Supplementary Table 1 | *Saccharomyces cerevisiae* strains used in this study.

Strain	Genetic background	Source	No.
YPH499 (WT)	*MATa ura3-52 lys2-801_amber ade2-101_orchre trp1-Δ63 his3-Δ200 leu2-Δ1*	Ref. *44*	1501
BY4741 (WT)	*MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	Euroscarf	1354
334 (WT)	*MATa pep4-3 prp1-1122 leu2 ura3-112 reg1-501 gal1*	Ref. *27*	1079
YWO2 (WT)	*MATa trp1-1 his3-Δ200 ura3-52 lys2-801 leu2-3,-112*	Ref.*45*	5360
*ubx2*Δ	BY4741 *ubx2::kanMX4*	Euroscarf	2430
*vms1*Δ	BY4741 *vms1::kanMX4*	Euroscarf	4348
*doa1*Δ	BY4741 *doa1::kanMX4*	Euroscarf	4926
*dfm1*Δ	BY4741 *dfm1::kanMX4*	Euroscarf	5372
*msp1*Δ	BY4741 *msp1::kanMX4*	Euroscarf	1458
cdc48-2	BY4741 *cdc48::CDC48-2-kanMX4*	Euroscarf	4779
cdc48-3	BY4741 *cdc48::CDC48-3-kanMX4*	Euroscarf	4778
ufd1-2	BY4741 *ufd1::UFD1-2-kanMX4*	Euroscarf	4781
npl4-1	YWO2 *npl4-1*	Ref. *45*	5365
*pre9*Δ	BY4741 *pre9::kanMX4*	Euroscarf	4345
*shp1*Δ	BY4741 *shp1::kanMX4*	Euroscarf	4927
*pam17*Δ	BY4741 *pam17::hphNT1*	this study	5301
*pam17*Δ	YWO2 *pam17::hphNT1*	this study	5361
*ubx2*Δ *vms1*Δ	BY4741 *vms1::kanMX4 ubx2::hphNT1*	this study	5303
*ubx2*Δ *msp1*Δ	BY4741 *msp1::kanMX4 ubx2::hphNT1*	this study	5304
*ubx2*Δ *pam17*Δ	BY4741 *ubx2::kanMX4 pam17::hphNT1*	this study	5302
*cdc48-2 pam17*Δ	BY4741 *cdc48::CDC48-2-kanMX4 pam17::hphNT1*	this study	5346
*pre9*Δ *pam17*Δ	BY4741 *pre9::kanMX4 pam17::hphNT1*	this study	5347
*doa1*Δ *pam17*Δ	BY4741 *doa1::kanMX4 pam17::hphNT1*	this study	5348
*vms1*Δ *pam17*Δ	BY4741 *vms1::kanMX4 pam17::hphNT1*	this study	5349
*ufd1-2 pam17*Δ	BY4741 *ufd1::UFD1-2-kanMX4 pam17::hphNT1*	this study	5350
*npl4-1 pam17*Δ	YWO2 *npl4-1 pam17::hphNT1*	this study	5363
*ubx2*Δ + *UBX2*	BY4741 *ubx2::kanMX4* pRS415-UBX2	this study	5305
*ubx2*Δ *pam17*Δ + *UBX2*	BY4741 *ubx2::kanMX4 pam17::hphNT1* pRS415-UBX2	this study	5351
$Tom40_{HA}$	BY4741 *tom40::TOM40-HA-HIS3MX6*	this study	5035

Tom40$_{HA}$ *ubx2*Δ	BY4741 *ubx2::kanMX4 tom40::TOM40-HA-HIS3MX6*	this study	5037
Tom40$_{HA}$ *ubx2*Δ + *UBX2*Δ*UBA*	BY4741 *ubx2::kanMX4 tom40::TOM40-HA-HIS3MX6* pRS415-*UBX2*Δ*UBA*	this study	5369
Tom40$_{HA}$ *ubx2*Δ + *UBX2*Δ*UBX*	BY4741 *ubx2::kanMX4 tom40::TOM40-HA-HIS3MX6* pRS415-*UBX2*Δ*UBX*	this study	5370
Tom40$_{HA}$ *ubx2*Δ + *UBX2*Δ*iMTS-L*	BY4741 *ubx2::kanMX4 tom40::TOM40-HA-HIS3MX6* pRS415-*UBX2*Δ*iMTS-L*	this study	5371
Tom40$_{HA}$ *vms1*Δ	BY4741 *vms1::kanMX4 tom40::TOM40-HA-HIS3MX6*	this study	5307
Tom40$_{HA}$ *doa1*Δ	BY4741 *doa1::kanMX4 tom40::TOM40-HA-HIS3MX6*	this study	5358
Tom40$_{HA}$ *ufd1-2*	BY4741 *ufd1::UFD1-2-kanMX4 tom40::TOM40-HA-HIS3MX6*	this study	5359
Ubx2$_{HA}$	BY4741 *ubx2::UBX2-HA-HIS3MX6*	this study	5036
Ubx2$_{His}$	BY4741 *ubx2::UBX2-HIS-HIS3MX6*	this study	5308
Tom22$_{His}$	YPH499 *tom22::TOM22-HIS-HIS3MX6*	Ref. *37*	1456
Hrd1$_{HA}$	BY4741 *hrd1::HRD1-HA-HIS3MX6*	this study	5038
Doa10$_{ProtA}$	BY4741 *doa10::DOA10-ProtA-hphNT1*	this study	5309
Por1$_{HA}$	BY4741 *por1::POR1-HA-HIS3MX6*	Ref. *46*	3716
$_{HA}$Tom5	YPH499 *tom5::HA-TOM5*	Ref. *32*	4052
$_{HA}$Tom6	YPH499 *tom6:: HA-TOM6*	Ref. *32*	4053
$_{HA}$Tom7	YPH499 *tom7:: HA-TOM7*	Ref. *32*	4054
*tom20*Δ	YPH499 *tom20::URA3* *pYep13-TOM22*	Ref. *15*	1273
*tom70*Δ	YPH499 *tom70::HIS3*	Ref. *15*	1059
*mim1*Δ	YPH499 *mim1::ADE2*	Ref. *15*	2195
*sam37*Δ	YPH499 *sam37::LEU2*	Ref. *31*	1271
*ubx2*Δ (334)	334 *ubx2::hphNT1*	this study	5310
334-pCYB2 -ΔDHFR-HB	334 pDP-CYB2(1-84)Δ(47-65)-DHFR-HB(81-181)	Ref. *27*	1080
334-pCYB2 -DHFR-HB	334 pDP-CYB2(1-84)-DHFR-HB(81-181)	Ref. *27*	1081
*ubx2*Δ pCYB2 -ΔDHFR-HB	334 *ubx2::hphNT1* pDP-CYB2(1-84)Δ(47-65)-DHFR-HB(81-181)	this study	5312
*ubx2*Δ pCYB2 -DHFR-HB	334 *ubx2::hphNT1* pDP-CYB2(1-84)-DHFR-HB(81-181)	this study	5311
334 *pYEp352*	334 pYEp352	this study	5313
334 *ubx2*Δ *pYEp352*	334 *ubx2*Δ pYEp352	this study	5314
*ubx2*Δ + *UBX2-GFP*	BY4741 *ubx2::kanMX4* pUG35-Ubx2-GFP	this study	5345

Supplementary Data Table 2 | Plasmids used in this study.

Plasmid	Source	No.
pRS415	Ref. *15*	X24
pRS415-UBX2	this study	P3114
pRS415-UBX2ΔUBA	this study	P3116
pRS415-UBX2ΔUBX	this study	P3117
pRS415-UBX2ΔiMTS-L	this study	P3118
pUG35-Ubx2-GFP	this study	P3115
pFA6a-3xHA-HIS3MX6	Ref. *47*	1450; pYM2
pFA6a-His10-HIS3MX6	Ref. *37*	X63
pFA6a-ProtA-hphNT1	Ref. *34*	P1450
pFA6a-hphNT1	Ref. *35*	P2722
pYEp352	Addgene No. 37673	X51
pDP-CYB2 (1-84)Δ(46-66)-DHFR-HB(81-181)	Ref. *27*	B55
pDP-CYB2 (1-84)-DHFR-HB(81-181)	Ref. *27*	B54

Supplementary Data Table 3 | Primers used in this study.

Name	Sequence (5'->3')	Source	No.
Tom40-HA_fw (HIS3MX6)	CAACAAGGTTTAGACGCAGATGGTAACCCATTGCAAGCTCTTCCTCAATTGCGTACGCTGCAGGTCGAC	this study	PR2220
Tom40-HA_rv (HIS3MX6)	GATAAAAACAATGATTATTTATTCAACCATAAAAAAGCCAAGGGAAGATTTATCGATGAATTCGAGCTCG	this study	PR2221
Ubx2-His/HA_fw (HIS3MX6)	GGAAGCACTGGATGAAGAAGATGAAGAAGATGAGGAAAATGAAGAACAACGTACGCTGCAGGTCGAC	this study	PR1193
Ubx2-His/HA_rv (HIS3MX6)	CCAGAAACTCTTTGTACGCGTTTGTCGTTTTTAACGATATGCTATTTTAATCGATGAATTCGAGCTCG	this study	PR1194
Hrd1-HA_fw (HIS3MX6)	CAAGAAAATTGTCATACCAGATAAATTTATCCAGCATATCCGTACGCTGCAGGTCGAC	this study	PR2222
Hrd1-HA_rv (HIS3MX6)	TTTCTTTAAAAAAAACTATGTATAATATAAAACATGCAATATCGATGAATTCGAGCTCG	this study	PR2223
Porin-HA_fw (HIS3MX6)	GAAGTTGTCTGAACCTGTTCACAAGCTAGGTTGGTCTTTGTCCTTCGACGCTCGTACGCTGCAGGTCGAC	this study	PR728
Porin-HA_rv (HIS3MX6)	CGAGCACATATATGGTATATAGTGAACATATATATATTAGATATATACGTATCGATGAATTCGAGCTCG	this study	PR729
Doa10-ProtA_fw (hphNT1)	CACTAAGGGTAGAGCTTTAGAAAATTTACCAGATGAAAGTCGTACGCTGCAGGTCGAC	this study	PR2224

Doa10-ProtA_rv (hphNT1)	TATGCTAGCATTCATTTTAAATGTAAGGAAGAAAACGCCTATCGATGAATTCGAGCTCG	this study	PR2225
Ubx2Δ_fw (hphNT1)	GCAGCAGGTATTACGATAGAAGTATGTAATAGCTTTCATAGTGTAATCGAAGATGCGTACGCTGCAGGTCGAC	this study	PR2226
Ubx2Δ_rv (hphNT1)	CTCCAGAAACTCTTTGTACGCGTTTGTCGTTTTTAACGATATGCTATTTTATCAATCGATGAATTCGAGCTCG	this study	PR2227
Pam17Δ_fw (hphNT1)	GTTCAAAGAAGTGTTAAAAACATTCAGAAAACATTGTCCGCCTCTTCAAAATGCGTACGCTGCAGGTCGAC	this study	PR2228
Pam17Δ_rv (hphNT1)	CATATATGTATATATACAGAGTCTGAGAAGAAGGAAAAGATCACACGTTCAATCAATCGATGAATTCGAGCTCG	this study	PR2229
XhoI-Ubx2-up	CCGCTCGAGCGGTATATTGTTGGGCTCTAGAACAG	this study	PR2230
XmaI-Ubx2-down	CCCCCCGGGGGGCTGTAGATGCTGCAATGTCG	this study	PR2231
Sp6-Ubx2_fw1	TCGATTTAGGTGACACTATAGAATACGCCGCCGCCATGCCAGTAGTCAATCATG	this study	PR2232
Sp6-Ubx2_fw2	TCGATTTAGGTGACACTATAGAATACGCCGCCGCCATGTGGAAAGGCGAACCAGAC	this study	PR2233
Sp6-Ubx2_fw3	TCGATTTAGGTGACACTATAGAATACGCCGCCGCCATGCCCATGGCTGAGACCTTG	this study	PR2234
Sp6-Ubx2_fw4	TCGATTTAGGTGACACTATAGAATACGCCGCCGCCATGACTGTGTGGTCCATGTTTG	this study	PR2235
Ubx2_rv1	GATCTCATTGTTCTTCATTTTCCTC	this study	PR2236
Ubx2_rv2	GATCTTACGTTGTCTCGAACGGC	this study	PR2237
Ubx2_rv3+3M	GATCTTACATCATCATCTCAGCCATGGGTGTAGAC	this study	PR2238
XbaI-Ubx2_fw	GATCTCTAGAATGCCAGTAGTCAATCATGAG	this study	PR2254
Sal1-Ubx2_rv	GATCGTCGACTTGTTCTTCATTTTCCTCATC	this study	PR2255
Ubx2ΔUBA_fw	CACCTTTCGCACACAGAATGGAAAGGCGAACCAGACC	this study	PR2256
Ubx2ΔUBA_rv	GGTCTGGTTCGCCTTTCCATTCTGTGTGCGAAAGGTG	this study	PR2257
Ubx2ΔUBX_fw	CAGCCGTTCGAGACAACGGCACTGGATGAAGAAGATG	this study	PR2258
Ubx2ΔUBX_rv	CATCTTCTTCATCCAGTGCCGTTGTCTCGAACGGCTG	this study	PR2259
Ubx2ΔMTS_fw	CGTCTACACCCATGGCTGAGAGACCATTGCCAGCGAACTTCC	this study	PR2260

Ubx2ΔMTS_rv	GGAAGTTCGCTGGCAATGGTCTCTCAGCCATG GGTGTAGACG	this study	PR2261

Supplementary Data Table 4 | Antisera/antibodies used in this study.

Antigen	**Source**	**No.**
Ubx2	this study	GR1484-6
Cdc48	this study	GR5015-4
Ufd1	this study	GR5059-6 (affinity purified)
Hrd1	this study	GR5067-4
Doa10	this study	GR5065-4
Msp1	this study	GR1468-7
Tom20	Ref. *32*	GR3225-7
Tom22	Ref. *32*	GR3227-3
Tom40	Ref. *32*	GR168-5
Tom5	Ref. *32*	GR3419-7
Tom70	Ref. *32*	GR657-3
Sam50	Ref. *32*	GR312-17 (affinity purified)
Mim1	Ref. *32*	GR544-1
Om14	Ref. *32*	GR3041-4
Om45	Ref. *32*	GR1311-4
Porin	this study	GR3622-4
Pam17	this study	GR3885-5
Tim23	Ref. *38*	133-14
Tim44	Ref. *38*	GR1835-4
Tim50	Ref. *38*	GR 3881-4
Rip1	Ref. *38*	GR542-3
Cox4	Ref. *38*	GR578-5
Mdj1	Ref. *48*	121-7
Sod2 precursor form	Ref. *49*	GR3409-4
Sec61	Ref. *50*	GR759-5
Sss1	Ref. *50*	GR787-6
Ssa1	Ref. *34*	GR1011-4
Pgk1	Ref. *34*	GR753-4
Cox1	Ref. *38*	GR1539-4

Cyt1	Ref. *38*	GR540-3
Cox2	Ref. *38*	GR1948-4
HA	Roche	Cat. No.11583816001
Ubiquitin	Santa Cruz	sc-8017
DHFR	Santa Cruz	sc-377091

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