Table S1. Sensitivities of gene deletions strains generated in this study to various stress conditions.

| Table S1. Selisitiv | | | | | | | | | | | | | | | | | | |
|------------------------------|---------|-----|----|-----|----|---|----|----|-----|----|-----|-----|------|-------|------|------|----|----------------|
| ORF | | | | MMS | | | | | | | KCl | BFA | EGTA | Sorbi | Calc | H2O2 | 19 | 36 |
| SPAC1006.05c | och1 | VS | VS | | VS | S | VS | VS | S | VS | | | | | S | | S | S |
| SPAC1250.07 | sfc7 | | | | | | | | | | | | | | | | | |
| SPAC12B10.03 | bun62 | | | | | | | | | | | | | | | | | |
| SPAC12B10.06c | emi5 | | | | | | | | | | | | | | | | | |
| SPAC144.13c | srw1 | | | | | | | | | | | | | | | | | |
| SPAC1565.02c | | | | | | | | | | | | | | | | | | |
| SPAC167.05 | dbs2 | | VS | | | | R | | | | | | | | | | | |
| SPAC18B11.10 | tup11 | | | | | | | | | | | | | | | | | |
| SPAC18G6.09c | dbs1 | | VS | | R | S | | | S | | | | | | VS | | VS | |
| SPAC19E9.03 | pas1 | | | | | | R | | | | | | | | S | | | |
| SPAC1F12.06c | r | | | | | | | | | | | | | | | | | |
| SPAC1F12.10c | | | | | | | | | | | | | | | | | | |
| SPAC1F3.02c | mkh1 | S | | | | | | | | | | | | | | | | |
| SPAC222.19 | tam1 | | | | S | | | S | VS | S | | | | | S | | S | |
| SPAC23A1.10 | tef102 | | | | | | | 5 | 7.5 | | | | | | | | 5 | |
| SPAC23C4.04c | 101102 | | | | | | | | | | | | | | | | | |
| SPAC23C4.04C SPAC23D3.17 | | | | | | | | | | | | | | | | | | |
| SPAC23D3.17 SPAC27E2.12 | | | | | | | | | | | | | | | | | | \vdash |
| SPAC2/E2.12 SPAC2E1P5.01c | mns1 | | | | - | | S | | | | | | | | | | | |
| SPAC2E1P3.01c SPAC2F3.13c | 1111181 | | | | - | | ა | | | | | | | | | | VS | |
| | 1.11 | | | | | | | | | | | | | | | | ۷۵ | \vdash |
| SPAC2F7.16c | pld1 | | | | | | | | | | | | | | | | | |
| SPAC31A2.10 | 1 11 | | | | | | | | | | | | | | | | | |
| SPAC328.07c | bsd1 | | | | | | | | | | | | | | | | | |
| SPAC343.09 | ubx3 | | | | | | | | | | | | | | | | | |
| SPAC3A11.08 | pcu4 | | | S | | | | | | | | | | | | | | |
| SPAC4F10.15c | wsp1 | | | | | | | | | | | | | | | | | |
| SPAC4G9.07 | mug133 | | | | | | | | | | | | | | | | | |
| SPAC688.07c | rng10 | | VS | | | | VS | S | | | | | | | VS | | | |
| SPAC6F12.02 | rst2 | | | | | | | | | | | | | | | | | |
| SPAC7D4.06c | alg3 | | VS | | | | VS | | | | | | | | | | VS | |
| SPAC806.03c | rps2601 | VS | | | | | | | | | | | | | | | | |
| SPAC821.04c | cid13 | | | | VS | | | | | | | | | | | | | |
| SPAC824.03c | | | | | | | | | | | | | | | | | | |
| SPAC8E11.12 | | | | | | | | | | | | | | | | | | |
| SPAC9.09 | met26 | | | | | | | | | | | | | | | | | |
| SPAC959.04c | omh6 | VS | VS | | | S | VS | S | VS | VS | S | | VS | | S | | | |
| SPAC977.10 | nhe1 | | | | | | | | | | | | S | | | | | |
| SPACUNK4.14 | mdb1 | | | | | | | | | | | | | | | | | |
| SPAP4C9.02 | emc5 | | VS | | | | | | | | | | | | VS | | S | |
| SPAPB18E9.02c | ppk18 | | | | | | | | | | | | | | | | | |
| SPAPB1A10.16 | | | | | | | | | | | | | | | | | | |
| SPAPB24D3.10c | agl1 | | | | | | | | | | | | | | | | | |
| SPAPJ760.03c | adg1 | | | | | | | | VS | | | | | | | | | |
| SPBC11G11.02c | end3 | | | | | | | | | | | | | | | | | |
| SPBC1271.11 | pet802 | | | | | | | | | | | | | | | | | |
| SPBC1289.01c | chr4 | | | | | | R | | | | | | | | | | | |
| SPBC12D12.04c | pck2 | S | | | | | S | | | | | | | | | | | |
| SPBC12D12.05c | P+ | ~ | | | | | ~ | | | | | | | | | | S | |
| SPBC1347.06c | cki1 | | | | | | | | | | | | | | | | 5 | |
| SPBC14C8.19 | tam10 | | | | | | | | | | | | | | | | | |
| SPBC14C6.19 SPBC16C6.10 | chp2 | | | | | | S | | | | | | | | | | | |
| SPBC16E9.19 | cnp2 | | | | | | R | | | | | | | | | | | |
| SPBC16E9.19 SPBC16G5.19 | | | | | - | | К | | | | | | | | | | | |
| SPBC16G5.19 SPBC1778.06c | fin 1 | VS | | | | | VC | C | | | | | | | | | | $\vdash\vdash$ |
| SCDC1//8.00C | fim1 | V S | | | | | VS | S | |] | | j . | |] | | | | Ш |

| ORF | Name | LatA | Bleo | MMS | HU | TBZ | Ben | SDS | Min | cHex | KCl | BFA | EGTA | Sorbi | Calc | H2O2 | 19 | 36 |
|---------------|--------|------|------|-----|----|-----|-----|-----|-----|------|-----|-----|------|-------|------|------|----|----|
| SPBC17G9.06c | | | | | | | | | | | | | | | | | | |
| SPBC19C7.04c | | | | | | | S | | | | | | | | | | | |
| SPBC19C7.11 | | | | | | | S | | | | | | S | | | | | |
| SPBC1A4.05 | blt1 | | | | | | | | | | | | | | | | | |
| SPBC211.07c | ubc8 | | | | | | | | | | | | | | | | | |
| SPBC28E12.03 | rga4 | VS | | | | | S | | | | | | | | | | | |
| SPBC28F2.11 | hmo1 | | | | | | | | | | | | | | | | | |
| SPBC29A3.01 | ccc2 | | | | S | | | | S | | | | S | | S | | | |
| SPBC29A3.17 | gef3 | | | | | | | | | | | | | | | | | |
| SPBC2F12.07c | rp1802 | | | | | | | | | | | | | | | | | |
| SPBC2F12.13 | klp5 | | | | | | R | | | | | | | | | | | |
| SPBC32F12.09 | rum1 | | | | | | | | | | | | | | | | | |
| SPBC56F2.12 | ilv5 | | S | | | | | | VS | | | | | | VS | | VS | |
| SPBC582.05c | brc1 | | | S | VS | | | | | | | | | | | | | |
| SPBC646.12c | gap1 | | | | | | | | | | | | | | | | | |
| SPBC685.08 | | | | | | | | | | | | | | | | | | |
| SPBC6B1.12c | sus1 | | | | VS | | | | | | | | | | | | | |
| SPBC713.02c | ubp15 | | | | | | VS | | | | | | | | | | | |
| SPBC800.14c | | | | | | | | | | | | | | | | | | |
| SPBP23A10.03c | sdh7 | | | | | | | | | | | | | | | | | |
| SPBP23A10.11c | | | | | | | | | | | | | | | | | | |
| SPBP26C9.03c | fet4 | | | | | | S | | | | | | | | | | | |
| SPBP35G2.16c | ecl2 | S | | | | | S | | | | | | | | | | | |
| SPBPB8B6.06c | fex2 | | | | | | | | | | | | | | | | | |
| SPCC1183.05c | lig4 | | | | | | | | | | | | | | | | | |
| SPCC1393.14 | ten1 | | | | | | | | | | | | | | | | | |
| SPCC1442.15c | cox18 | | | | | | | | VS | | | | | | | | | |
| SPCC16A11.12c | ubp1 | | | | | | | | | | | | | | | | | |
| SPCC4G3.03 | | | | | | | | | | | | | | | | | | |
| SPCC4G3.12c | | | | | | | | | | | | | | | | | | |
| SPCC4G3.13c | cue1 | | | | | | | | | | | | | | | | | |
| SPCC645.14c | sti1 | | | | | | | | | | | | | | | | | |
| SPCC777.09c | arg1 | | | | | | | | VS | | | | | | | | | |
| SPCC970.01 | rad16 | | | | | | | | | | | | | | | | | |
| SPCP1E11.09c | rpp103 | | | | | | | | | | | | | | | | | |

Table S1. Sensitivies of gene deletion strains generated in this study to various stress conditions (Abbreviations: brefeldin A (BFA, 25 μM); bleomycin (1 μg/ml, Bleo); calcofluor (Calc, 0.5 mg/ml); cycloheximide (CHX, 10 μg/ml); EGTA (5 mM); hydroxyurea (HU, 7.5 mM); KCl (1 M); latrunculin A (Cayman chemical, Ann Arbor, Michigan) (LatA, 0.20 μM); Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benomyl, Ben, $10 \, \mu g/ml$) (Roy et al., 1982); methyl methanesulfonate (MMS, 0.01%); sodium dodecyl sulfate (SDS, 0.005%); sorbitol (Sorb, 1.2 M); thiabendazole (TBZ, 12.5 μg/ml)). The following criteria were used to define not sensitive (NS), sensitive (S), very sensitive (VS) and resistant (R) strains: deletion strains that grew similarly or within 1 dilution factor of wildtype cells were scored as NS, deletion strains that grew at 2 or more dilutions less than wildtype under same conditions were classified as S, deletion strains that did not grow when wildtype cells grew were classified as VS, and deletion strains that grew better than wild-type cells were scored R.