

SUPPLEMENTARY INFORMATION

The Paf1 complex represses small RNA-mediated epigenetic gene silencing

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1. SUPPLEMENTARY TABLES

Supplementary Table 1.

| | Gene ID | Chromosome | Location | Feature type | Expression fold change | small RNAs | |
|----------------------|--------------|-----------------|-----------------|--------------|------------------------|------------|------------------|
| | | | | | | yes/no | change in mutant |
| <i>prf1-Q472Stop</i> | SPNCRNA.1234 | chr3 | 1837499-1840092 | long ncRNA | -2.836 | yes | down |
| | SPNCRNA.10 | chr3 | 1837689-1838380 | long ncRNA | -2.695 | yes | up |
| | SPCC1223.03c | chr3 | 1840594-1843300 | pre-mRNA | -2.224 | no | |
| | SPAC1296.02 | chr1 | 711413-711767 | intron | -2.217 | yes | NC |
| | SPNCRNA.504 | chr3 | 1839578-1840266 | long ncRNA | -1.930 | yes | NC |
| | SPCC1322.13 | chr3 | 1316243-1318070 | pre-mRNA | -1.834 | yes | up |
| | SPCC1223.01 | chr3 | 1834599-1837464 | pre-mRNA | -1.732 | yes | up |
| | SPNCRNA.1235 | chr3 | 1839787-1844115 | long ncRNA | -1.724 | yes | down |
| | SPCC1223.02 | chr3 | 1838335-1839525 | pre-mRNA | -1.640 | yes | up |
| | SPCC1322.14c | chr3 | 1318375-1321275 | pre-mRNA | -1.279 | yes | up |
| | SPCC2H8.02 | chr3 | 827911-828545 | 5' UTR | -0.897 | no | |
| | SPCC285.17 | chr3 | 1831913-1834169 | pre-mRNA | -0.828 | no | |
| | SPBC14F5.12c | chr2 | 4182411-4182642 | 5' UTR | -0.812 | no | |
| | SPAC1296.02 | chr1 | 711238-712354 | pre-mRNA | -0.804 | yes | NC |
| | SPBC1861.02 | chr2 | 4133286-4133635 | 3' UTR | -0.777 | no | |
| | SPAC2H10.04 | chr1 | 5272461-5272835 | pre-mRNA | -0.746 | no | |
| SPAC4C5.04 | chr1 | 1198224-1198458 | 5' UTR | -0.727 | no | | |
| SPNCRNA.511 | chr3 | 2011061-2012433 | long ncRNA | -0.724 | no | | |
| SPCC13B11.01 | chr3 | 1589427-1592889 | pre-mRNA | -0.709 | yes | up | |
| SPBC19C7.12c | chr2 | 2842901-2845922 | 3' UTR | -0.708 | no | | |
| <i>paf1-Q264Stop</i> | SPNCRNA.1234 | chr3 | 1837499-1840092 | long ncRNA | -2.540 | yes | down |
| | SPNCRNA.10 | chr3 | 1837689-1838380 | long ncRNA | -2.456 | no | |
| | SPCC1322.13 | chr3 | 1316243-1318070 | pre-mRNA | -2.366 | yes | up |
| | SPAC1296.02 | chr1 | 711413-711767 | intron | -2.334 | yes | up |
| | SPCC1223.03c | chr3 | 1840594-1843300 | pre-mRNA | -1.972 | yes | up |
| | SPCC1223.01 | chr3 | 1834599-1837464 | pre-mRNA | -1.536 | yes | up |
| | SPNCRNA.1235 | chr3 | 1839787-1844115 | long ncRNA | -1.484 | yes | NC |
| | SPNCRNA.504 | chr3 | 1839578-1840266 | long ncRNA | -1.379 | yes | NC |
| | SPCC1322.14c | chr3 | 1318375-1321275 | pre-mRNA | -1.265 | yes | up |
| | SPAC664.03 | chr1 | 1708728-1710347 | pre-mRNA | -1.225 | yes | up |
| | SPCC1223.02 | chr3 | 1838335-1839525 | pre-mRNA | -1.199 | yes | up |
| | SPNCRNA.511 | chr3 | 2011061-2012433 | long ncRNA | -1.131 | no | |
| | SPNCRNA.1254 | chr3 | 2011026-2012559 | long ncRNA | -1.055 | no | |
| | SPAC1296.02 | chr1 | 711238-712354 | pre-mRNA | -1.019 | yes | up |
| | SPBC1861.02 | chr2 | 4133286-4133635 | 3' UTR | -0.992 | no | |
| | SPNCRNA.763 | chr1 | 1813439-1815920 | long ncRNA | -0.975 | no | |
| SPAC2H10.04 | chr1 | 5272461-5272835 | pre-mRNA | -0.947 | no | | |
| SPCC13B11.01 | chr3 | 1589427-1591358 | 5' UTR | -0.892 | yes | up | |
| SPNCRNA.17 | chr2 | 1777375-1777788 | long ncRNA | -0.891 | no | | |
| SPBC1271.10c | chr2 | 347590-350376 | pre-mRNA | -0.879 | no | | |
| <i>paf1-G104R</i> | SPNCRNA.1234 | chr3 | 1837499-1840092 | long ncRNA | -1.729 | yes | NC |
| | SPNCRNA.10 | chr3 | 1837689-1838380 | long ncRNA | -1.671 | yes | up |
| | SPCC1223.03c | chr3 | 1840594-1843300 | pre-mRNA | -1.381 | no | |
| | SPCC1223.02 | chr3 | 1838335-1839525 | pre-mRNA | -1.327 | yes | up |
| | SPNCRNA.504 | chr3 | 1839578-1840266 | long ncRNA | -1.212 | yes | NC |
| | SPAC1296.02 | chr1 | 711413-711767 | intron | -1.184 | yes | NC |
| | SPNCRNA.1235 | chr3 | 1839787-1844115 | long ncRNA | -1.170 | yes | NC |
| | SPBC13E7.07 | chr2 | 3053333-3055355 | 3' UTR | -1.148 | no | |
| | SPCC1322.13 | chr3 | 1316243-1318070 | pre-mRNA | -1.065 | yes | up |
| | SPCC1223.01 | chr3 | 1834599-1837464 | pre-mRNA | -0.978 | yes | up |
| | SPAC2H10.04 | chr1 | 5272461-5272835 | pre-mRNA | -0.897 | no | |
| | SPBC83.10 | chr2 | 1528476-1528831 | 3' UTR | -0.844 | no | |
| | SPAC8C9.07 | chr1 | 3654213-3654875 | pre-mRNA | -0.682 | no | |
| | SPCC1620.10 | chr3 | 2163164-2164505 | pre-mRNA | -0.678 | no | |
| | SPBC1271.10c | chr2 | 347590-350376 | pre-mRNA | -0.667 | no | |
| | SPNCRNA.944 | chr1 | 3876714-3877850 | long ncRNA | -0.665 | no | |

| | | | | | | | |
|----------------------|--------------|-----------------|-----------------|-----------------|----------|--------|------|
| leo1-W157Stop | SPAC5H10.13c | chr1 | 167766-168809 | 3' UTR | -0.665 | no | |
| | SPAC16E8.06c | chr1 | 3508514-3510077 | pre-mRNA | -0.645 | no | |
| | SPAC607.02c | chr1 | 2040405-2040627 | 5' UTR | -0.641 | no | |
| | SPBC16E9.02c | chr2 | 1918006-1920215 | pre-mRNA | -0.635 | no | |
| | SPNCRNA.1234 | chr 3 | 1837499-1840092 | long ncRNA | -2.745 | yes | down |
| | SPNCRNA.10 | chr 3 | 1837689-1838380 | long ncRNA | -2.619 | no | |
| | SPCC1322.13 | chr 3 | 1316243-1318070 | pre-mRNA | -2.513 | yes | up |
| | SPAC1296.02 | chr 1 | 711413-711767 | intron | -2.466 | yes | NC |
| | SPCC1223.03c | chr 3 | 1840594-1843300 | pre-mRNA | -2.262 | no | |
| | SPNCRNA.504 | chr 3 | 1839578-1840266 | long ncRNA | -2.021 | yes | down |
| | SPAC186.05c | chr 1 | 5540032-5541502 | pre-mRNA | -1.969 | no | |
| | SPCC1223.02 | chr 3 | 1838335-1839525 | pre-mRNA | -1.838 | yes | up |
| | SPNCRNA.1235 | chr 3 | 1839787-1844115 | long ncRNA | -1.690 | yes | down |
| | SPCC1322.14c | chr 3 | 1318375-1321275 | pre-mRNA | -1.546 | yes | up |
| | SPCC1223.01 | chr 3 | 1834599-1837464 | pre-mRNA | -1.396 | yes | up |
| | SPNCRNA.511 | chr 3 | 2011061-2012433 | long ncRNA | -1.178 | no | |
| | SPNCRNA.1254 | chr 3 | 2011026-2012559 | long ncRNA | -1.115 | no | |
| | SPAC2H10.04 | chr 1 | 5272461-5272835 | pre-mRNA | -1.107 | no | |
| | SPAC1296.02 | chr 1 | 711238-712354 | pre-mRNA | -1.015 | yes | NC |
| | leo1Δ | SPAC18B11.03c | chr 1 | 311920-314040 | pre-mRNA | -0.875 | no |
| SPAC750.01 | | chr 1 | 5555716-5556768 | pre-mRNA | -0.850 | no | |
| SPNCRNA.585 | | chr 3 | 2010261-2010800 | long ncRNA | -0.826 | no | |
| SPNCRNA.1063 | | chr 1 | 5266525-5269973 | long ncRNA | -0.755 | no | |
| SPNCRNA.17 | | chr 2 | 1777375-1777788 | long ncRNA | -0.753 | no | |
| SPNCRNA.10 | | chr 3 | 1837689-1838380 | long ncRNA | -1.597 | yes | up |
| SPNCRNA.1234 | | chr 3 | 1837499-1840092 | long ncRNA | -1.588 | yes | NC |
| SPCC1223.03c | | chr 3 | 1840594-1843300 | pre-mRNA | -1.317 | no | |
| SPAC1296.02 | | chr 1 | 711413-711767 | intron | -1.308 | yes | NC |
| SPCC2H8.02 | | chr 3 | 827911-828545 | 5' UTR | -1.276 | no | |
| SPNCRNA.1235 | | chr 3 | 1839787-1844115 | long ncRNA | -1.046 | yes | NC |
| SPCC1322.13 | | chr 3 | 1316243-1318070 | pre-mRNA | -1.038 | yes | up |
| SPAC186.05c | | chr 1 | 5540032-5541502 | pre-mRNA | -0.922 | no | |
| SPCC1223.01 | | chr 3 | 1834599-1837464 | pre-mRNA | -0.912 | yes | up |
| SPNCRNA.511 | | chr 3 | 2011061-2012433 | long ncRNA | -0.909 | no | |
| SPNCRNA.504 | | chr 3 | 1839578-1840266 | long ncRNA | -0.895 | yes | NC |
| SPNCRNA.1254 | | chr 3 | 2011026-2012559 | long ncRNA | -0.861 | no | |
| SPAC2H10.04 | | chr 1 | 5272461-5272835 | pre-mRNA | -0.841 | no | |
| SPCC1223.02 | | chr 3 | 1838335-1839525 | pre-mRNA | -0.804 | yes | up |
| cdc73-G313R | | SPAC186.05c | chr 1 | 5541139-5541502 | 5' UTR | -0.796 | no |
| | SPBC13E7.08c | chr 2 | 3052520-3055287 | pre-mRNA | -0.765 | no | |
| | SPBC13E7.07 | chr 2 | 3052449-3055355 | pre-mRNA | -0.697 | no | |
| | SPBC83.10 | chr 2 | 1528476-1528831 | 3' UTR | -0.657 | no | |
| | SPAC9E9.01 | chr 1 | 4435202-4435509 | 3' UTR | -0.643 | no | |
| | SPNCRNA.17 | chr 2 | 1777375-1777788 | long ncRNA | -0.641 | no | |
| | SPNCRNA.1234 | chr3 | 1837499-1840092 | long ncRNA | -2.353 | yes | down |
| | SPCC1322.13 | chr3 | 1316243-1318070 | pre-mRNA | -2.231 | yes | up |
| | SPNCRNA.10 | chr3 | 1837689-1838380 | long ncRNA | -2.221 | no | |
| | SPAC186.05c | chr1 | 5540032-5541502 | pre-mRNA | -1.771 | no | |
| | SPCC1223.03c | chr3 | 1840594-1843300 | pre-mRNA | -1.727 | no | |
| | SPCC794.12c | chr3 | 275261-275513 | 3' UTR | -1.523 | no | |
| | SPNCRNA.511 | chr3 | 2011061-2012433 | long ncRNA | -1.490 | no | |
| | SPAC5H10.03 | chr1 | 152573-152909 | 3' UTR | -1.473 | no | |
| | SPNCRNA.763 | chr1 | 1813439-1815920 | long ncRNA | -1.463 | no | |
| | SPNCRNA.411 | chr2 | 2901243-2902541 | long ncRNA | -1.451 | no | |
| | SPBC317.01 | chr2 | 3627758-3628658 | 3' UTR | -1.391 | yes | down |
| | SPNCRNA.1254 | chr3 | 2011026-2012559 | long ncRNA | -1.390 | no | |
| | SPNCRNA.1264 | chr3 | 2117021-2118767 | long ncRNA | -1.378 | no | |
| | SPCC1223.01 | chr3 | 1834599-1837464 | pre-mRNA | -1.362 | no | |
| SPNCRNA.523 | chr3 | 2381299-2381802 | long ncRNA | -1.333 | no | | |
| SPNCRNA.716 | chr1 | 1146598-1148060 | long ncRNA | -1.332 | no | | |
| SPNCRNA.1096 | chr3 | 37658-39319 | long ncRNA | -1.311 | no | | |
| SPNCRNA.1561 | chr2 | 2901109-2902665 | long ncRNA | -1.309 | no | | |
| SPNCRNA.889 | chr1 | 3138602-3139458 | long ncRNA | -1.249 | no | | |
| SPNCRNA.1192 | chr3 | 1400016-1400808 | long ncRNA | -1.234 | no | | |

Table S1 lists the 20 most repressed genomic features in each of the Paf1C mutant strains used in this study, based on the genome-wide expression profiles. Column '*Expression fold change*' shows average

fold change in expression level between the mutant and the wild type strain (log₂ scale). Column ‘Small RNAs –yes/no’ indicates whether small RNAs originating from the loci depicted in the table were detected in our deep sequencing data set from either wild type or the respective mutant strain. Column ‘Small RNAs – change in mutant’ describes whether small RNAs number increases or decreases in the respective mutant strain. ‘NC’ – no change.

Supplementary Table 2. Strains used in this study

| Name | Genotype | Ref |
|---------|--|-----|
| SPB155 | <i>h- leu1-32 ura4-D18 ade6-704</i> | 2 |
| SPB389 | <i>h- leu1-32 ura4-D18</i> | 1 |
| SPB462 | <i>h- leu1-32, ura4-D18 nmt1+::ade6-hp+</i> | 1 |
| SPB426 | <i>h- leu1-32 ura4-D18 ade6-704 trp1+::ade6+</i> | 1 |
| SPB464 | <i>h- leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2163 | <i>h- sms1 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2164 | <i>h- sms2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2165 | <i>h- sms3 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2166 | <i>h- sms4 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2167 | <i>h- sms5 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2168 | <i>h- sms6 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2169 | <i>h- sms7 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2170 | <i>h- sms8 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2171 | <i>h- sms9 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2172 | <i>h- sms10 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2173 | <i>h- sms1 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2174 | <i>h- sms2 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2175 | <i>h- sms3 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2176 | <i>h- sms4 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2177 | <i>h- sms5 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2178 | <i>h- sms6 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2179 | <i>h- sms7 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2180 | <i>h- sms8 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2181 | <i>h- sms9 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2182 | <i>h- sms10 dcr1Δ::hph leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2047 | <i>h- paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2127 | <i>h- dcr1Δ::hph paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2128 | <i>h- ago1Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2129 | <i>h- tas3Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2130 | <i>h- chp1Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2131 | <i>h- arb1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2132 | <i>h- arb2Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2133 | <i>h- rdp1Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2134 | <i>h- hrr1Δ::TAP?-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2135 | <i>h- cid12Δ::TAP-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2136 | <i>h- clr4Δ::hph paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2137 | <i>h- rik1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-M210 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2138 | <i>h- raf1Δ::TAP?-kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2139 | <i>h- raf2Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2141 | <i>h- clr1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |

| | | |
|---------|---|---|
| SPB2142 | <i>h- clr2Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2143 | <i>h- clr3Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2144 | <i>h- mit1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2145 | <i>h- swi6Δ::hph paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2147 | <i>h- chp2Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2146 | <i>h- stc1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2148 | <i>h- ers1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-M210 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2150 | <i>h- tri1Δ::kan paf1-Q264stop::LEU2 leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1788 | <i>h+ leu1-32 ura4D18 ade6-M210 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2063 | <i>h+ paf1-Q264stop::kan leu1-32 ura4-D18 ade6-m210 trp1+::ade6+</i> | 1 |
| SPB2016 | <i>h- prf1Δ::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1953 | <i>h- paf1Δ::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1955 | <i>h- leo1Δ::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1956 | <i>h- tpr1Δ::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1957 | <i>h- cdc73Δ::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2020 | <i>h- paf1+::kan leu1-32 ade6-M210 nmt1+::ura4-hp+</i> | 1 |
| SPB2021 | <i>h- paf1-Q264stop::kan leu1-32 ade6-M210 nmt1+::ura4-hp+</i> | 1 |
| SPB2002 | <i>h- paf1+::LEU2 ura4+::5BoxB-hphR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2003 | <i>h- paf1-Q264Stop::LEU2 ura4+::5BoxB-hphR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2004 | <i>h- paf1+::LEU2 ura4+::5BoxB-hphR tas3+::λN-kanR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2005 | <i>h- paf1-Q264Stop::LEU2 ura4+::5BoxB-hphR tas3+::λN-kanR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2029 | <i>h- paf1+::LEU2 eri1Δ::ble ura4+::5BoxB-hphR tas3+::λN-kanR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2030 | <i>h- paf1-Q264Stop::LEU2 eri1Δ::ble ura4+::5BoxB-hphR tas3+::λN-kanR leu1Δ::ura4-intron(Stul)-natR</i> | 1 |
| SPB2022 | <i>h- paf1+::kan leu1-32 ura4-D18</i> | 1 |
| SPB2023 | <i>h- paf1-Q264Stop::kan leu1-32 ura4-D18</i> | 1 |
| SPB2024 | <i>h- paf1+::kan leu1-32 ura4-D18 nmt1+::ade6-hp+</i> | 1 |
| SPB2025 | <i>h- paf1-Q264Stop::kan leu1-32 ura4-D18 nmt1+::ade6-hp+</i> | 1 |
| SPB2039 | <i>h- paf1-Q264Stop::kan leu1-32 ura4-D18 nmt1+::ade6-hp+</i> | 1 |
| SPB1995 | <i>h- prf1-3xFLAG::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1996 | <i>h- paf1-3xFLAG::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1997 | <i>h- leo1-3xFLAG::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1998 | <i>h- tpr1-3xFLAG::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1999 | <i>h- cdc73-3xFLAG::kan leu1-32 ura4D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1960 | <i>h- paf1-G104R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1961 | <i>h- paf1+::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1962 | <i>h- paf1-G104R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+</i> | 1 |
| SPB1963 | <i>h- cdc73-G313R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1965 | <i>h- cdc73-G313R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+</i> | 1 |
| SPB1966 | <i>h- prf1-Q472Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1967 | <i>h- prf1+::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1968 | <i>h- prf1-Q472Stop:: kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+</i> | 1 |
| SPB1969 | <i>h- leo1-W157Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1970 | <i>h- leo1+::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1971 | <i>h- leo1-W157Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+</i> | 1 |
| SPB1972 | <i>h- paf1-Q264Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB1973 | <i>h- paf1-Q264Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |
| SPB2009 | <i>h- paf1-G104R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+ (heterochromatic)</i> | 1 |
| SPB2010 | <i>h- cdc73-G313R::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+ (heterochromatic)</i> | 1 |
| SPB2011 | <i>h- prf1-Q472Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+ (heterochromatic)</i> | 1 |
| SPB2012 | <i>h- leo1-W157Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> | 1 |

| | | |
|---------|---|---|
| | (heterochromatic) | |
| SPB2013 | <i>h-paf1-Q264Stop::kan leu1-32 ura4-D18 ade6-704 trp1+::ade6+ nmt1+::ade6-hp+</i> (heterochromatic) | 1 |
| SPB2276 | <i>h-leu1-32 ura4-D18 shade6-250/natMX paf1-Q264Stop::kan ade6+::ade6-polyA(75)-Rzm-Tadh1</i> | 1 |
| SPB2277 | <i>h-leu1-32 ura4-D18 shade6-250/natMX paf1-Q264Stop::kan ade6+::ade6-polyA(75)-Rz-Tadh1</i> | 1 |
| SPB2318 | <i>h+ leu1-32 ura4-D18 shade6-250/natMX ade6-M210 trp1+::ade6+ set2Δ::kann</i> | 1 |
| SPB2353 | <i>h+ leu1-32 ura4-D18 shade6-250/natMX ade6-M210 trp1+::ade6+ set1Δ::kann</i> | 1 |
| SPB2355 | <i>h-leu1-32 ura4-D18 shade6-250/natMX ade6-704 trp1+::ade6+ ctf1-70::hph</i> | 1 |
| SPB2357 | <i>h-leu1-32 ura4-D18 shade6-250/natMX ade6-704 trp1+::ade6+ res2Δ::hph</i> | 1 |
| SPB2358 | <i>h+ leu1-32 ura4-D18 shade6-250/natMX ade6-M210 trp1+::ade6+ spt4Δ::kanR</i> | 1 |
| SPB2359 | <i>h+ leu1-32 ura4-D18 shade6-250/natMX ade6-M210 trp1+::ade6+ tfs1Δ::kanR</i> | 1 |
| SPB2286 | <i>h-leu1-32 ura4-D18 shade6-250/natMX ade6+::ade6-polyA(75)-Rzm-Tadh1</i> | 1 |
| SPB2287 | <i>h-leu1-32 ura4-D18 shade6-250/natMX ade6+::ade6-polyA(75)-Rz-Tadh1</i> | 1 |

¹ this study

² Obtained from Katja Ludin/Jürg Kohli

Supplementary Table 3. Plasmids used in this study

| Name | | Ref |
|---------|--|-----|
| pMB417 | pNatMXARTade6-hp | 1 |
| pMB1344 | pJET1.2- <i>paf1-Q264stop</i> -LEU2(s.c) | 2 |
| pMB1313 | pFA6a- <i>paf1-G104R</i> -kanMX | 2 |
| pMB1314 | pFA6a- <i>cdc73-G313R</i> -kanMX | 2 |
| pMB1318 | pFA6a- <i>prf1-Q472Stop</i> -kanMX | 2 |
| pMB1319 | pFA6a- <i>leo1-W157Stop</i> -kanMX | 2 |
| pMB1320 | pFA6a- <i>paf1-Q264Stop</i> -kanMX | 2 |

1: kind gift from Tetsushi Iida

2: generated in this study

Supplementary Table 4. Primers used for quantitative PCR

| Name | Sequence | Target | Comment |
|--------|----------------------------|-----------------------------------|---------|
| mb6582 | ATAAGGTATAACGACAACAAACG | ade6+ promoter | forward |
| mb6583 | GCATACGCTAAAATCAATATAGC | ade6+ promoter | reverse |
| mb6584 | CGAAAAACAGGTTGTAGGGATCC | ade6+ CDS | forward |
| mb6585 | GAATTTGCTGCATCCAAGATGATGC | ade6+ CDS | reverse |
| mb6586 | AAACATTGGCTTACGACGGTCC | ade6+ CDS | forward |
| mb6587 | GAACGAACTTTTCAACATAAAGCG | ade6+ CDS | reverse |
| mb6588 | TTCCACAACCTCATGCGTTGATGG | ade6+ CDS | forward |
| mb6589 | GATGCAAAGTTGCACCGGGAATGG | ade6+ CDS | reverse |
| mb6590 | TCACCGCACACCAGATCGCATGG | ade6+ CDS | forward |
| mb6591 | ATACCAGGCAAATGAGCGGCACC | ade6+ CDS | reverse |
| mb6592 | CCCTTTTGGCTGCTATGGAGAGC | ade6+ CDS | forward |
| mb6593 | CTATGCAGAATAATTTTCCAACC | ade6+ CDS | reverse |
| mb6730 | GCATTGAAGTTTAAGATAACATTGG | ade6+ terminator | forward |
| mb6731 | TAACATAGCCAAACATAATGCGG | ade6+ terminator | reverse |
| mb555 | TCCTCATGCTATCATGCGTCTT | act1+ CDS | forward |
| mb556 | CCACGCTCCATGAGAATCTTC | act1+ CDS | reverse |
| mb557 | CTGGCCAGCTTATTCAACTTCAT | fbp+ CDS | forward |
| mb558 | GATTCGTCGAGATCTTTTTTCATG | fbp1+ CDS | reverse |
| mb2202 | CATGGAAATTGCAGTGATGGTAGT | ade6+ CDS, wt and mutant allele | forward |
| mb2203 | TGAATGGTCTCAGTTGTAGGATAAGC | ade6+ CDS, wt and mutant allele | reverse |
| mb6373 | GCTTGCCCAACTTCTCAGT | hairpin, binds the targeting seq. | forward |
| mb6374 | AGTTTGTATAGCAGCTTAATGGT | hairpin, binds the loop seq. | reverse |
| mb6416 | CCATTCAAAGGATAATGTTTGA | ade6-m704 CDS only | forward |

| | | | |
|--------|--------------------------|---------------------------------|---------|
| mb6417 | CATGGCAAGGGTTTGAGCACGCTG | ade6+ CDS, wt and mutant allele | reverse |
| mb6415 | CCATTCAAAGGATAATGTTTGT | ade6+ CDS, wt allele only | forward |