Supplemental data

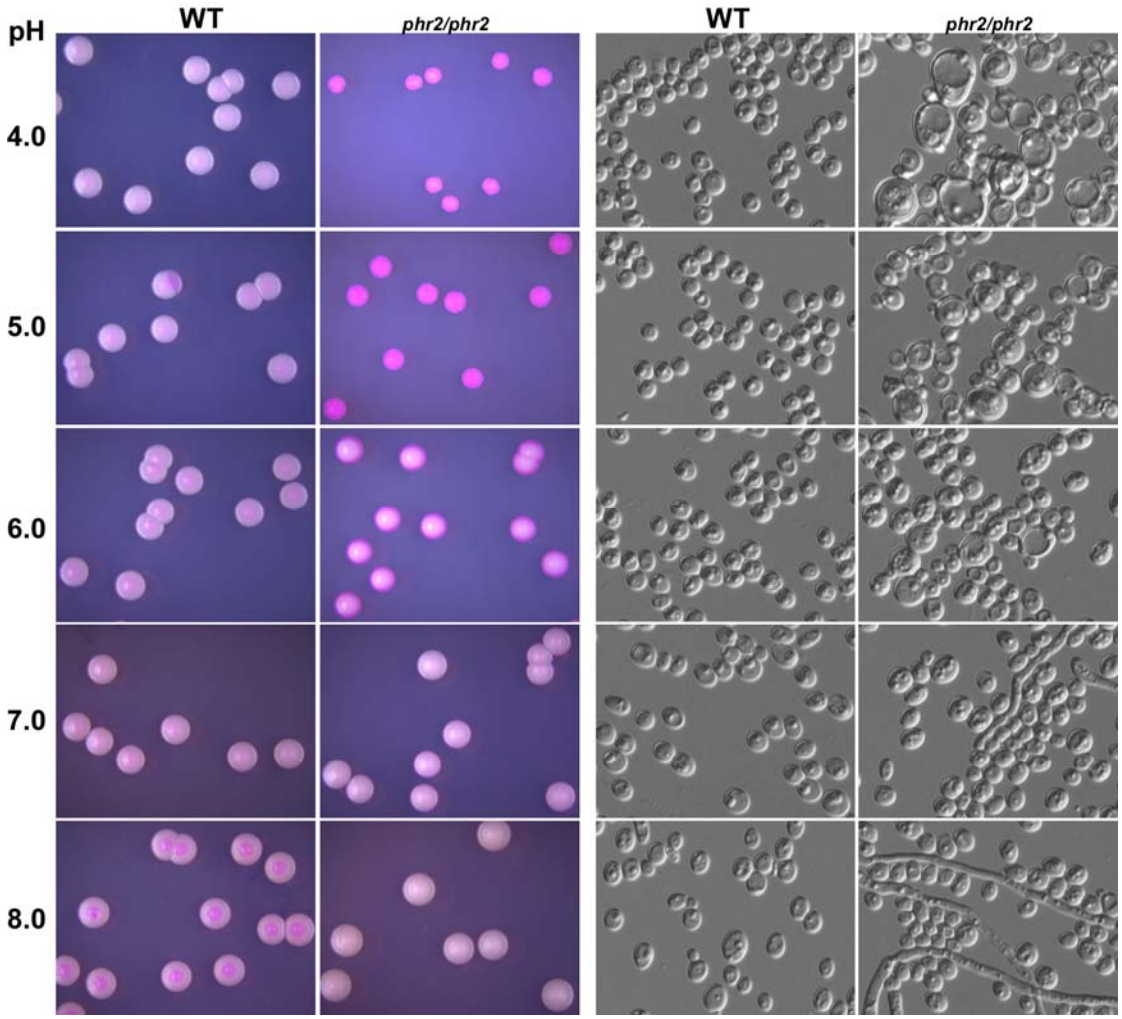

Figure S1. Colony and cellular images of the white phenotype of the WT and *phr2/phr2* mutant under different pH conditions. The parent strain GH1013 served as the control. White cells were plated onto Lee's glucose medium plates and incubated at 25°C for five days.

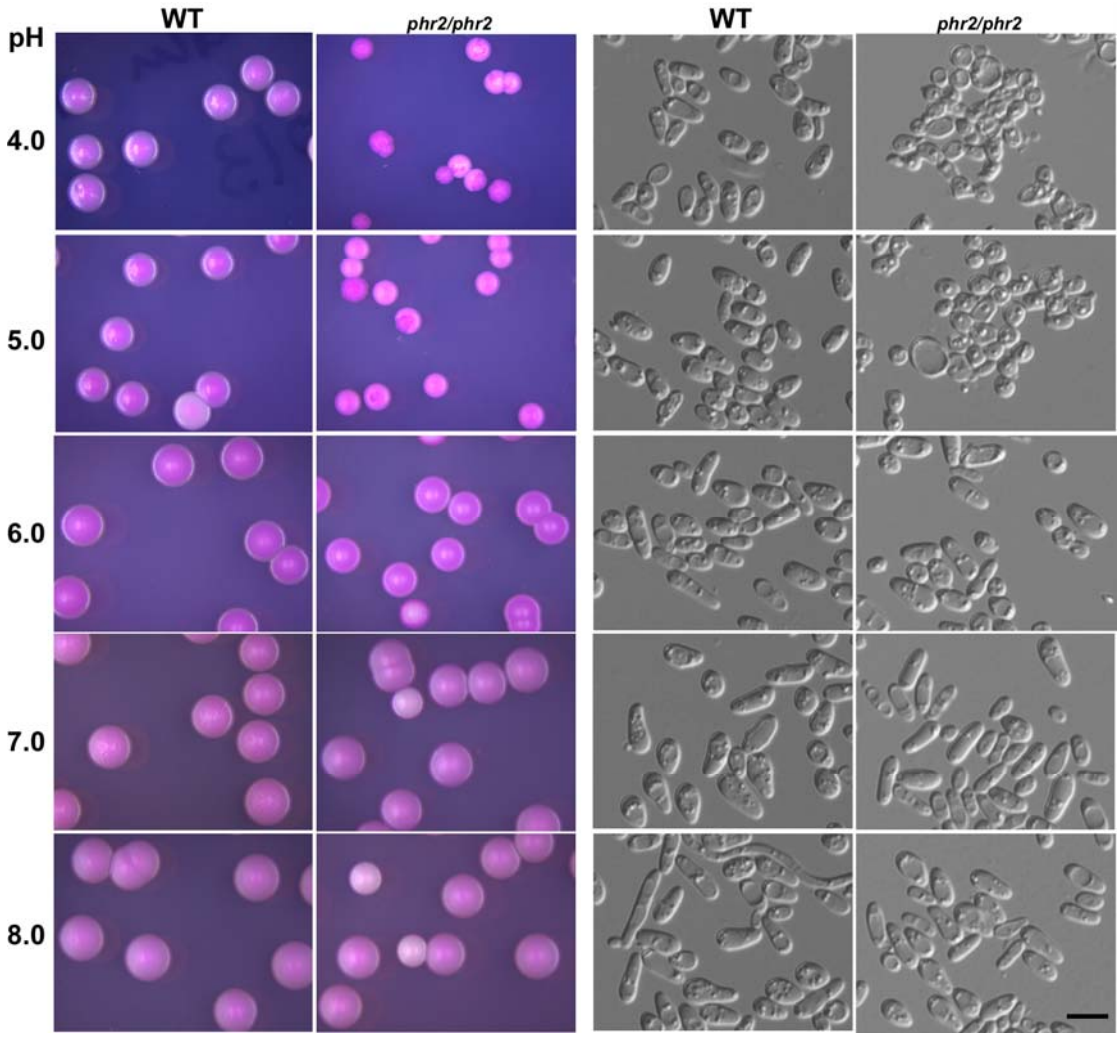

Figure S2. Colony and cellular images of the opaque phenotype of the WT and *phr2/phr2* mutant under different pH conditions. The parent strain GH1013 served as the control. Opaque cells were plated onto Lee's glucose medium plates and incubated at 25°C for five days.

Table S1. Strains used in this study

Strain name	Parent strain	Genotype	Reference
GH1349	WUM5A	*MTLα/α ura3::FRT/ura3::FRT arg4::dpl200/ arg4::dpl200-URA3-dpl200*	(1)
P37005		Clinical isolate, *MTL***a/a**	(2)
GH1012	CAI4	As CAI4, but *MTL***a/a**	(3)
GH1013	BWP17	As BWP17, but *MTL***a/a**	(3)
WO-1 (FC4)		Clinical isolate, *MTLα/α*	(3, 4)
SN250α	SN250	As SN250, but *MTLα/α*	(5)
12C		Clinical isolate, *MTL***a/a**	(2)
GH1120	CAN52	As CAN52, but *MTLα/mtl***a***::dpl200*	(3)
GH1352	GH1349	As GH1349, but *arg4::dpl200/ arg4::dpl200*	This study
cyr1/cyr1	GH1352	As GH1352, *but cyr1:arg4/cyr1::URA3*	This study
pde2/pde2	WUM5A	As WUM5A, but pde2::dpl200/pde2::dpl200	(6)
WUM5A	WO-1	As WO-1, but ura3::FRT/ura3::FRT	(7)
CAR2	CAI4	As CAI4, *rim101::hisG/ rim101::hisG-URA3-hisG*	(8)
CAR2a	CAR2	As CAR2, but *MTL***a/** *mtlα::FRT-SAT1-FRT*	This study
phr1/phr1-2	GH1013	As GH1013, but *mfa1::ARG4/mfa1::HIS1*	This study
phr2/phr2-2	GH1013	As GH1013, but *mfa1::ARG4/mfa1::HIS1*	This study
SZ306u-a	SZ306u	As SZ306u, but *MTL***a***/mtlα::FRT-SAT1-FRT*	(9)
GH1600	SZ306a	As SZ306a, but *MFA1/MFA1::MFA1p-GFP*	(9)
SZ306u	SZ306	As SZ306, but *ura3::FRT/ura3::FRT*	(9)
GH1349a	GH1349	As GH1349 but *arg4::dpl200/ arg4::dpl200 -URA3-dpl200::CaARG4*	This study
ste11/ste11	SC5314	As SC5314, *but ste11::FRT/ ste11::FRT MTL***a***/mtlα::FRT*	(9)
GH1613	JKC131	As JKC131, but *MTL***a***/mtlα::FRT*	(9)

References

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6. **Huang G, Yi S, Sahni N, Daniels KJ, Srikantha T, Soll DR.** 2010. N-acetylglucosamine induces white to opaque switching, a mating prerequisite in Candida albicans. PLoS Pathog **6:**e1000806.
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8. **Ramon AM, Porta A, Fonzi WA.** 1999. Effect of environmental pH on morphological development of Candida albicans is mediated via the PacC-related transcription factor encoded by PRR2. J Bacteriol **181:**7524-7530.
9. **Tao L, Cao C, Liang W, Guan G, Zhang Q, Nobile CJ, Huang G.** 2014. White cells facilitate opposite- and same-sex mating of opaque cells in Candida albicans. PLoS Genet **10:**e1004737.

Table S2. Primers used in this study

Name	Sequence (5' to 3')	Purpose
Marker-F	CCGCTGCTAGGCGCGCCGTGACCAGTGTGATG GATATCTGC	Amplification for *ARG4, HIS1, LEU2, URA3* fragments used in fusion PCR
Marker-R	GCAGGGATGCGGCCGCTGACAGCTCGGATCCA CTAGTAACG	
PHR1-L FWD	CATAACTCTAACGATTCCA	Fusion PCR for *PHR1* KO
PHR1-L REV	GTCAGCGGCCGCATCCCTGC-TATCTAACTGGAG TGTATAAG	
PHR1-R FWD	CACGGCGCGCCTAGCAGCGG-GTTCTGTTGTATA GGAC	
PHR1-R REV	TACTTGGGATAAGGAGAG	
PHR1-CHF	TCGGCTAAGTATTGTAATGGC	*PHR1* KO check (first copy)
PHR1-CHR	GGACAATGTTCGTGATGATGA	
PHR1-orf-F	TACATTGTTGCTGATTTATC	*PHR1* KO check (second copy)
PHR1-orf-R	GCAATCGATATAACCAC	
PHR2-L FWD	AGTCAATGAGATGGGAAG	Fusion PCR for *PHR2* KO
PHR2-L REV	GTCAGCGGCCGCATCCCTGC-TACAATTCTGCTA CTGTTG	
PHR2-R FWD	CACGGCGCGCCTAGCAGCGG-ACTCCTTGGTTTAACAATTCC	
PHR2-R REV	AGTATTATGCCACCACTAGT	
PHR2-CHF	ACGATTGAGGAGTGACGA	*PHR2* KO check (first copy)
PHR2-CHR	CCTTGGTGGAAATCCTTGAT	
PHR2-orf-F	AGATACACTTCTGTTGTCG	*PHR2* KO check (second copy)
PHR2-orf-R	TACTACCACTTGAACCAGA	
RAS1-L FWD	CAGAATTGCATTTCTCCGATC	Fusion PCR for *RAS1* KO
RAS1-L REV	CACGGCGCGCCTAGCAGCGGTGAAGAAGGAAA AACAGACGAG	
RAS1-R FWD	GTCAGCGGCCGCATCCCTGCACATTCAACATCCT CTTCATACC	
RAS1-R REV	ATACTATATCAGCTCAACCTCG	
RAS1-CHF	TCCTCCTCCATATTTCACTTTATC	*RAS1* KO check (first copy)
RAS1-CHR	TTCTTCTTCCTCCACAACAAC	

RAS1-orf-F	AAGAATATCTGGCCATGAGAG	*RAS1* KO check (second copy)
RAS1-orf-R	ACCACCATTAACAGCACTAG	
MFA1-RT-F	ATGGCTGCTCAACAACAATC	Quantitative real time PCR
MFA1-RT-R	AACAGAACAAGTGGAACAGC	
MFα1-RT-F	TGACAGTAACCAAGTTGTTG	
MFα1-RT-R	AGCACCAGAGGTAAGAGTAG	
STE2-RT-F	TACTGGTTGGTATGATGGATC	
STE2-RT-R	AAGGCAACAACAATCAATCC	
GFP-RT-F	AGACACAACATTGAAGATGG	
GFP-RT-R	AGCAGCTGTTACAAACTCAAG	
For the construction of *CYR1*-reconstituted strain		
LWH105	ACAAGCGGAAGAGTATGAATG	*CYR1* promoter region amplification
LWH106	CTTCCTAACATTCTCAACTTCATTTAAATTGAGAATGAATGGT	
LWH107	ACCATTCATTCTCAATTTAAATGAAGTTGAGAATGTTAGGAAG	*CYR1* catalyzed domain sequence amplification
LWH108	AACGACAACTATATATGTATCTATCATTGTATGAAAAATTCAA	
LWH109	TTGAATTTTTCATACAATGATAGATACATATATAGTTGTCGTT	*CYR1* terminator amplification
LWH110	CACGGCGCGCCTAGCAGCGGATGCAGTTGTCATTGAAGCT	
LWH111	GTCAGCGGCCGCATCCCTGCATGATGATGGTTATGTTGGA	*CYR1* 3-UTR amplification
LWH112	CGAACTATTTGTGACGCAT	
For the construction of *PHR1*-reconstituted strain		
LWH117	TCACTTATACACTCCAGTTAG	*PHR1* gene amplification
LWH118	CACGGCGCGCCTAGCAGCGGGAAACTTTGCTGAGTACTTG	
LWH119	GTCAGCGGCCGCATCCCTGCTCATCATCACGAACATTGTCC	*PHR1* 3-UTR amplification
LWH120	GGTGTCCCATGCATTAACTA	
For the construction of *PHR2*-reconstituted strain		
LWH121	ATACCACGACAATAGGAGAG	*PHR2* gene

LWH122	CACGGCGCGCCTAGCAGCGGCACCACTAGTAACATTAGAGT	amplification
LWH123	GTCAGCGGCCGCATCCCTGCAGAGTTGTGGAGACTAGTTG	*PHR2 3*-UTR amplification
LWH124	CTGAGTGAGATGAGGTCATT	
For the construction of *RIM101*-reconstituted strain		
LWH129	TAGTAGGTAGTGTGATGTTG	*RIM101* gene amplification
LWH130	CACGGCGCGCCTAGCAGCGGCTGTGGAATTGACGCAGTTA	
LWH131	GTCAGCGGCCGCATCCCTGCTATCGCTGACAAACCAAATG	*RIM101*3-UTR amplification
LWH132	GTTACTATCTTTCGTCGAT	
LT391	CCGCTGCTAGGCGCGCCGTGCCATCATAAAATGTCGAGCGTC	*CaSAT1* cassette amplification
LT392	GCAGGGATGCGGCCGCTGACTGCAGGACCACCTTTGATTG	