Table S1.   **Neurospora crassa strains used in this study**

Strain	Genotype (transformed plasmids are in parentheses)	Use
FGSC #3661	A, alcoy, csp-2	Mapping the original wsc mutant
FGSC #6808	A, trp-1;ylo-1	Mapping the original wsc mutant
FGSC #1208	a, trp-1;ylo-1	Mapping the original wsc mutant
FGSC #52	A, ro-2	Mapping the original wsc mutant
FGSC #4516	A, pro-1	Mapping the original wsc mutant
FGSC #3305	A, ser-1	Mapping the original wsc mutant
FGSC #5075	A, sc	Mapping the original wsc mutant
FGSC #9179	a, Δmus-52::bar +	Construction of deletions
FGSC #9720	a, Δmus-52::bar +	Construction of deletions
FGSC #6103	A, his-3-	Introduction of his-3Δ200
FGSC #465	A, pan-2-	Genetic screen
GSF #48	a, pan-2- (POKE103::phex-GFP-PTS1)	Figs. 1 A and 5 D
GSF #111	A, wsc- (POKE103::phex-GFP-PTS1)	Fig. 1 A
FGSC #987	A	Fig. 1 (B and C)
GSF #59	A, wsc-	Fig. 1 (B and C)
GSF #623	A, pan-2- (pMF280)	Fig. 1 C
GSF #626	A, Δwsc, pan-2 -(pMF280)	Fig. 1 C
GSF #629	A, Δwsc, pan-2-, his-3- (pBM60::wsc-eGFP, POKE103::phex-RFP-PTS1)	Figs. 3 A, 5 A, and 8 B
GSF #411	A, wsc-, (GJP#961::wsc-eGFP, POKE103::phex-RFP-PTS1)	Fig. 3 B
GSF#1193	A, Δmus-52::bar + , his-3- (pBM60::RFP-PTS1)	Figs. 3 C and S2
GSF#1182	A, Δmus-52::bar + , Δfis1::hyg + , his-3- (pBM60::RFP-PTS1)	Figs. 3 C and S2
GSF#1166	A, Δmus-52::bar + , Δdnm1::hyg + , his-3- (pBM60::RFP-PTS1)	Figs. 3 C and S2
GSF#1164	A, Δmus-52::bar + , Δvps1::hyg + , his-3- (pBM60::RFP-PTS1)	Figs. 3 C and S2
GSF #404	A, wsc- (GJP#961::wsc-3xHA)	Fig. 4 (A and B) and Fig. 5 C
GSF #360	A, wsc- (GJP#961::wsc-eGFP)	Fig. 4 B
GSF #399	A, wsc-,Δhex-1 (GJP#961::wsc-eGFP, POKE103::phex-RFP-PTS1)	Figs. 5 A, 6 C, and 8 D
GSF #448	a,Δhex-1, wsc-, pan-2 -(GJP#961::wsc-3xHA, GJP#961::wsc-eGFP)	Fig. 5 (B and C), Fig. 6 C, and Fig. 8 D
GSF #38	A, Δhex-1, pan-2 - (POKE103::phex-GFP-PTS1)	Fig. 5 D
GSF #743	a, wsc-,Δhex-1 (POKE 103::phex-wsc-eGFP, POKE103::phex-RFP-PTS1)	Fig. 6 (A, B, D, and E) and Fig. 8 E
GSF #823	a,wsc-, pan-2- (OKE103::phex-RFP-PTS1, pMF272::pex14)	Fig. 6 E
GSF #621	A, wsc-, (GSP#961::wsc-eYFPI, GSP961::wsc-eYFPII)	Fig. 6 F
GJF #1732	S. cerevisiae - MATα, his3D1, leu2D0, lys2D0, ura3D0 (p413GPD::rfp-pts1, p415GPD)	Fig. 7 (A and B)
GJF #1758	S. cerevisiae - MATα, his3D1, leu2D0, lys2D0, ura3D0 (p413GPD::rfp-pts1, p416GPD::wsc-egfp, p415GPD)	Fig. 7 (A–D)
GSF #452	A, Δwsc, pan-2-, his-3-	Fig. 8 A
GSF #475	A, Δwsc, pan-2-, his-3- (pBM60::wsc-eGFP)	Fig. 8 A
GSF #506	A, Δwsc, pan-2-, his-3- (pBM60::wscR102Q-eGFP)	Fig. 8 A
GSF #515	A, Δwsc, pan-2-, his-3- (pBM60::wscR102W-eGFP)	Fig. 8 A
GSF #631	A, Δwsc, pan-2-, his-3- (pBM60::wscR102Q-eGFP, POKE103::phex-RFP-PTS1)	Fig. 8 B
GSF #634	A, Δwsc, pan-2-, his-3- (pBM60::wscR102W-eGFP, POKE103::phex-RFP-PTS1)	Fig. 8 B
GSF #562	A, Δwsc, pan-2, his-3- (pBM60::wsc-3xHA)	Fig. 8 C
GSF #568	A, Δwsc, pan-2 his-3- (pBM60::wscR102W-3xHA)	Fig. 8 C
GSF #857	a,Δhex-1, wsc-, pan-2 -(GJP#961::wscR102W-3xHA, GJP#961::wscR102W-eGFP)	Fig. 8 D
GSF #1004	a, wsc-,Δhex-1 (POKE 103::phex-wscR102W-eGFP, POKE103::phex-RFP-PTS1)	Fig. 8 E
GSF #302	A, Δhex-1, pan-2-	Fig. S1
GSF #299	a, Δhex-1, wsc-, pan-2-	Fig. S1
GSF #277	a, wsc-, pan-2-	Fig. S1
GSF #290	a, pan-2-	Fig. S1
GSF #459	A, pex 14-, wsc-, pan-2-	Fig. S1
GSF #462	A, pex 14-, pan-2-	Fig. S1
GSF #543	A, Δwsc, pan-2-, his-3- (POKE103::phex-RFP-PTS1)	Fig. S2

Table S2. **Plasmids**

Plasmid	Identity/source
pEGFP-N1	Clontech Laboratories, Inc.
pEYFP-N1	Clontech Laboratories, Inc.
pRSET-B mCherry	Shaner et al., 2004
pREP-41	Craven et al., 1998
pBM-60	Margolin et al., 1997
pMF272	Freitag et al., 2004
pMF280	Freitag et al., 2004
pBS + SK	Stratagene
pCSN43	Staben et al., 1989
p413GPD	Sikorski and Hieter, 1989
p415GPD	Sikorski and Hieter, 1989
p416GPD	Sikorski and Hieter, 1989
GJP #602	Tey et al., 2005
GJP #613	Tey et al., 2005
GJP #961	*pBS + SK::hygr*
GJP #1001	*TOPOII::wsc*
GJP #1009	*TOPOII::wsc deletion cassette*
GJP #1010	*GJP#961::wsc*
GJP #1050	*GJP#961::wsc(new XbaI&SphI)*
GJP #1064	*GJP#961::wsc-3xha*
GJP #1081	*GJP#961::wsc-egfp*
GJP #1245	*pBM60::wsc-egfp*
GJP #1302	*GJP#961::wsc-eYFPI*
GJP #1304	*GJP#961::wsc-eYFPII*
GJP #1322	*pBM60::wscR102Q-egfp*
GJP #1324	*pBM60::wscR102W-egfp*
GJP #1353	*pBM60::wsc-3xha*
GJP #1361	*pBM60::wscR102W-3xha*
GJP #1372	*pBM60::wscR102Q-3xha*
GJP #1406	*POKE 103::phex-rfp-pts1*
GJP #1500	*POKE 103::phex-wsc-gfp*
GJP #1530	*pMF272::pex14*
GJP #1561	*GJP#961::wscR102W-3xha*
GJP #1564	*GJP#961::wscR102W-egfp*
GJP #1662	*p416GPD::wsc-egfp*
GJP #1712	*p413GPD::rfp-pts1*
GJP #1821	*POKE 103::phex-wscR102W-gfp*
GJP #1876	*pBM60::rfp-pts1*

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Table S3. **Oligonucleotides**

Name of oligo	Sequence (5'-3')
BS + SK-Pacl.f	cgataccgtcgaccttaattaagggcccggtaccc
BS + SK-Pacl.r	gggtaccgggcccttaattaaggtcgacggtatcg
HYGr.Notl	gccgcggccgccaagatgatattgaagga
HYGr.Pacl	gccttaattaagttcggtcggcatctact
Pacl.kill.1	tgggtaccgggcccttagctaagttcggtcggca
Pacl.Kill.2	tgccgaccgaacttagctaagggcccggtaccca
Pacl create.1	tgccagctgcattaattaatcggccaacgcgcg
Pacl create.2	cgcgcgttggccgattaattaatgcagctggca
7842.f-2	gcggcggccgcgagaatggagatcagagcagga
7842.r-2	gcgttaattaatggaaggctgcatcgtggacca
7842.r-3	gcgactagttggaaggctgcatcgtggacca
7842-Seq.f-1	cacatagcagtcacgatcca
7842-Seq.f-2	gcaatgatggccatggcaaca
7842-Seq.r-1	gtaccgtaccggtaccgcta
7842-Seq.r-2	ctgacctcatcgttcacctca
7842.P-1	acgcagagagccctcgcaagt
7842.P-2	ttcaatatcatcttgcggccgcgtcaagcctgcagaggaagggca
7842.P-3	atgccgaccgaacttaattaagatggacatcgagttcgagct
7842.P-4	gttcggatgctggaggaaggt
7842.P-5	tgcccttcctctgcaggcttgacgcggccgcaagatgatattgaa
7842.P-6	agctcgaactcgatgtccatcttaattaagttcggtcggcat
eGFP-3'-Xbal	gcgtctagaatggtgagcaagggcgaggagct
eGFP.3'-Sphl	cgcgcatgcttacttgtacagctcgtccatgc
HA.3'-Xbal	gcgtctagaatggcatacccttacgatgtt
HA.3'-Sphl	gcggcatgcttaagcgtaatctggaacgtcgtaa
7842-3'-Mut-1	ccagaacccccgttactctagaaaaatgctagctcgggccagctcaag
7842-3'-Mut-2	cttgagctggcccgagctagcattttctagagtaacggggggttctgg
7842.3'-Mut-3	ctctagaaaaatgcatgctcgggccagctc
7842.3'-Mut-4	gagctggcccgagcatgcattttctagag
Not1.pts1.ch.5'	gcagcggccgccatggtgagcaagggcga
Pac1.pts1.ch.3'	gccttaattaaaggcgggacttgtacagctcgtcca
wsc5'-Notl	gcggcggccgccgctaccttcctctcgcc
wsc3'-Pacl	gcgttaattaagcttacttgtacagctcgtcca
EYFP-l-3'-Xbal	gcgtctagagatccaccggtcgccaccat
EYFP-l-3'-Sphl	gcggcatgcttacttgtcggcggtgatatagacgt
EYFP-ll-3'-Xbal	gcgtctagaataccgccgacaagcagaagaa
EYFP-ll-3'-Sphl	gcggcatgcttacttgtacagctcgtccat
Pex14-Spel	gcactagtatggccatccgcgaggacct
Pex14-Pacl	gccttaattaaaagcggcttcgtcgcctccgt
wsc-gfp-5'-Spel	gcgactagtatgtcggtaaaagaacaccaca
wsc-gfp-3'-Xhol	gcgctcgagttacttgtacagctcgtccat
mCherry-5'-Spel	gcgactagtatggtgagcaagggcgaggagga
mCherry-3'-Xhol	gcgctcgagttagagcttggacttgtacagctcgtccatgccgcc
wsc-Mut7-f	gccatcttggggacctgggccgtgaagtag
wsc-Mut7-r	ctacttcacggcccaggtccccaagatggc
wsc-Mut8-f	gccatcttggggacccaggccgtgaagtag
wsc-Mut8-r	ctacttcacggcctgggtccccaagatggc
fis1-1	ggcggtcgggcgtgatgttgaa
fis1-2	ttcaatatcatcttgcggccgcggtatcctgaatagaagtaggt
fis1-3	acctacttctattcaggataccgcggccgcaagatgatattgaa
fis1-4	tcatcatccatcaggcgaccgttaattaagttcggtcggcat
fis1-5	atgccgaccgaacttaattaacggtcgcctgatggatgatga
fis1-6	ccgattaagcatgtcgcaggt
dnm1-1	ggtacacaggtcaacgtgccggt
dnm1-2	ttcaatatcatcttgcggccgcggagttgagcgcaagacggaa
dnm1-3	ttccgtcttgcgctcaactccgcggccgcaagatgatattgaa
dnm1-4	atctgtaggtgtagcctgaggttaattaagttcggtcggcat
dnm1-5	atgccgaccgaacttaattaacctcaggctacacctacagat
dnm1-6	gtgttcgttgtggtggtgctcgt
vps1-1	gacgcggcctcattcaggcaga
vps1-2	ttcaatatcatcttgcggccgcgattgctggctatgcagaggt
vps1-3	acctctgcatagccagcaatcgcggccgcaagatgatattgaa
vps1-4	tcttctcaaacgtagtactaaccttaattaagttcggtcggcat
vps1-5	atgccgaccgaacttaattaaggttagtactacgtttgagaaga
vps1-6	ctgtcgtggagaagtggcttggt