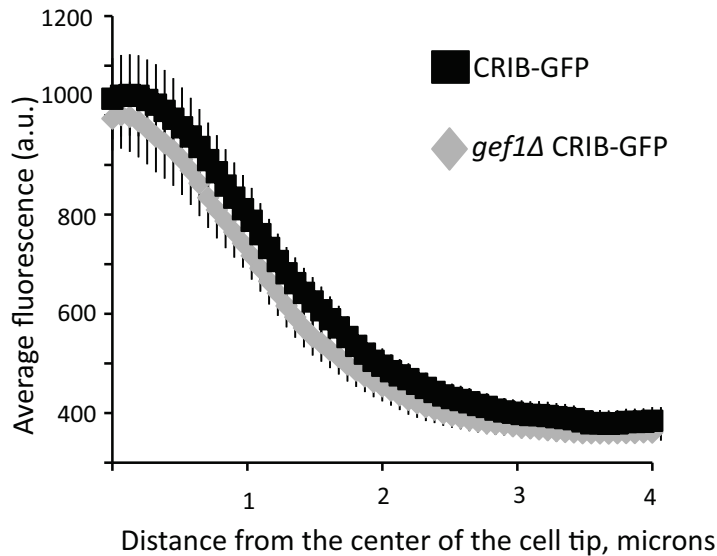


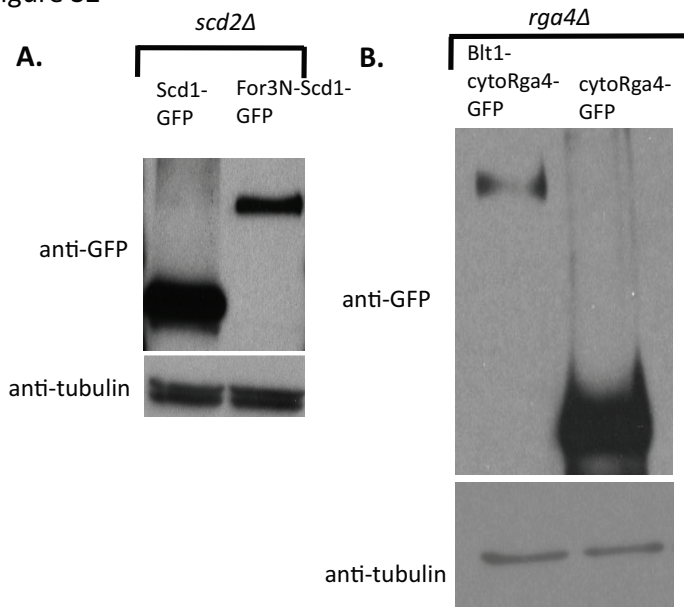
## Supplementary Data

Figure S1



**Supplementary Figure S1:** *gef1Δ* does not significantly alter the distribution of CRIB-GFP. Linescan quantification of the distribution of CRIB-GFP in wild-type and *gef1Δ* genetic backgrounds. Plots show the average intensity of line scans along the cell tip in the indicated genetic backgrounds. The scans were done on half tips, aligned by the cell center. Each line is the average of 50 line scans (25 total cell tips) of each genotype.

Figure S2



**Supplementary Figure S2:** Fusion protein expression levels. **A.** Whole cell extracts from *scd2Δ* cells induced for 15 hours expressing either Scd1-GFP or For3N-Scd1-GFP under control of the *nmt41* promoter. **B.** Whole cell extracts from *rga4Δ* cells induced for 18h expressing either Blt1-cytoRga4-GFP or cytoRga4-GFP under control of the *nmt41* promoter. Protein levels were assayed by blotting against GFP. Equal amounts of protein were loaded as measured by D<sub>c</sub> Protein Assay (BioRad). Tubulin is used as a loading control.

## Supplementary Table S1

gene deleted	average width, micron	SD
trm112	3.73	0.18
mal3	3.73	0.27
tea1	3.92	0.30
tea2	3.92	0.29
gyp10	3.93	0.26
pmc5	3.95	0.26
pep3	3.99	0.23
clp1	3.99	0.19
SPAP27G11.06c	4.02	0.24
spn3	4.02	0.30
SPCC794.11c	4.03	0.26
wee1	4.04	0.22
SPAC8C9.11	4.05	0.22
SPAC1F5.05c	4.05	0.21
rgs1	4.05	0.23
SPAC513.06c	4.05	0.20
set3	4.08	0.20
SPAC637.06	4.08	0.33
pom1	4.09	0.34
gps2	4.10	0.30
alg5	4.11	0.27
SPBC119.12	4.11	0.32
SPAC23H4.17c	4.12	0.26
alp14	4.12	0.25
chr3/cfh1	4.13	0.26
SPAC1B2.02c*	4.13	0.16
SPCC1919.15	4.15	0.25
SPCC584.11c	4.16	0.40
sce3	4.16	0.21
WT	4.17	0.27
SPCC4F11.03c	4.18	0.27
SPBC16H5.08c	4.18	0.24
SPAC1071.04c	4.20	0.25
SPBC27.02c	4.21	0.29
cap1	4.21	0.27
alg6	4.22	0.33
vps45	4.25	0.29
ubr1	4.26	0.25
SPBC9B6.07	4.26	0.28
brl1	4.26	0.29
for3	4.27	0.28
alm1	4.28	0.35
SPAC11E3.05*	4.29	0.23
SPAC7D4.12c	4.29	0.25
meu29	4.29	0.36
SPAC1071.02*	4.29	0.23
atp10*	4.29	0.23
SPAC227.01c	4.29	0.26
SPAC607.04	4.30	0.38
SPBC4F6.12	4.31	0.37

gene deleted	average width, micron	SD
pek1	4.32	0.32
SPAC11E3.05	4.33	0.25
SPAC3H1.11	4.34	0.26
SPAC2G11.07c	4.35	0.34
SPAC323.05c	4.35	0.26
SPAC1006.03c	4.36	0.32
alp13	4.39	0.32
pdt1	4.39	0.28
sec14/spo20	4.39	0.28
ogm1	4.40	0.34
sat1	4.41	0.46
iws1	4.41	0.43
rdi1	4.41	0.27
SPAC1071.06	4.44	0.36
SPBC30B4.04c	4.45	0.37
rdr1	4.46	0.52
SPAC1782.05	4.46	0.55
par1	4.49	0.33
SPBC8D2.17	4.49	0.30
rga6	4.51	0.30
SPCC63.02c	4.53	0.40
SPBC3E7.15c	4.53	0.44
pub1	4.55	0.33
SPAP27G11.06c	4.58	0.31
SPAC959.04c	4.54	0.24
pab1	4.60	0.28
scd1- partial deletion	4.60	0.62
pmp1	4.62	0.43
SPAC13G6.10C	4.65	0.29
cpp1^	4.70	0.49
SPBC30B4.03c	4.72	0.39
spy1/mpr1	4.72	0.35
SPAC824.02	4.78	0.28
ral2	4.78	0.32
SPAC1F5.05c	4.79	0.34
kin1	4.81	0.53
pmr1	4.82	0.45
myo52	4.94	0.42
ASP1	4.96	0.41
rga4	4.99	0.40
efc25	5.00	0.37
myo1	5.01	0.51
yak4	5.05	0.43
SPAC821.05	5.10	0.33
ras1	5.16	0.37
SPBC31F10.10c	5.48	0.86
scd2	5.50	0.36
cta4*	5.65	0.35
scd1	5.73	0.56

**Supplementary Table S1:** Secondary screening for width mutants. Selected mutants were grown in 11mM HU for 5 hours; table lists average width and standard deviation for each deletion mutant. Cell width was measured near the growth zone. At least 40 cells were measured for each strain. For genes marked with \* the deletion strain was temperature sensitive and would only grow at 25°C. For genes marked with ^ the deletion strain would grow in YE4S, but not EMM4S.

Supplementary Table S2: Strain Table

Strain number	Genotype	Source
<b>PN556</b>	<i>ade6-216 ura4-D18 leu1-32 h+</i>	Lab collection
<b>PN10227</b>	<i>ral2Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10720</b>	<i>spy1Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10064</b>	<i>rga4Δ::kan ade6-M216 ura4-D18 leu1-32 h90</i>	(Kim et al., 2010)
<b>PN10224</b>	<i>efc25Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10721</b>	<i>asp1Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10267</b>	<i>cpp1Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10722</b>	<i>asl1Δ::Kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10226</b>	<i>scd2Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN1653</b>	<i>ras1Δ::ura4+ ade6-M210 leu1-32 ura4-D18 h90</i>	Lab collection
<b>PN10225</b>	<i>myo52Δ::kan ade6-M216 ura4-D18 leu1-32 h+</i>	(Kim et al., 2010)
<b>PN10723</b>	<i>scd1Δ::kan ade6-M210 ura4-D18 leu1-32 h+</i>	This study
<b>PN 10724</b>	<i>rga4Δ::kan scd2Δ::kan ade6-M216 ura4-D18 leu1-32</i>	This study
<b>PN10725</b>	<i>rga4Δ::kan scd1Δ::kan ura4-D18 leu1-32</i>	This study
<b>PN10726</b>	<i>scd1Δ::kan scd2Δ::kan ade6-M216 ura4-D18 leu1-32</i>	This study
<b>PN10727</b>	<i>rga4-3GFP::Kan ura4-D18 leu1-32 ade6-M210 h+</i>	This study
<b>PN10728</b>	<i>scd2Δ::kan rga4-3GFP::kan ura4-D18 leu1-32 ade6-M216 h90</i>	This study
<b>PN 10729</b>	<i>scd1Δ::kan rga4-gfp ura4-D18 leu1-32 h-</i>	This study
<b>PN10730</b>	<i>scd2-3GFP::Kan h+</i>	This study
<b>PN10731</b>	<i>rga4Δ::kan scd2-3GFP::kan leu1-32 ura4-D18 h-</i>	This study
<b>PN10732</b>	<i>scd1-3GFP::kan h+</i>	This study
<b>PN10733</b>	<i>rga4Δ::kan Scd1-3GFP::Kan h+</i>	This study
<b>PN10734</b>	<i>scd1-3GFP::kan scd2Δ::kan ura4-D18 leu1-32 ade6-M216 h+</i>	This study
<b>PN10735</b>	<i>scd1Δ::kan scd2-3gfp::kan ura4-D18 leu1-32 h-</i>	This study

Supplementary Table S2: Strain Table, continued

<b>CA5931</b>	<i>ura4-294::[shk1 promoter:ScGIC2 CRIB domain:GFP:ura4+] leu1-32</i>	(Tatebe et al., 2008)
<b>PN10737</b>	<i>scd2Δ::kan ura4-294::[shk1 promoter:ScGIC2 CRIB domain:GFP:ura4+] leu1-32 h+</i>	This study
<b>PN10738</b>	<i>scd1Δ::kan ura4-294::[shk1 promoter:ScGIC2 CRIB domain:GFP:ura4+] leu1-32 ade6-M216 h+</i>	This study
<b>PN10739</b>	<i>scd2Δ::kan leu1-32::[nmt41-scd1-GFP:leu1+] ade6-M210 h+</i>	This study
<b>PN10740</b>	<i>scd2Δ::kan ura4-294::[nmt41-For3N-scd1-GFP:ura4+] leu1-32 ade6-M216 h+</i>	This study
<b>CA5544</b>	<i>rga4 del aa622-760:GFP(ura4+) leu1-32 ura4-D18</i>	(Tatebe et al., 2008)
<b>PN10742</b>	<i>rga4Δ::kan ura4-D18 leu1-32::[nmt41-cytorga4-GFP:leu1+]</i>	This study
<b>PN10743</b>	<i>rga4::kan ura4-D18 leu1-32::[nmt41-Blt1-cytorga4-GFP:leu1+] h-</i>	This study
<b>PN10755</b>	<i>scd2::kanMX6 pak1-mCherry ura-294::[nmt41-For3N-scd1-GFP:ura4+]</i>	This study
<b>PN10756</b>	<i>scd2::kanMX6 pak1-mCherry::natR</i>	This study
<b>PN10757</b>	<i>pak1-mCherry::natR</i>	This study
<b>PN10769</b>	<i>ura4-D18 ade6-M216 leu1-32:: [nmt41-GFP-CHD:leu1+] h-</i>	(Martin and Chang, 2006)