Supplementary material

S1 Figure. The effect of different stresses on strains expressing Rha1-GOF. Overnight cultures of SC5314 and Rha1-GOF were spotted under the indicated stress conditions. Rha1-GOF cultures grow normally under the different stress conditions including, the metal stressors, 100mM FeSO4,20 mM FeCl3, and 5mM CuSO4, the oxidative stress-inducing agent hydrogen peroxide (H2O2) at 5mM and the osmotic stressor 1M sorbitol, 0.4M CaCl2, 0.15mM Menadione, 38mM hydroxyurea, pH 10, Glycerol 250mM, Hygromycin B 100µg/ml MMS 0.02%.

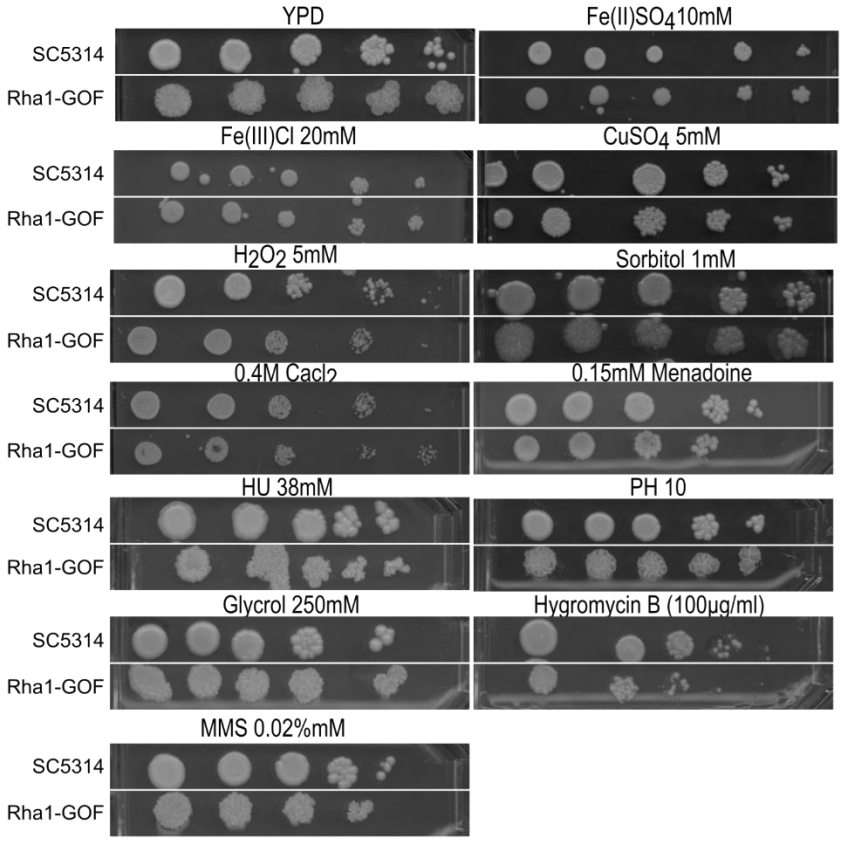
S2 Figure. RNAseq analysis of Rha1-GOF. (A) Heatmap of up-regulated genes (log2fold >4, Padj <0.001) versus the WT under non hyphal conditions. (B) Top 35 down- regulated genes P-values <0.03 in the Rha1-GOF compared with the WT under non-hyphal inducing conditions.

S3 Figure. Rha1 strains grow normally on media without arginine. Growth curves (OD_{600} of *C*. *albicans* SC5314 WT, Rha1 GOF and *rha1*$^{-/-}$ to determine influence of Rha1 function in arginine biosynthesis. The overnight strains were cultured in liquid SC without arginine and incubated at 30°C for 72hrs.

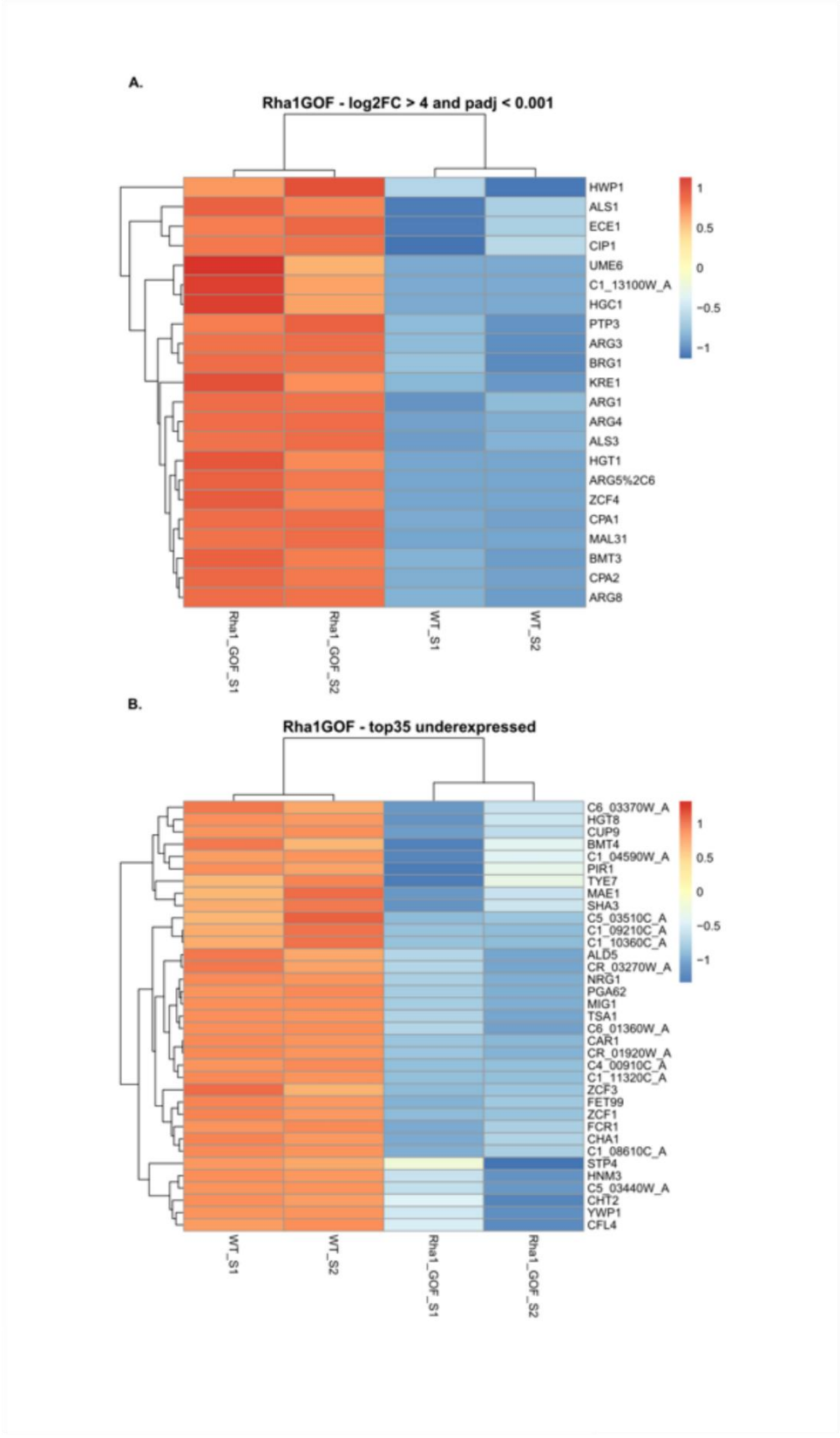
S4 Figure. One copy of Rha1 restores the filamentation morphology in *rha1* Δ/Δ. (A) The WT SC5314, SC1604M4B, (*rha1* Δ/Δ), SC1604MK2B (*rha1* Δ/Δ::RHA1) were (B) The DIC images of the indicated strains grown in the liquid Spider medium, 4 hrs at 37°C.

The complementary strain SC1604MK2B induced hyphal formation in Spider medium. Scale Bar represents 10µm. C) Shown are the serum treated cells after 4 hrs at 37°C. Cells which represent one copy of Rha1 add back the filamentation function. Scale bar is 5µm.

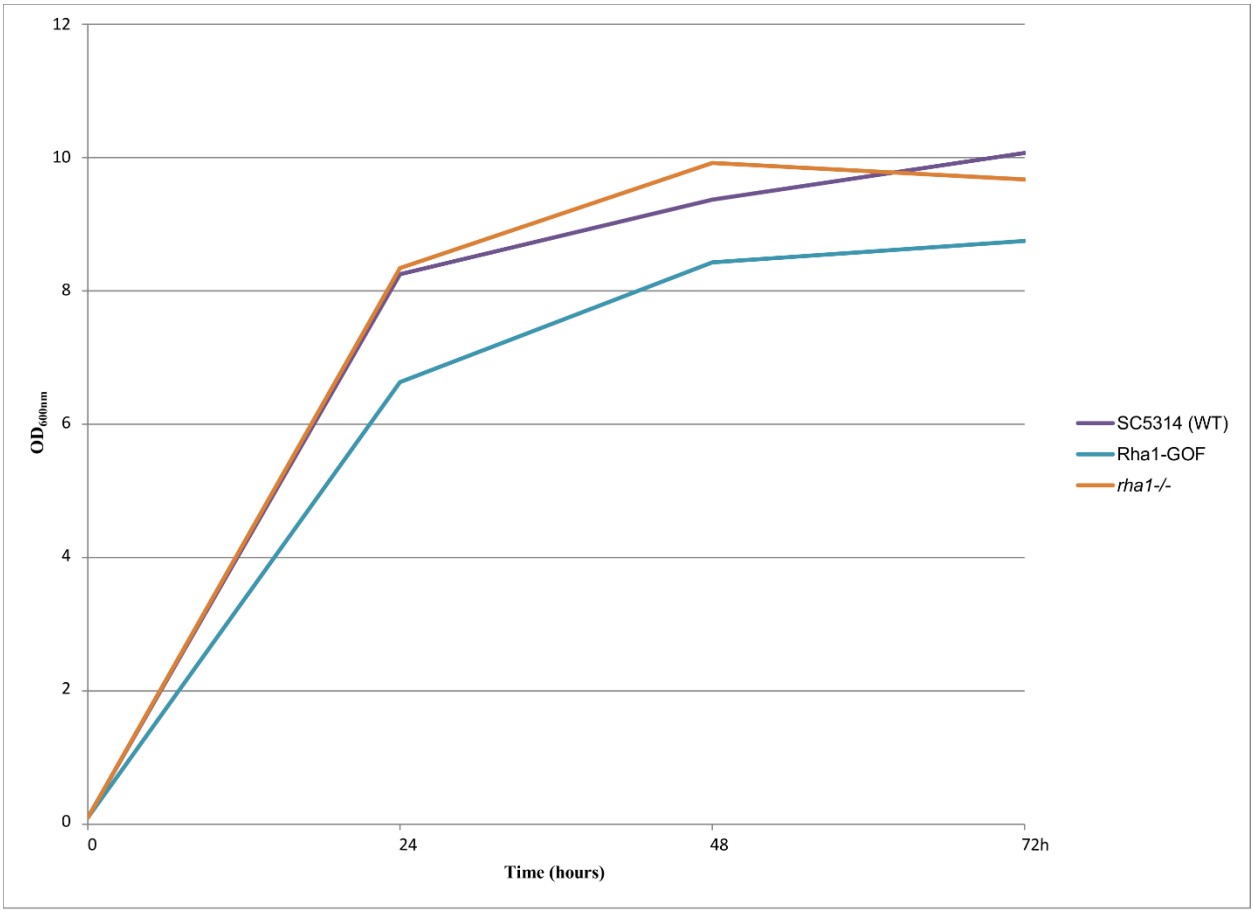
S1 Figure


YPD
Fe(II)SO4 10mM
SC5314
Rha1-GOF
Fe(III)Cl 20mM
CuSO4 5mM
H2O2 5mM
Sorbitol 1mM
0.4M CaCl2
0.15mM Menadoine
HU 38mM
PH 10
Glycrol 250mM
Hygromycin B (100µg/ml)
MMS 0.02%mM

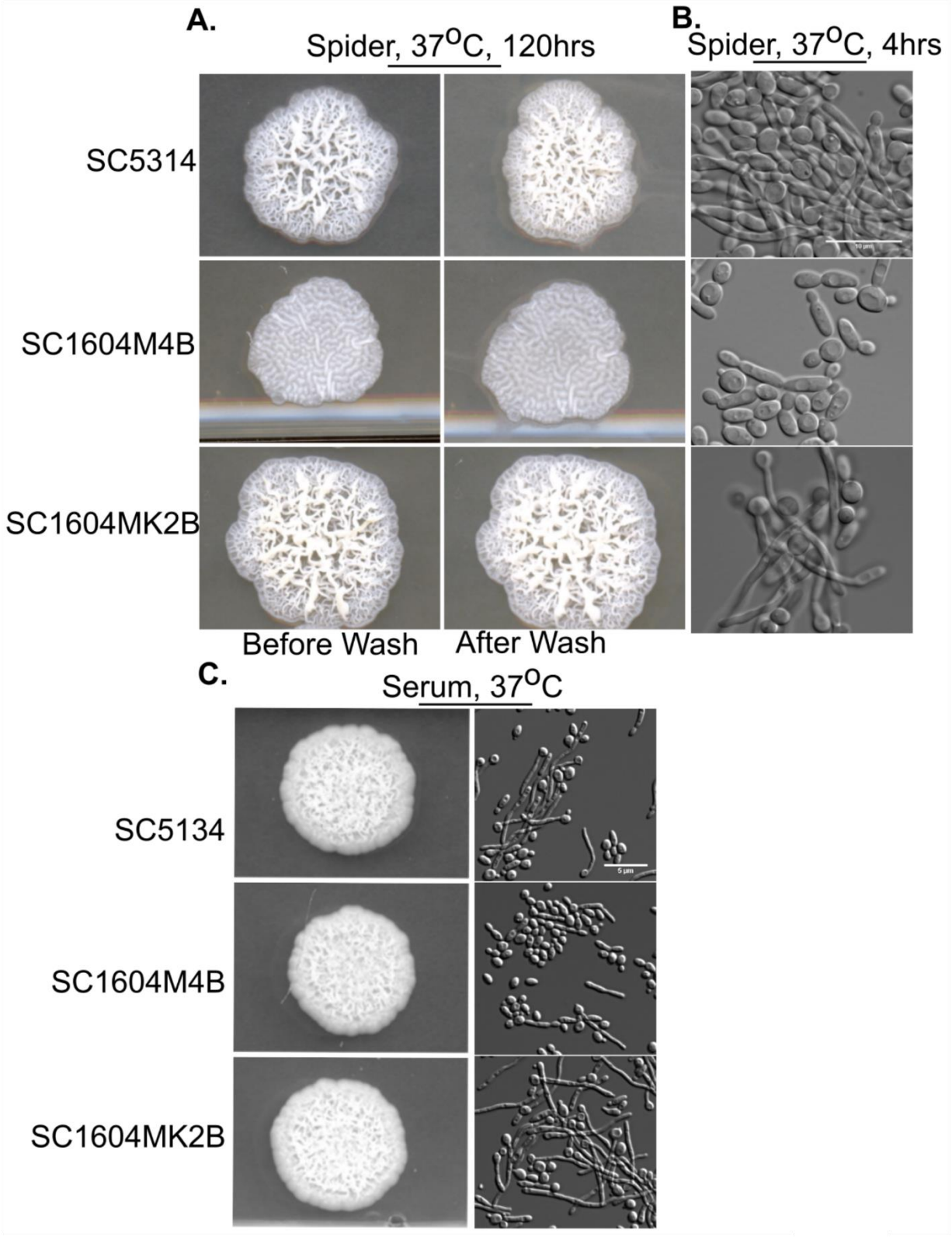
S2 Figure


A.
Rha1GOF - log2FC > 4 and padj < 0.001
HWP1
ALS1
ECE1
CIP1
UME6
C1_13100W_A
HGC1
PTP3
ARG3
BRG1
KRE1
ARG1
ARG4
ALS3
HGT1
ARG5%2C6
ZCF4
CPA1
MAL31
BMT3
CPA2
ARG8
1
0.5
0
−0.5
−1
Rha1_GOF_S1
Rha1_GOF_S2
WT_S1
WT_S2
B.
Rha1GOF - top35 underexpressed
C6_03370W_A
HGT8
CUP9
BMT4
C1_04590W_A
PIR1
TYE7
MAE1
SHA3
C5_03510C_A
C1_09210C_A
C1_10360C_A
ALD5
CR_03270W_A
NRG1
PGA62
MIG1
TSA1
C6_01360W_A
CAR1
CR_01920W_A
C4_00910C_A
C1_11320C_A
ZCF3
FET99
ZCF1
FCR1
CHA1
C1_08610C_A
STP4
HNM3
C5_03440W_A
CHT2
YWP1
CFL4
1
0.5
0
−0.5
−1
WT_S1
WT_S2
Rha1_GOF_S1
Rha1_GOF_S2

S3 Figure


12
10
8
6
4
2
0
OD600nm
0
24
48
72h
Time (hours)
SC5314 (WT)
Rha1-GOF
rha1-/-

S4 Figure


A.
Spider, 37°C, 120hrs
B.
Spider, 37°C, 4hrs
SC5314
SC1604M4B
SC1604MK2B
Before Wash
After Wash
C.
Serum, 37°C
SC5134
SC1604M4B
SC1604MK2B