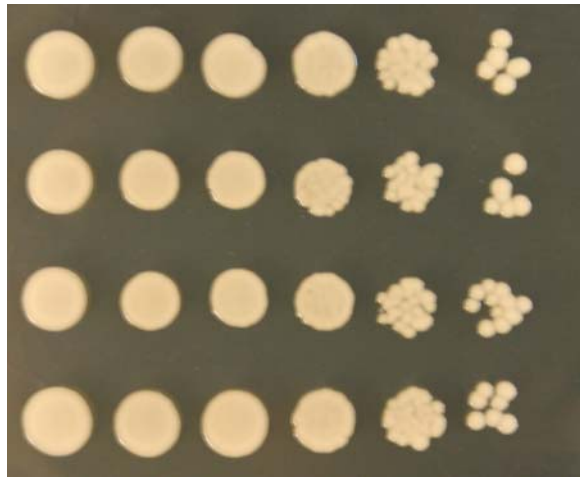
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Yap1 Δ

AT4G12000

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2mM Paraquat



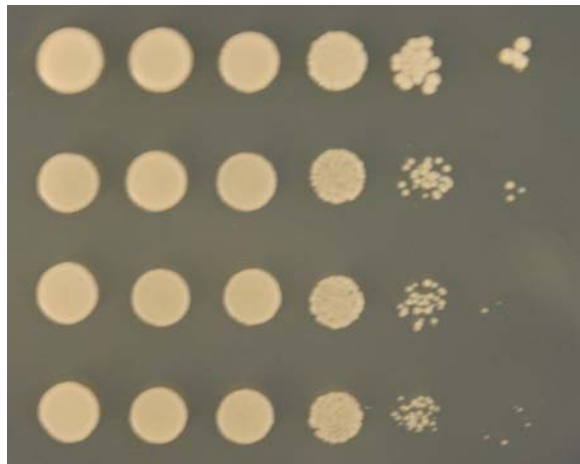
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Yap1 Δ

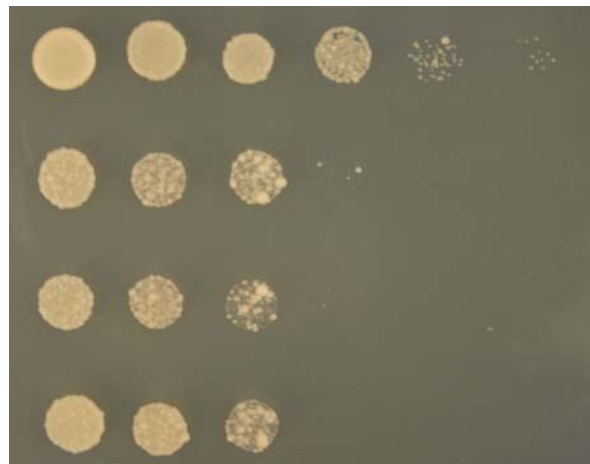
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Control



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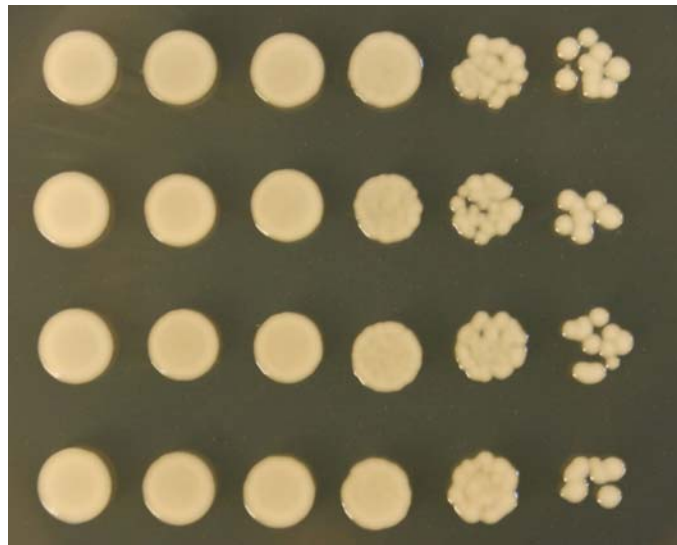
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WT

Yap1 Δ

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AT1G52200



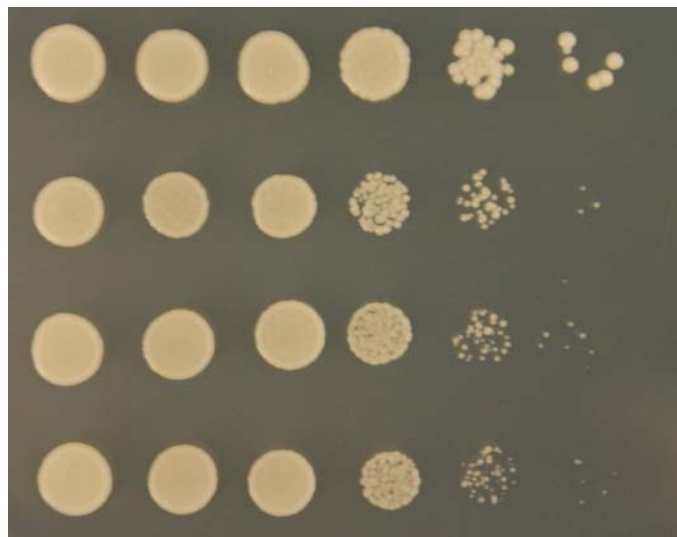
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Yap1Δ

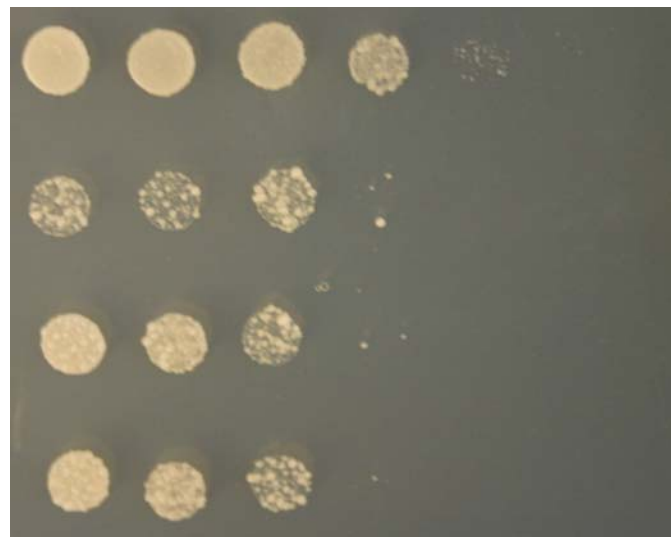
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AT1G21520

Control



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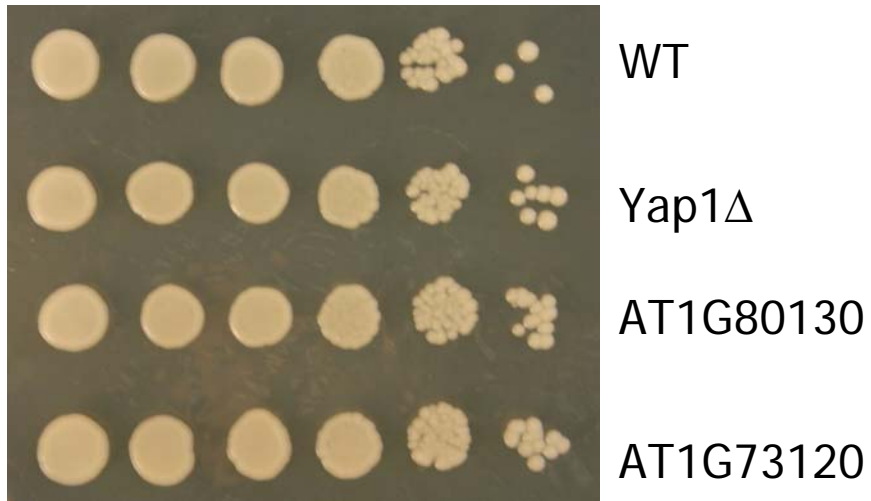
2mM Paraquat

WT

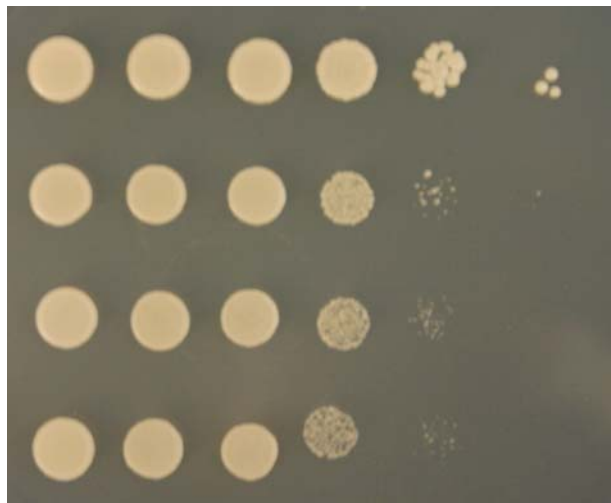
Yap1Δ

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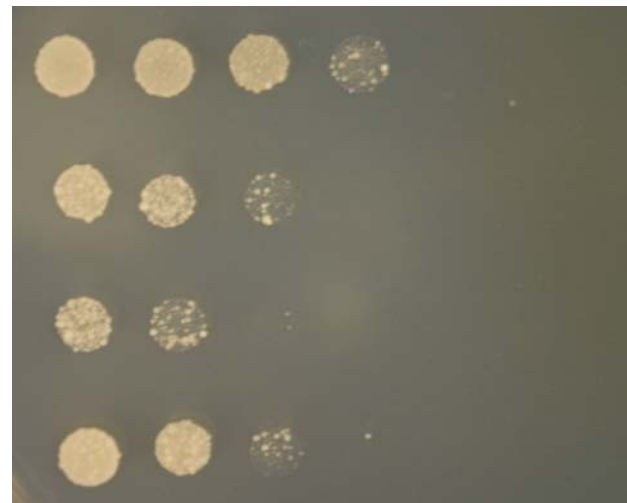
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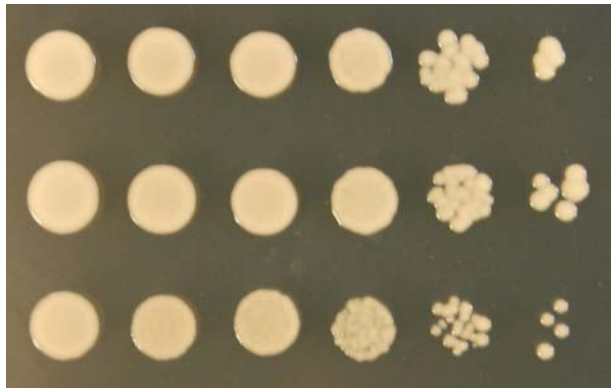
Control



0.25 mM t-BOOH



2mM Paraquat

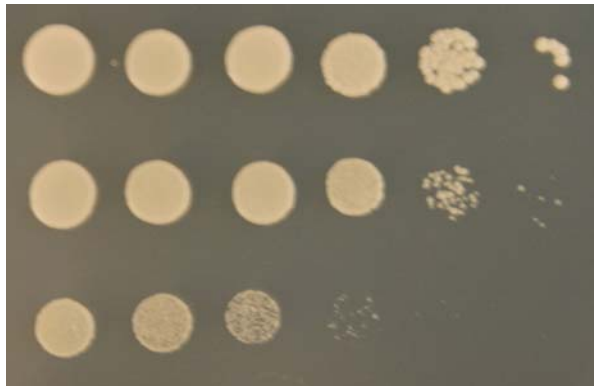


WT

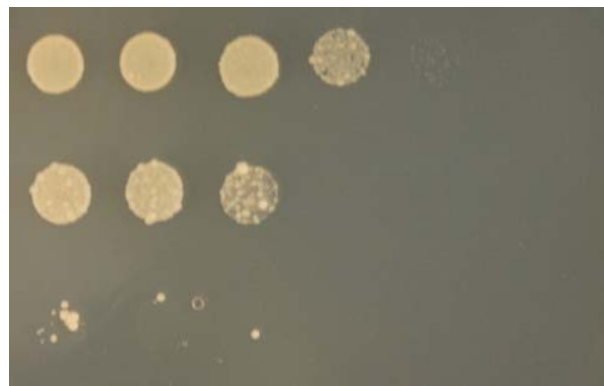
Yap1Δ

AT1G50290

Control



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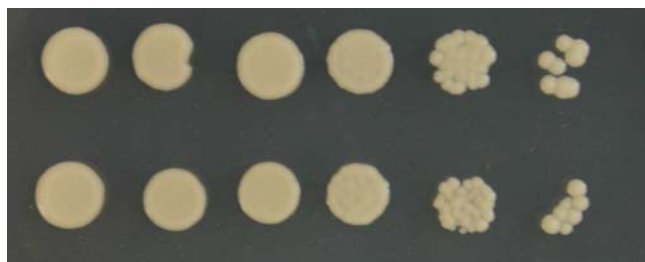


WT

Yap1Δ

AT1G50290

2mM Paraquat



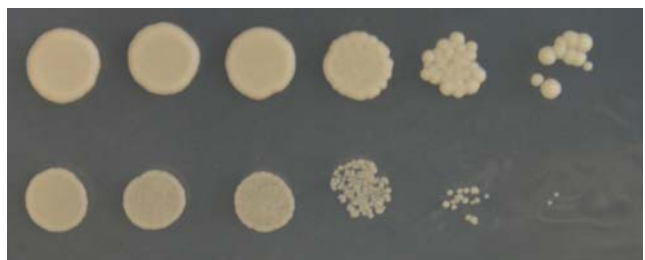
WT

Yap1 Δ

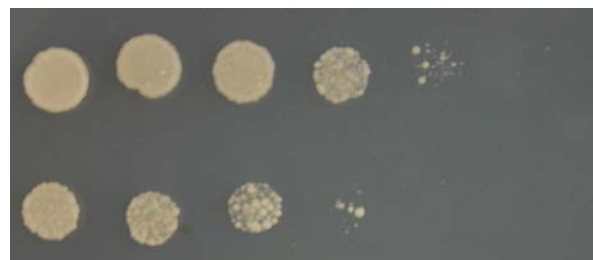


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Control

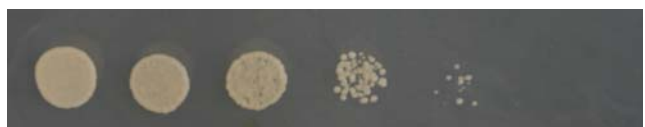


0.25 mM t-BOOH



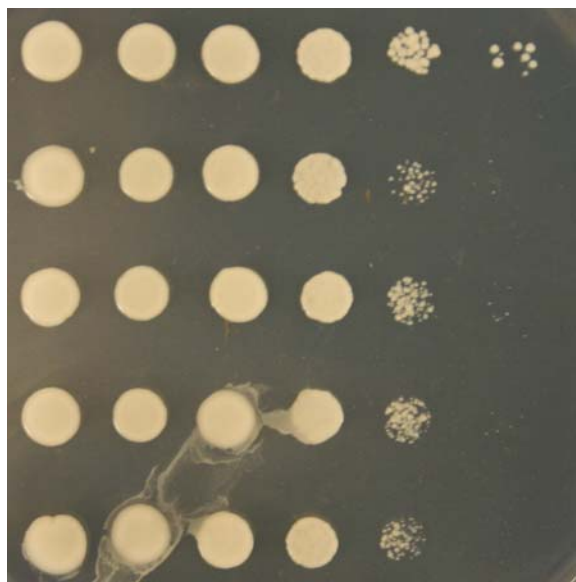
WT

Yap1 Δ



AT2G04795

2mM Paraquat



WT

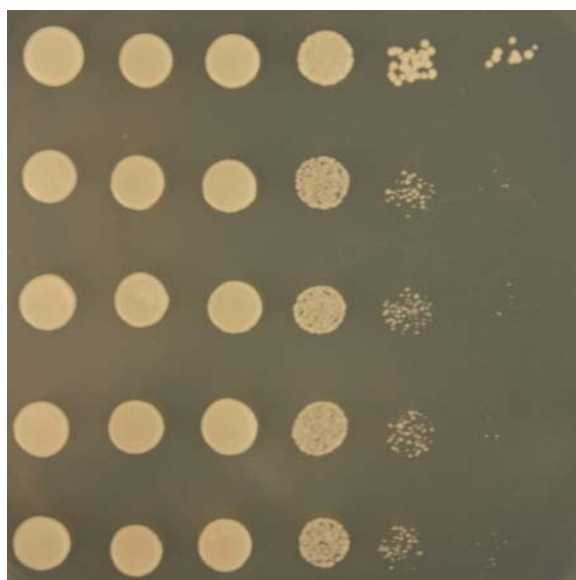
Yap1 Δ

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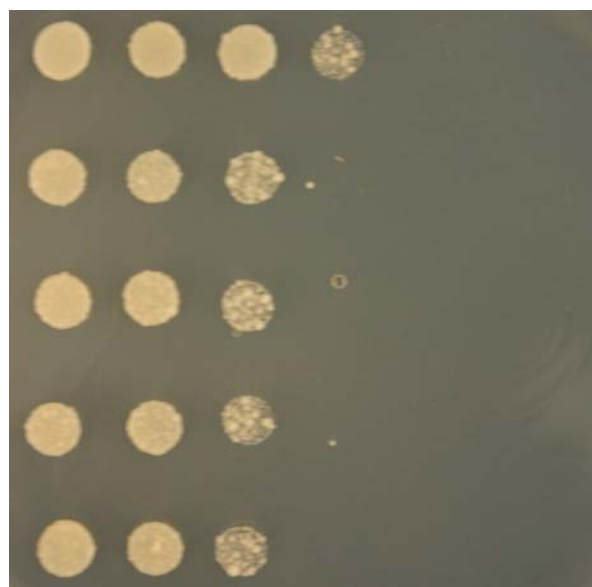
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Control



0.25 mM t-BOOH



2mM Paraquat

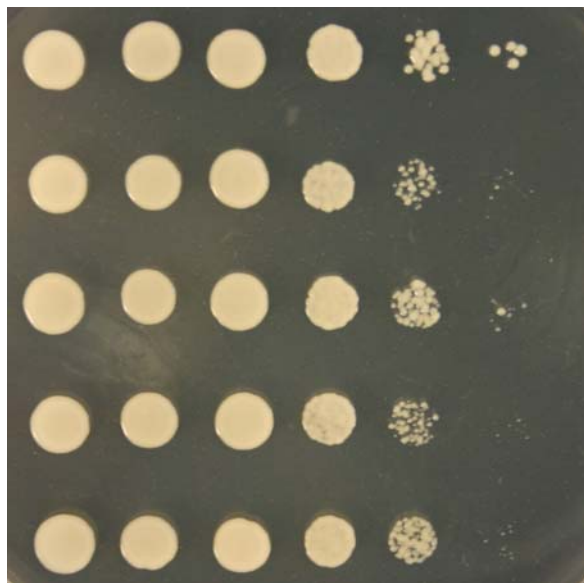
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Yap1 Δ

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AT2G32210

AT1G63980



WT

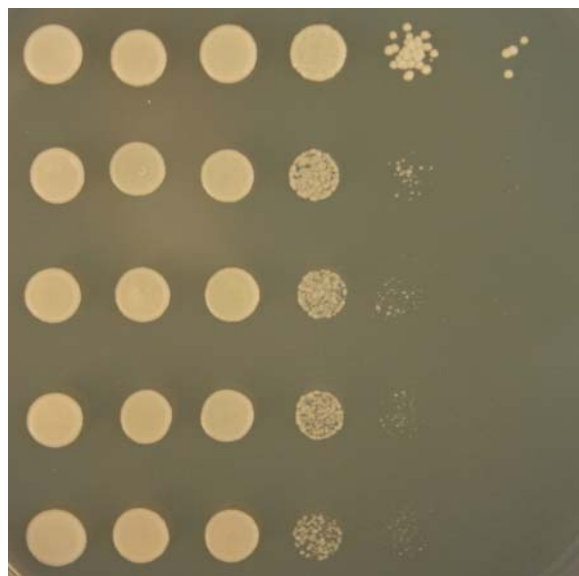
Yap1Δ

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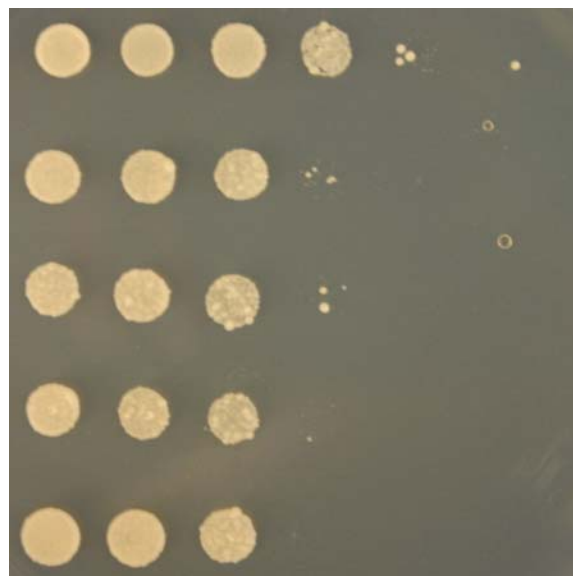
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AT2G40000

Control



0.25 mM t-BOOH



WT

Yap1Δ

AT2G19310

AT2G44240

AT2G40000

2mM Paraquat