SUPPLEMENTAL MATERIAL

Hübscher et al.

SUPPLEMENTAL FIGURES

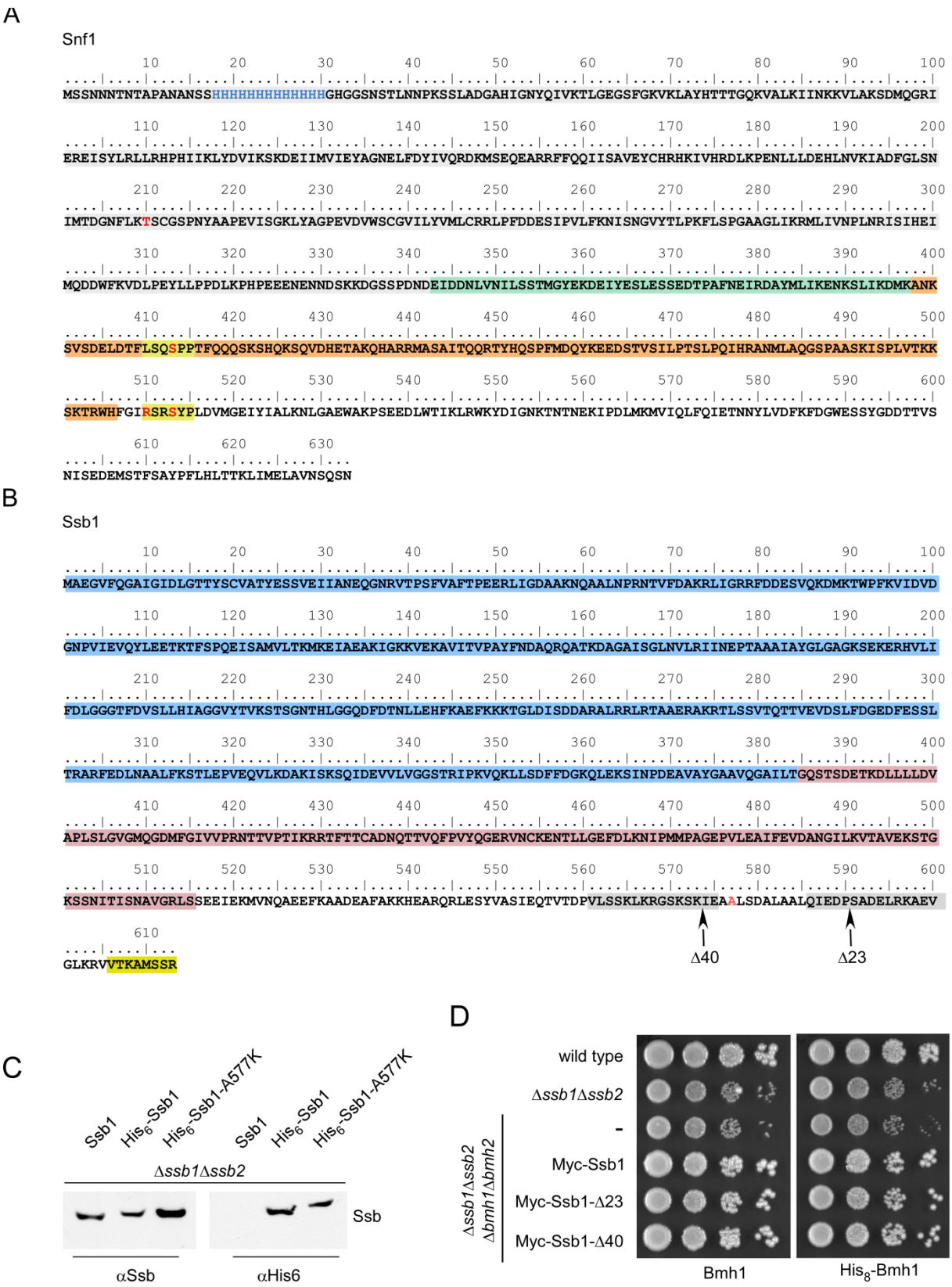

A
Snf1
MSSNNNTNTAPANANSSHHHHHHHHHHHHHGHGGSNSTLNNPKSSLADGAHIGNYQIVKTLGEGSFGKVKLAYHTTTGQKVALKIINKKVLAKSDMQGRI
EREISYLRLLRHPHIIKLYDVIKSKDEIIMVIEYAGNELFDYIVQRDKMSEQEARRFFQQIISAVEYCHRHKIVHRDLKPENLLLDEHLNVKIADFGLSN
IMTDGNFLKTSCGSPNYAAPEVISGKLYAGPEVDVWSCGVILYVMLCRRLPFDDESIPVLFKNISNGVYTLPKFLSPGAAGLIKRMLIVNPLNRISIHEI
MQDDWFKVDLPEYLLPPDLKPHPEEENENNDSKKDGSSPDNDEIDDNLVNILSSTMGYEKDEIYESLESSEDTPAFNEIRDAYMLIKENKSLIKDMKANK
SVSDELDTFLSQSPPTFQQQSKSHQKSQVDHETAKQHARRMASAITQQRTYHQSPFMDQYKEEDSTVSILPTSLPQIHRANMLAQGSPAASKISPLVTKK
SKTRWHFGIRSRSYPLDVMGEIYIALKNLGAEWAKPSEEDLWTIKLRWKYDIGNKTNTNEKIPDLMKMVIQLFQIETNNYLVDFKFDGWESSYGDDTTVS
NISEDEMSTFSAYPFLHLTTKLIMELAVNSQSN
B
Ssb1
MAEGVFQGAIGIDLGTTYSCVATYESSVEIIANEQGNRVTPSFVAFTPEERLIGDAAKNQAALNPRNTVFDAKRLIGRRFDDESVQKDMKTWPFKVIDVD
GNPVIEVQYLEETKTFSPQEISAMVLTKMKEIAEAKIGKKVEKAVITVPAYFNDAQRQATKDAGAISGLNVLRIINEPTAAAIAYGLGAGKSEKERHVLI
FDLGGGTFDVSLLHIAGGVYTVKSTSGNTHLGGQDFDTNLLEHFKAEFKKKTGLDISDDARALRRLRTAAERAKRTLSSVTQTTVEVDSLFDGEDFESSL
TRARFEDLNAALFKSTLEPVEQVLKDAKISKSQIDEVVLVGGSTRIPKVQKLLSDFFDGKQLEKSINPDEAVAYGAAVQGAILTGQSTSDETKDLLLLDV
APLSLGVGMQGDMFGIVVPRNTTVPTIKRRTFTTCADNQTTVQFPVYQGERVNCKENTLLGEFDLKNIPMMPAGEPVLEAIFEVDANGILKVTAVEKSTG
KSSNITISNAVGRLSSEEIEKMVNQAEEFKAADEAFAKKHEARQRLESYVASIEQTVTDPVLSSKLKRGSKSKIEAALSDALAALQIEDPSADELRKAEV
GLKRVVTKAMSSR
Δ40
Δ23
C
Ssb1
His6-Ssb1
His6-Ssb1-A577K
Ssb1
His6-Ssb1
His6-Ssb1-A577K
Δssb1Δssb2
Ssb
αSsb
αHis6
D
wild type
Δssb1Δssb2
-
Myc-Ssb1
Myc-Ssb1-Δ23
Myc-Ssb1-Δ40
Δssb1Δssb2 Δbmh1Δbmh2
Bmh1
His8-Bmh1

Figure S1. (A) Amino acid sequence and domain structure of Snf1. The kinase domain is high-lighted in gray. The domain of Snf1 homologous to the mammalian αAMPK autoinhibitory domain (αAID) is high-lighted in green, the adjacent α-linker in orange (1-3). Amino acids 510-515, which correspond a mode I 14-3-3 binding motif (RSXpSXP) (4,5), and 410-415, which closely resemble the mode I motif are high-lighted in yellow. The natural internal poly-histidine stretch is shown in blue. Residue T210, which was mutated to alanine (Snf1-T210A) and residues S413, R510, and S513, which were mutated to alanine in the Snf1-RSS triple mutant are shown in red. **(B)** Amino acid sequence and domain structure of Ssb1. The nucleotide binding domain is high-lighted in blue, the peptide binding domain is high-lighted in pink. Peptide sequences employed to generate Ssb1-specific polyclonal antibodies (Eurogentec) are high-lighted in gray. Alanine 577 is shown in red; an exchange of A577 to lysine (Ssb1-A577K) leads to better recognition by the Ssb1-specific antibody (see C). The potential, C-terminal mode III 14-3-3 recognition motif (p(S/T)$X_{1/2}$-COOH) is shown in yellow (5,6). **(C)** Total extracts of Δ*ssb1*Δ*ssb2* strains expressing wild type Ssb1, His_6-Ssb1, or His_6-Ssb1-A577K were analyzed via immunoblot analysis employing the Ssb1-specific antibody, or an antibody recognizing the His_6-tag. **(D)** Strains as indicated were grown on YPD for 2 days at 30°C.

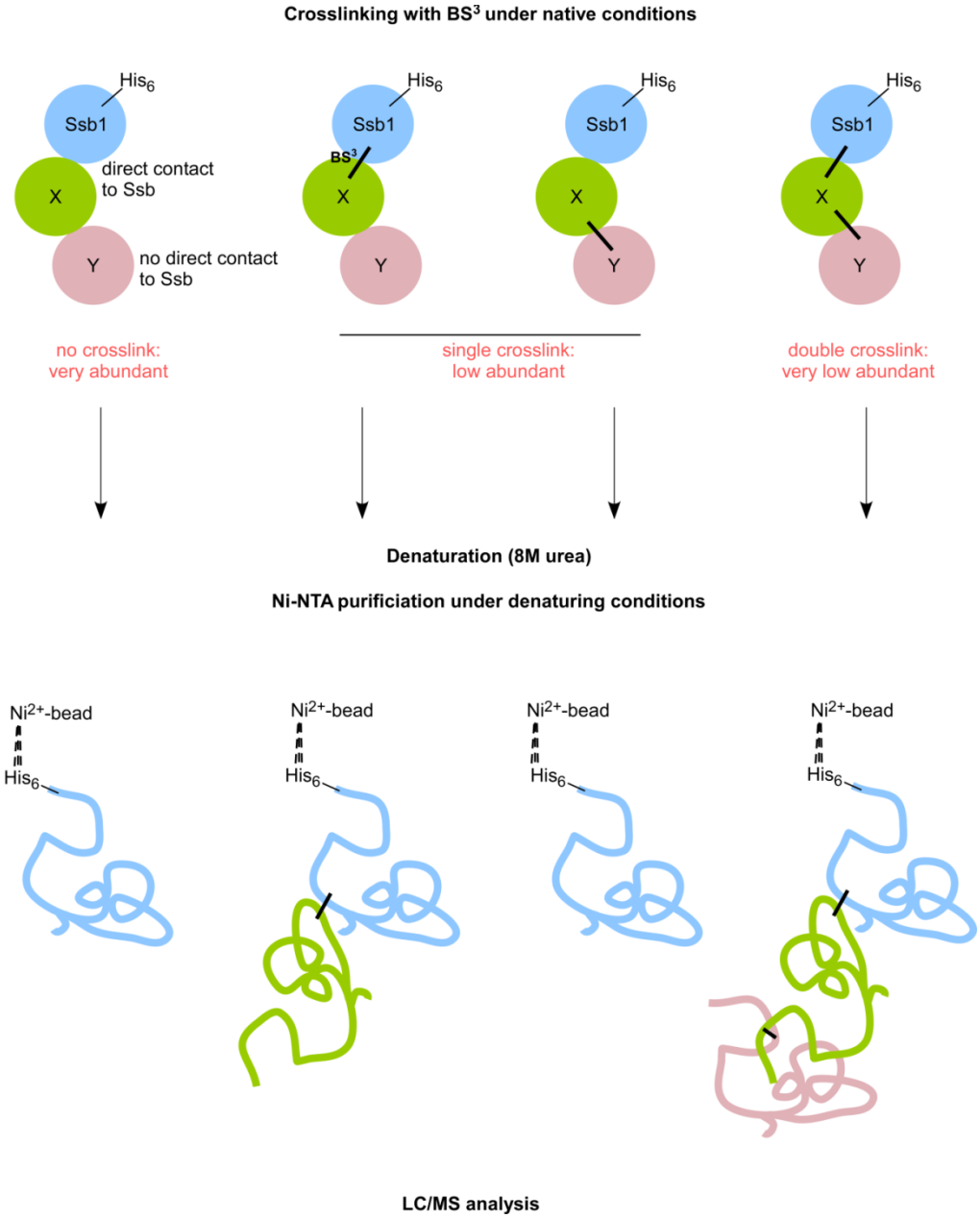


Figure S2. Experimental outline of the crosslinking approach aimed on the identification of direct Ssb interactors. Cells expressing His-tagged Ssb (His-Ssb) were shock-frozen in liquid nitrogen, powdered, and then resuspended directly in a buffer containing the homobifunctional amino-reactive crosslinker BS^3, with a spacer length of 11.4Å. After crosslinking proteins were denatured in 8M urea, His-Ssb and proteins crosslinked to His-Ssb, were purified via Ni-NTA, and were subsequently identified via LC/MS (see Materials and Methods). Because crosslinking in this experimental system was inherently inefficient, the bulk of His-Ssb migrated as a monomer. Only a minor fraction of His-Ssb was covalently crosslinked to proteins in close proximity (≤ 11.4Å, protein X, in green). Crosslinks between Ssb and nascent polypeptides were below the detection limit of the LC/MS analysis. Likewise, double-crosslinks, which connect Ssb to two proteins (e.g. protein X and protein Y, shown in pink) via 2 molecules of BS^3 are very low abundant and likely below the detection limit. This holds especially true if proteins X and/or Y are low abundant, as e.g. components of the SNF1/Glc7 pathway. See also Fig. 3 and Table S4.

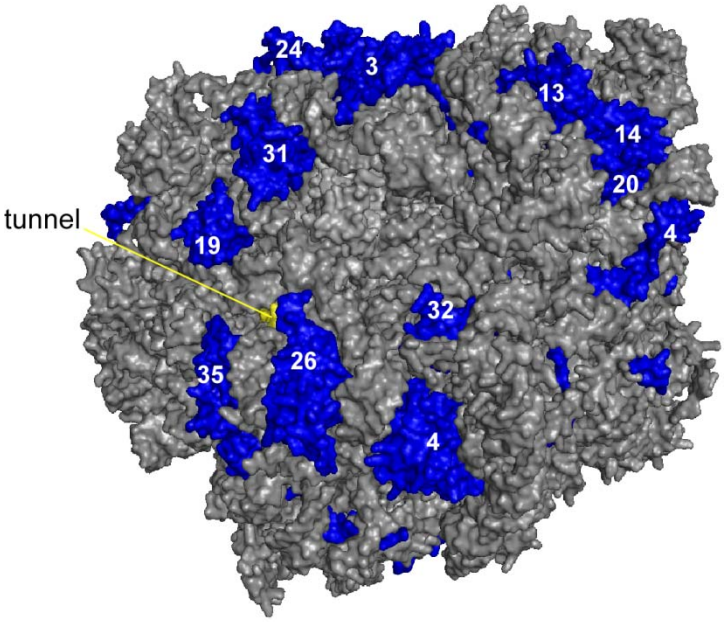


Figure S3. Localization of large ribosomal subunit proteins, which formed crosslinks with Ssb (Table 1). Ribosomal proteins in proximity to Ssb did not randomly scatter over the surface of the large subunit, but formed a rim-like pattern, excluding specific regions of the ribosomal surface. Shown is a view of the *S. cerevisiae* large ribosomal subunit based on PDB code 3U5H/3U5I (7,8).

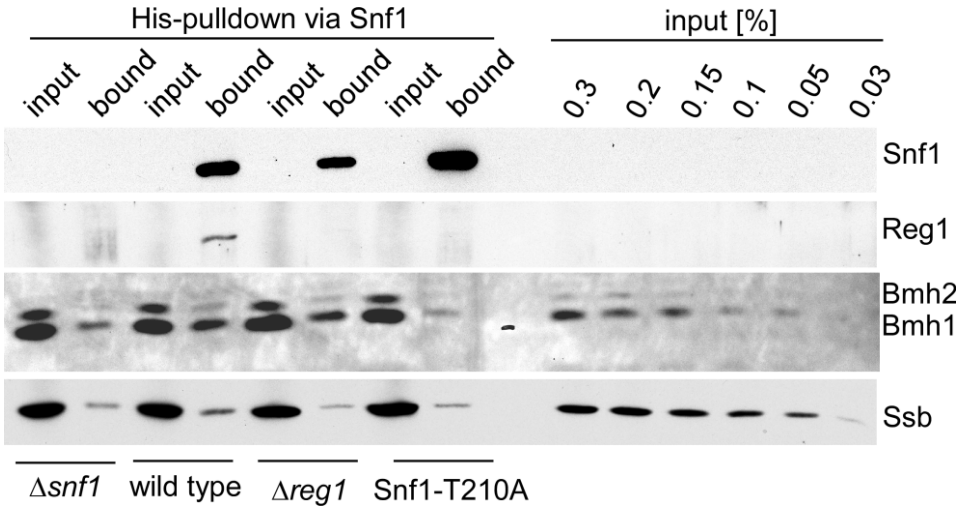
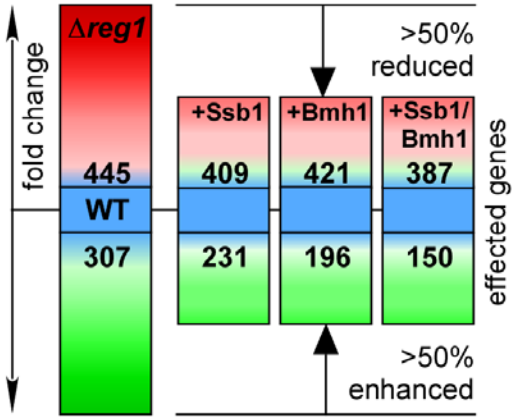
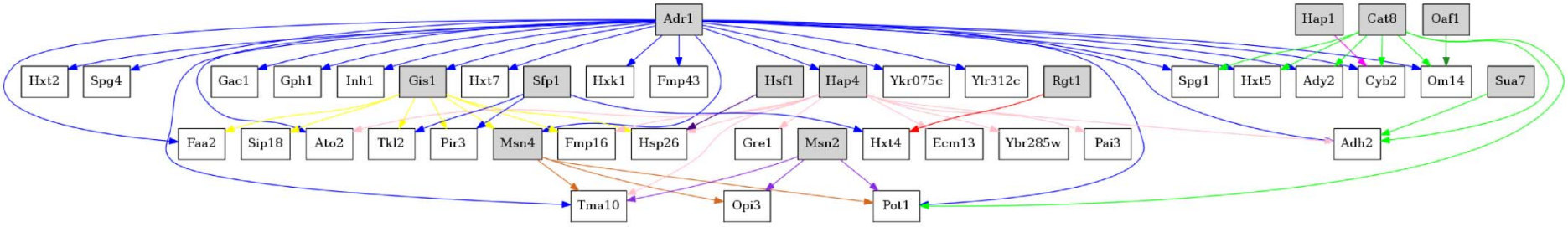


Figure S4. Estimation of the fraction of affinity purified Snf1 bound to $(Bmh)_2$ or Ssb. A yeast cell contains approximately 280.000 molecules of Ssb1/Ssb2 (9), 600 molecules of Snf1 (10), 2600 molecules of Reg1 (10), and 200.000 molecules of Bmh1/Bmh2 (10). Because 14-3-3 proteins function as homo- or heterodimers (11) this correpsonds to ~ 100.000 molecules of active $(Bmh)_2$. If each molecule of Snf1 was in a complex with Ssb and/or $(Bmh)_2$, ~ 0.2% of total Ssb (600 molecules of the total 280.000 molecules) and ~ 0.6% of total $(Bmh)_2$ (600 molecules of the total 100.000 molecules) were expected to co-purifiy with Snf1. The left part of the Figure shows the affinity purification of Snf1 from the indicated strains. This part of the Figure is also shown in Fig. 3C, which contains details on the experiment. To estimate what fraction of Ssb and $(Bmh)_2$ co-purified with Snf1, a dilution series of the input was analyzed on the same gel/blot (0.3 - 0.03% input: fraction of cell extract added to the Ni-NTA pull down reaction). Based on 3 independent experiments, one of which is shown, approximately 0.2-0.3% of the $(Bmh)_2$ input was co-purified with Snf1 in extracts derived from wild type or Δ*reg1* cells. $(Bmh)_2$ did not co-purify with Snf1 in the extract derived from Snf1-T210A. Assuming that the bulk of Snf1 was recovered in the bound material, one can estimate that about 30-50% of Snf1 was in a complex with $(Bmh)_2$ under these conditions. A more precise analysis is hindered by the strong imbalance between the Snf1 and Bmh expression level and by background binding of Bmh, which is likely due to the binding of Bmh to other proteins, as for example Cyr1 or Rom2 (12), containing internal poly-histidine segments (Table S4). If Ssb was bound to 30-50% of affinity purified Snf1, approximately 0.05-0.1% of Ssb contained in the input should copurify with Snf1. Due to background binding of Ssb in the Δ*snf1* strain, and due to variations within the experiments, this was below the detection limit of the experimental setup. Interaction between Snf1 and Ssb, however, was revealed via the crosslinking approach (see Fig. 3B, 3C, and Table S4).

A


fold change
Δreg1
445
WT
307
+Ssb1
409
231
+Bmh1
421
196
+Ssb1/
Bmh1
387
150
>50%
reduced
>50%
enhanced
effected genes

B


Adr1
Hap1
Cat8
Oaf1
Hxt2
Spg4
Gac1
Gph1
Inh1
Gis1
Hxt7
Sfp1
Hxk1
Fmp43
Hsf1
Hap4
Ykr075c
Ylr312c
Rgt1
Spg1
Hxt5
Ady2
Cyb2
Om14
Sua7
Faa2
Sip18
Ato2
Tkl2
Pir3
Msn4
Fmp16
Hsp26
Gre1
Msn2
Hxt4
Ecm13
Ybr285w
Pai3
Adh2
Tma10
Opi3
Pot1

C

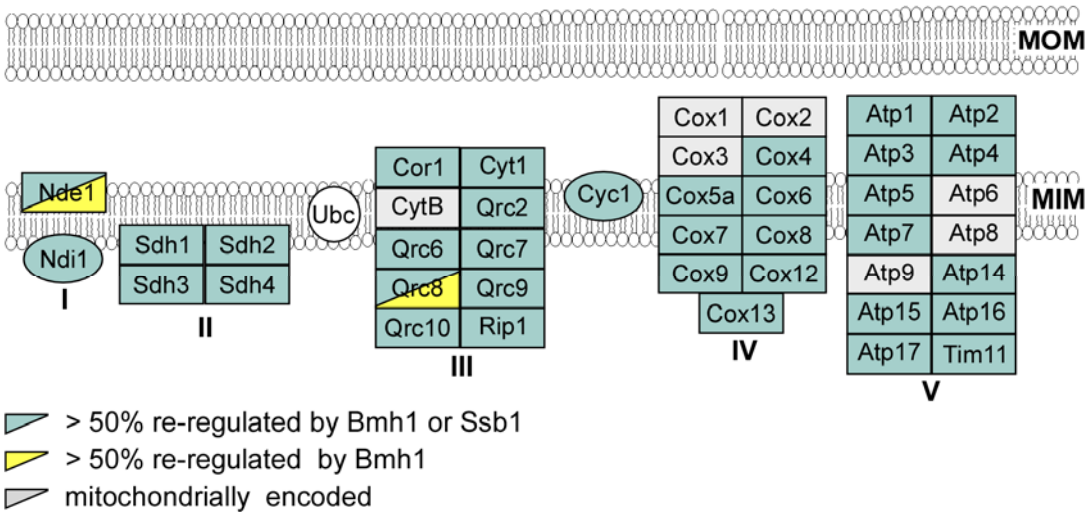


Figure S5. (A) Genes de-regulated in Δ*reg1* and re-regulated by overexpression of Ssb1 or Bmh1 by at least 50% (Table S2). **(B)** TF ranking of the 53 genes up-regulated ≥ 1.5-fold in the Δ*reg1* strain and re-regulated by overexpression of Bmh1 to an effect size of ≤ 0.66 (over-regulated genes, Table S2, Fig. 4F). TFs are shown in gray and target genes in white. Analysis was performed via the YEASTRACT TFRank tool (13). Filters of the tool were set to allow for the analysis of only documented transcription factors (activators and inhibitors) based on DNA binding plus expression evidence. The filter for documented regulations by environmental condition was set to *carbon source quality/availability, glucose limitation*. TFRank heat diffusion coefficient was set 0.5 (13). **(C)** Schematic representation of genes coding for yeast respiratory chain components (14). Nuclear-encoded genes de-regulated ≥ 1.5-fold in Δ*reg1* and re-regulated by at least 50% by Ssb1 or Bmh1 overexpression are shown in blue. Nuclear-encoded genes re-regulated by Bmh1 only are shown in yellow. Mitochondrially encoded genes (gray) were not included in the microarray analysis. MOM: mitochondrial outer membrane; MIM: mitochondrial inner membrane. Original data are shown in Table S2.

SUPPLEMENTAL TABLES

Table S1. Strains and plasmids.

strains		plasmids		reference
MH272-3f a/α	(*ura3*/*ura3*, *leu2*/*leu2*, *his3*/*his3*, *trp1*/*trp1*, *ade2*/*ade2*)	-		(15)
MH272-3f α	*ura3 leu2 his3 trp1 ade2*			(15)
Δ*ssb1*Δ*ssb2*α	*ssb1*::*ADE2 ssb2*::*HIS3*	-		(16)
Δ*reg1*α	*reg1*::*LEU2*	-		(17)
		pYEplac195-SSB1	2μ, *URA3*, *SSB1* +/- 300	(17)
		pYEplac112-BMH1	2μ, *TRP1*, *BMH1* +/- 300	this study
Δ*snf1*α	*snf1*::*kanMX4*	-		(17)
		pYCplac33-SNF1	cen, *URA3*, *SNF1* +/- 300	(17)
		pYCplac33-SNF1-T210A	cen, *URA3*, *SNF1 T210A* +/- 300	(17)
		pYCplac33-SNF1-RSS	cen, *URA3*, *SNF1 S413A*, *R510A, S513A* +/- 300	this study
Δ*ssb1*Δ*ssb2*Δ*snf1*α	*ssb1*::*ADE2 ssb2*::*HIS3 snf1*::*kanMX4*	pYCplac22-FLAG-SNF1 + pYEplac195-SSB1-A577K	2μ, *URA3*, *SSB1A577K* +/-300 cen, *TRP1*, *FLAG-SNF1* +/-300	this study
		pYCplac33-FLAG-SNF1 + pYEplac112-HIS$_6$-SSB1-A577K	2μ, *TRP1*, *His$_6$-SSB1A577K* +/-300 cen, *URA3*, *FLAG-SNF1* +/-300	this study
Δ*glc7*α	*glc7*::*TRP1*	pYCplac111-GLC7	cen, *LEU2*, *GLC7* +/- 300	this study
		pYCplac111-GLC7 + pYEplac195-SSB1	cen, *LEU2*, *GLC7* +/- 300 2μ, *URA3*, *SSB1* +/- 300	this study
		pYCplac111-GLC7 + pYEplac195-BMH1	cen, *LEU2*, *GLC7* +/- 300 2μ, *URA3*, *BMH1* +/- 300	this study
		pYCplac111-GLC7-T152K	cen, *LEU2*, *GLC7 T152K* +/- 300	this study
		pYCplac111-GLC7-T152K + pYEplac195-SSB1	cen, *LEU2*, *GLC7T152K* +/- 300 2μ, *URA3*, *SSB1* +/- 300	this study
		pYCplac111-GLC7-T152K + pYEplac195-BMH1	cen, *LEU2*, *GLC7T152K* +/- 300 2μ, *URA3*, *BMH1* +/- 300	this study
Δ*bmh1*Δ*bmh2*α	*bmh1*::*kanMX4 bmh2*::*kanMX4*	pYCplac33-BMH1	cen, *URA3*, *BMH1*+/- 300	this study
Δ*bmh1*Δ*bmh2*Δ*ssb1*Δ*ssb2*α	*ssb1*::*ADE2 ssb2*::*ADE2* *bmh1*::*kanMX4 bmh2*::*kanMX4*	pTet111-BMH1 + pCM190 Myc-SSB1	cen, *LEU2*, *BMH1*; 2μ, *URA3*, *Myc-SSB1*	this study
		pTet111-His$_8$-BMH1 + pCM190 Myc-SSB1	cen, *LEU2*, *His$_8$-BMH1*; 2μ, *URA3*, *Myc-SSB1*	this study
		pTet111-His$_8$-BMH1 + pCM190 Myc-SSB1-Δ23	cen, *LEU2*, *His$_8$-BMH1*; 2μ, *URA3*, *Myc-SSB1-Δ23*	this study
		pTet111-His$_8$-BMH1 + pCM190 Myc-SSB1-Δ40	cen, *LEU2*, *His$_8$-BMH1*; 2μ, *URA3*, *Myc-SSB1-Δ40*	this study
Δ*sit4*α	*sit4*::*kanMX4*	-	-	this study
		pYEplac195-SSB1	2μ, *URA3*, *SSB1* +/- 300	this study
		pYEplac112-BMH1	2μ, *URA3*, *BMH1* +/- 300	this study
Δ*sit4*Δ*reg1*α	*reg1*::*LEU2 sit4*::*kanMX4*	pYEplac195-SSB1	2μ, *URA3*, *SSB1* +/- 300	this study
		pYEplac195-BMH1	2μ, *URA3*, *BMH1* +/- 300	this study

Table S2. Micro array data. **See Table S2.xls**

Table S3. TF analysis. **(A-D)** TF target enrichment in up- and down-regulated genes in Δ*ssb1*Δ*ssb2* and Δ*reg1*. Sample frequency is the number of TF targets in the respective data sets of up- or down-regulated genes in Δ*ssb1*Δ*ssb2* or Δ*reg1*; background frequency is the number of targets of the respective TF in the whole genome. Absolute and relative frequencies (in %) are given. p-values are right-sided p-values calculated with Fisher's exact test. TFs with highly significant p-values smaller than 10^{-9} were considered for further analysis. For comparison the Bonferroni-corrected α-level (α^{BON} = 0.05/n, n = number of tests) for each analysis is given. **(E)** Overlap of up-regulated genes in Δ*ssb1*Δ*ssb2* and Δ*reg1* and genes up-regulated in a continuously growing batch culture at different OD_{600}. Overlap frequency is the number of genes up-regulated in the batch culture which are also up-regulated in Δ*ssb1*Δ*ssb2* or Δ*reg1*; background frequency is the number of up-regulated genes in the batch culture with respect to the total number of genes. Absolute and relative frequencies (in %) are given. p-values are right-sided p-values calculated with Fisher's exact test. p-values smaller than a Bonferroni-corrected α of 0.0042 were considered significant.

(A) TF enrichment in up-regulated genes in Δ*ssb1*Δ*ssb2*

Transcription factor	Sample frequency	Background frequency	p-value
Sok2p	279/426 (65.49%)	2255/5820 (38.75%)	3.992447E-31
Rgm1p	90/426 (21.13%)	395/5820 (6.79%)	2.086345E-24
Sut1p	89/426 (20.89%)	417/5820 (7.16%)	5.326451E-22
Rlm1p	117/426 (27.46%)	711/5820 (12.22%)	4.474686E-19
Wtm2p	46/426 (10.8%)	168/5820 (2.89%)	7.224534E-16
Bas1p	275/426 (64.55%)	2755/5820 (47.34%)	8.631703E-14
Rpi1p	43/426 (10.09%)	173/5820 (2.97%)	2.811152E-13
Arg80p	70/426 (16.43%)	395/5820 (6.79%)	6.553325E-13
Pho2p	137/426 (32.16%)	1075/5820 (18.47%)	1.110849E-12
Hap4p	118/426 (27.7%)	881/5820 (15.14%)	2.828453E-12
YER184C	46/426 (10.8%)	210/5820 (3.61%)	5.255836E-12
Gis1p	65/426 (15.26%)	371/5820 (6.37%)	8.542574E-12

YER130C	40/426 (9.39%)	174/5820 (2.99%)	2.886058E-11
Adr1p	110/426 (25.82%)	827/5820 (14.21%)	3.317118E-11
Crz1p	77/426 (18.08%)	500/5820 (8.59%)	6.45219E-11
Flo8p	89/426 (20.89%)	618/5820 (10.62%)	6.496097E-11
Swi4p	131/426 (30.75%)	1067/5820 (18.33%)	7.275546E-11
Nrg2p	60/426 (14.08%)	346/5820 (5.95%)	9.443813E-11
Nrg1p	98/426 (23%)	720/5820 (12.37%)	1.520818E-10
Rpn4p	190/426 (44.6%)	1783/5820 (30.64%)	1.98059E-10
Gat4p	44/426 (10.33%)	218/5820 (3.75%)	2.769906E-10
Rsc1p	94/426 (22.07%)	687/5820 (11.8%)	3.035576E-10
Rds1p	49/426 (11.5%)	260/5820 (4.47%)	3.144958E-10
Hel2p	42/426 (9.86%)	203/5820 (3.49%)	3.227661E-10
Cup2p	83/426 (19.48%)	578/5820 (9.93%)	3.927403E-10
Hap1p	56/426 (13.15%)	328/5820 (5.64%)	7.9887E-10
Fhl1p	142/426 (33.33%)	1241/5820 (21.32%)	1.5227512E-9
Hot1p	23/426 (5.4%)	77/5820 (1.32%)	2.5557246E-9
Sko1p	113/426 (26.53%)	925/5820 (15.89%)	3.6258586E-9
Haa1p	89/426 (20.89%)	667/5820 (11.46%)	3.8332876E-9
Skn7p	112/426 (26.29%)	922/5820 (15.84%)	6.1390502E-9
YPR015C	30/426 (7.04%)	138/5820 (2.37%)	3.8128505E-8
Spt23p	185/426 (43.43%)	1827/5820 (31.39%)	3.8575915E-8
Mot3p	78/426 (18.31%)	586/5820 (10.07%)	4.9924813E-8
Yhp1p	140/426 (32.86%)	1287/5820 (22.11%)	6.9123431E-8
YPR022C	27/426 (6.34%)	121/5820 (2.08%)	1.0548014E-7
Mac1p	65/426 (15.26%)	465/5820 (7.99%)	1.2822461E-7
Rds2p	74/426 (17.37%)	561/5820 (9.64%)	1.7308492E-7
Kss1p	34/426 (7.98%)	186/5820 (3.2%)	4.130562E-7

Mig3p	168/426 (39.44%)	1669/5820 (28.68%)	4.5270421E-7
Yap6p	110/426 (25.82%)	975/5820 (16.75%)	5.3259679E-7
Gcn4p	267/426 (62.68%)	2994/5820 (51.44%)	8.1279311E-7
Mig1p	61/426 (14.32%)	449/5820 (7.71%)	9.1105817E-7
Hmo1p	112/426 (26.29%)	1010/5820 (17.35%)	9.9646793E-7
Stp4p	32/426 (7.51%)	176/5820 (3.02%)	1.0380864E-6
Cbf1p	154/426 (36.15%)	1523/5820 (26.17%)	1.5062338E-6
Ssn2p	46/426 (10.8%)	309/5820 (5.31%)	1.89341E-6
YPR196W	30/426 (7.04%)	167/5820 (2.87%)	2.9567802E-6
Ric1p	77/426 (18.08%)	648/5820 (11.13%)	6.4281115E-6
Gcr2p	133/426 (31.22%)	1308/5820 (22.47%)	9.1291091E-6
Mbf1p	32/426 (7.51%)	198/5820 (3.4%)	0.0000140203
Phd1p	86/426 (20.19%)	763/5820 (13.11%)	0.0000141607
Hap3p	43/426 (10.09%)	303/5820 (5.21%)	0.0000145633
Yox1p	141/426 (33.1%)	1428/5820 (24.54%)	0.0000217075
Ino2p	55/426 (12.91%)	431/5820 (7.41%)	0.0000223054
Hap5p	56/426 (13.15%)	447/5820 (7.68%)	0.0000320131
Zap1p	147/426 (34.51%)	1530/5820 (26.29%)	0.000059056
Oaf3p	52/426 (12.21%)	416/5820 (7.15%)	0.0000669405
Oaf1p	94/426 (22.07%)	891/5820 (15.31%)	0.0000769223
Arr1p	152/426 (35.68%)	1601/5820 (27.51%)	0.0000779499
Pdr1p	139/426 (32.63%)	1438/5820 (24.71%)	0.0000788786
Mga2p	112/426 (26.29%)	1107/5820 (19.02%)	0.0000812356
Msn2p	285/426 (66.9%)	3411/5820 (58.61%)	0.0001613866
Sip3p	14/426 (3.29%)	65/5820 (1.12%)	0.0001956323
Smk1p	20/426 (4.69%)	115/5820 (1.98%)	0.0002148201
Mcm1p	155/426 (36.39%)	1670/5820 (28.69%)	0.0002151391

Cin5p	194/426 (45.54%)	2180/5820 (37.46%)	0.0002382381
YLR278C	50/426 (11.74%)	425/5820 (7.3%)	0.000419677
Rme1p	49/426 (11.5%)	416/5820 (7.15%)	0.0004673478
Bye1p	23/426 (5.4%)	150/5820 (2.58%)	0.0005035076
Swi5p	174/426 (40.85%)	1944/5820 (33.4%)	0.0005070989
Sut2p	25/426 (5.87%)	174/5820 (2.99%)	0.000787648
Tbs1p	17/426 (3.99%)	102/5820 (1.75%)	0.0010418114
Sif2p	49/426 (11.5%)	432/5820 (7.42%)	0.0011007993
Mga1p	72/426 (16.9%)	703/5820 (12.08%)	0.0014696669
YGR067C	25/426 (5.87%)	183/5820 (3.14%)	0.0016432371
Rox1p	88/426 (20.66%)	900/5820 (15.46%)	0.0017811057
Gat3p	49/426 (11.5%)	446/5820 (7.66%)	0.0021873814
Yrm1p	219/426 (51.41%)	2605/5820 (44.76%)	0.0024843336
Rtg3p	68/426 (15.96%)	671/5820 (11.53%)	0.0026481118
YFL052W	14/426 (3.29%)	85/5820 (1.46%)	0.0031642272
Stb2p	28/426 (6.57%)	224/5820 (3.85%)	0.0033857338
Msn4p	215/426 (50.47%)	2565/5820 (44.07%)	0.0034256712
Opi1p	42/426 (9.86%)	379/5820 (6.51%)	0.0038559084
Vms1p	24/426 (5.63%)	185/5820 (3.18%)	0.0040271711
Cac2p	67/426 (15.73%)	672/5820 (11.55%)	0.0042552951
Stp2p	64/426 (15.02%)	643/5820 (11.05%)	0.0054281937
Mbp1p	68/426 (15.96%)	691/5820 (11.87%)	0.0054440034
Stp1p	70/426 (16.43%)	717/5820 (12.32%)	0.0058083445
Stb5p	106/426 (24.88%)	1162/5820 (19.97%)	0.005862477
Gzf3p	33/426 (7.75%)	288/5820 (4.95%)	0.0061057471
Cad1p	76/426 (17.84%)	794/5820 (13.64%)	0.0066470286
Abf1p	230/426 (53.99%)	2811/5820 (48.3%)	0.0083978077

Srb8p	57/426 (13.38%)	572/5820 (9.83%)	0.0084543192
Azf1p	24/426 (5.63%)	198/5820 (3.4%)	0.0093927392
Ssn3p	13/426 (3.05%)	87/5820 (1.49%)	0.0100649539
Rfx1p	67/426 (15.73%)	703/5820 (12.08%)	0.0119411172
Swi6p	71/426 (16.67%)	754/5820 (12.96%)	0.0127018251
Fkh1p	75/426 (17.61%)	807/5820 (13.87%)	0.0141366789
Spt2p	40/426 (9.39%)	386/5820 (6.63%)	0.0143744148
Gcr1p	139/426 (32.63%)	1630/5820 (28.01%)	0.0166774788
Tod6p	12/426 (2.82%)	84/5820 (1.44%)	0.0183993053
Msi1p	26/426 (6.1%)	236/5820 (4.06%)	0.0223976947
War1p	12/426 (2.82%)	87/5820 (1.49%)	0.0237106854
Pho4p	120/426 (28.17%)	1406/5820 (24.16%)	0.0269255153
Aft1p	118/426 (27.7%)	1385/5820 (23.8%)	0.0297597824
Rgt1p	47/426 (11.03%)	496/5820 (8.52%)	0.0364453695
Hsf1p	143/426 (33.57%)	1726/5820 (29.66%)	0.0385034302
Gsm1p	19/426 (4.46%)	169/5820 (2.9%)	0.0390807512
Urc2p	30/426 (7.04%)	302/5820 (5.19%)	0.0511699752
Hog1p	22/426 (5.16%)	211/5820 (3.63%)	0.0567856633
Rsc30p	12/426 (2.82%)	102/5820 (1.75%)	0.0678272602
Upc2p	30/426 (7.04%)	314/5820 (5.4%)	0.0770465994
Jhd1p	12/426 (2.82%)	105/5820 (1.8%)	0.0806781452
Asg1p	25/426 (5.87%)	256/5820 (4.4%)	0.0826002431
Hap2p	131/426 (30.75%)	1614/5820 (27.73%)	0.0832479101
Xbp1p	62/426 (14.55%)	716/5820 (12.3%)	0.0839157308
Hst3p	16/426 (3.76%)	151/5820 (2.59%)	0.0845192626
Sum1p	54/426 (12.68%)	615/5820 (10.57%)	0.0847375331
Ume6p	74/426 (17.37%)	872/5820 (14.98%)	0.0880126688

Kar4p	73/426 (17.14%)	860/5820 (14.78%)	0.0894938099
Arg82p	15/426 (3.52%)	142/5820 (2.44%)	0.0946409076
Hda1p	37/426 (8.69%)	407/5820 (6.99%)	0.0953562014
YNR063W	7/426 (1.64%)	54/5820 (0.93%)	0.0968103743
Gal3p	10/426 (2.35%)	88/5820 (1.51%)	0.107753877
Sfp1p	328/426 (77%)	4335/5820 (74.48%)	0.1189173417
Ask10p	15/426 (3.52%)	148/5820 (2.54%)	0.122794826
Hir3p	36/426 (8.45%)	405/5820 (6.96%)	0.1247576092
Reb1p	83/426 (19.48%)	1013/5820 (17.41%)	0.1343105478
Hpa2p	7/426 (1.64%)	59/5820 (1.01%)	0.1375423395
Snf1p	25/426 (5.87%)	272/5820 (4.67%)	0.1377399066
Met32p	47/426 (11.03%)	549/5820 (9.43%)	0.1390368096
Aft2p	42/426 (9.86%)	486/5820 (8.35%)	0.1410372857
Ure2p	1/426 (0.23%)	2/5820 (0.03%)	0.1410457743
Yap5p	72/426 (16.9%)	874/5820 (15.02%)	0.1447964813
Put3p	55/426 (12.91%)	658/5820 (11.31%)	0.1568771364
Tho2p	8/426 (1.88%)	73/5820 (1.25%)	0.1627151954
Uga3p	28/426 (6.57%)	317/5820 (5.45%)	0.1694269742
Met31p	35/426 (8.22%)	407/5820 (6.99%)	0.1753536873
Msn1p	25/426 (5.87%)	286/5820 (4.91%)	0.2004447367
Tos8p	34/426 (7.98%)	407/5820 (6.99%)	0.2286505221
Dal81p	31/426 (7.28%)	369/5820 (6.34%)	0.2316703102
Stb3p	4/426 (0.94%)	34/5820 (0.58%)	0.2352808164
Mss11p	49/426 (11.5%)	605/5820 (10.4%)	0.2404363741
Pog1p	9/426 (2.11%)	94/5820 (1.62%)	0.2485648537
Sas4p	12/426 (2.82%)	131/5820 (2.25%)	0.2496956411
Ace2p	355/426 (83.33%)	4775/5820 (82.04%)	0.2587095153

Zds1p	32/426 (7.51%)	388/5820 (6.67%)	0.2609063906
Hal9p	23/426 (5.4%)	272/5820 (4.67%)	0.2621551474
Elp6p	1/426 (0.23%)	4/5820 (0.07%)	0.2622377061
Ime1p	11/426 (2.58%)	122/5820 (2.1%)	0.2793248066
Rtg1p	23/426 (5.4%)	277/5820 (4.76%)	0.2919269543
Mot2p	11/426 (2.58%)	124/5820 (2.13%)	0.2974256117
Rap1p	225/426 (52.82%)	2997/5820 (51.49%)	0.3027858186
Tis11p	26/426 (6.1%)	319/5820 (5.48%)	0.3095879159
Yap1p	222/426 (52.11%)	2959/5820 (50.84%)	0.3105195124
Snf11p	15/426 (3.52%)	177/5820 (3.04%)	0.314354697
Mal33p	50/426 (11.74%)	639/5820 (10.98%)	0.3251172745
Mds3p	4/426 (0.94%)	40/5820 (0.69%)	0.3357510854
Ixr1p	131/426 (30.75%)	1732/5820 (29.76%)	0.3389910033
Ino4p	64/426 (15.02%)	832/5820 (14.3%)	0.3495817685
Bdf2p	31/426 (7.28%)	396/5820 (6.8%)	0.3726443421
Usv1p	11/426 (2.58%)	133/5820 (2.29%)	0.3819971853
Snf5p	103/426 (24.18%)	1373/5820 (23.59%)	0.4029650097
Swi3p	136/426 (31.92%)	1821/5820 (31.29%)	0.4031059926
Met28p	18/426 (4.23%)	229/5820 (3.93%)	0.4114852041
Rgt2p	1/426 (0.23%)	7/5820 (0.12%)	0.4127921582
Rtg2p	1/426 (0.23%)	7/5820 (0.12%)	0.4127921582
Rpd3p	8/426 (1.88%)	98/5820 (1.68%)	0.4281308799
Ada2p	11/426 (2.58%)	139/5820 (2.39%)	0.4396849216
Rph1p	35/426 (8.22%)	463/5820 (7.96%)	0.4461210553
Hcm1p	32/426 (7.51%)	424/5820 (7.29%)	0.4548563269
Dot6p	12/426 (2.82%)	159/5820 (2.73%)	0.500255755
Gat1p	16/426 (3.76%)	214/5820 (3.68%)	0.5033052089

Tda9p	16/426 (3.76%)	214/5820 (3.68%)	0.5033052089
Dal80p	15/426 (3.52%)	201/5820 (3.45%)	0.5086648515
Hat1p	4/426 (0.94%)	51/5820 (0.88%)	0.519123061
Fzf1p	15/426 (3.52%)	203/5820 (3.49%)	0.5247003792
Pdr3p	86/426 (20.19%)	1177/5820 (20.22%)	0.5283197705
Snt2p	10/426 (2.35%)	135/5820 (2.32%)	0.5326571097
Rtf1p	33/426 (7.75%)	453/5820 (7.78%)	0.5402809853
Eds1p	10/426 (2.35%)	136/5820 (2.34%)	0.542326989
Cat8p	16/426 (3.76%)	223/5820 (3.83%)	0.5722959715
Mig2p	22/426 (5.16%)	307/5820 (5.27%)	0.5757143842
Yap7p	48/426 (11.27%)	667/5820 (11.46%)	0.5761602743
Ngg1p	5/426 (1.17%)	69/5820 (1.19%)	0.5763393607
Pho23p	9/426 (2.11%)	126/5820 (2.16%)	0.5809762621
Tbf1p	36/426 (8.45%)	505/5820 (8.68%)	0.5955681228
Nut1p	19/426 (4.46%)	269/5820 (4.62%)	0.6010908719
Hms2p	8/426 (1.88%)	114/5820 (1.96%)	0.6025490994
Ert1p	14/426 (3.29%)	199/5820 (3.42%)	0.6029078855
Sip4p	17/426 (3.99%)	242/5820 (4.16%)	0.6085100707
Aca1p	20/426 (4.69%)	285/5820 (4.9%)	0.6140519694
Tec1p	277/426 (65.02%)	3818/5820 (65.6%)	0.624750126
Wtm1p	13/426 (3.05%)	188/5820 (3.23%)	0.6273905121
Leu3p	47/426 (11.03%)	665/5820 (11.43%)	0.6287740153
Nsi1p	6/426 (1.41%)	88/5820 (1.51%)	0.632057141
Hir2p	21/426 (4.93%)	303/5820 (5.21%)	0.6387008725
Stb6p	6/426 (1.41%)	89/5820 (1.53%)	0.6430951237
Ste12p	279/426 (65.49%)	3852/5820 (66.19%)	0.6447769285
Pdr8p	4/426 (0.94%)	60/5820 (1.03%)	0.6496134519

YKL222C	4/426 (0.94%)	60/5820 (1.03%)	0.6496134519
Stb1p	26/426 (6.1%)	376/5820 (6.46%)	0.6526375
Hir1p	22/426 (5.16%)	320/5820 (5.5%)	0.6558184436
Ppr1p	13/426 (3.05%)	192/5820 (3.3%)	0.6578344257
Cse2p	54/426 (12.68%)	776/5820 (13.33%)	0.6831852172
Aro80p	29/426 (6.81%)	428/5820 (7.35%)	0.701414903
Isw1p	29/426 (6.81%)	428/5820 (7.35%)	0.701414903
Met18p	16/426 (3.76%)	242/5820 (4.16%)	0.703589398
Srb5p	3/426 (0.7%)	49/5820 (0.84%)	0.7067663359
Hat2p	33/426 (7.75%)	487/5820 (8.37%)	0.7112735817
Yrr1p	49/426 (11.5%)	718/5820 (12.34%)	0.7291581592
Sas5p	21/426 (4.93%)	321/5820 (5.52%)	0.7403623636
Ecm22p	35/426 (8.22%)	526/5820 (9.04%)	0.7554694262
Gal80p	5/426 (1.17%)	85/5820 (1.46%)	0.755963436
Rim101p	52/426 (12.21%)	771/5820 (13.25%)	0.7658426736
Pip2p	90/426 (21.13%)	1306/5820 (22.44%)	0.7675244722
Pop2p	11/426 (2.58%)	179/5820 (3.08%)	0.7709067611
Not3p	15/426 (3.52%)	239/5820 (4.11%)	0.7719239243
Rif2p	4/426 (0.94%)	73/5820 (1.25%)	0.7924211197
Hms1p	67/426 (15.73%)	993/5820 (17.06%)	0.7948380533
Esc2p	43/426 (10.09%)	652/5820 (11.2%)	0.7962298431
Srd1p	3/426 (0.7%)	57/5820 (0.98%)	0.7984386197
Dot5p	6/426 (1.41%)	106/5820 (1.82%)	0.7985889292
Dal82p	54/426 (12.68%)	812/5820 (13.95%)	0.8046421758
Fkh2p	46/426 (10.8%)	698/5820 (11.99%)	0.8056534611
Sfl1p	8/426 (1.88%)	140/5820 (2.41%)	0.8147404527
Caf4p	11/426 (2.58%)	189/5820 (3.25%)	0.8274488411

Nnf2p	18/426 (4.23%)	298/5820 (5.12%)	0.8376637848
Smp1p	17/426 (3.99%)	284/5820 (4.88%)	0.8420697197
Rsc2p	48/426 (11.27%)	741/5820 (12.73%)	0.8457358245
Mth1p	21/426 (4.93%)	346/5820 (5.95%)	0.8484364762
Set2p	20/426 (4.69%)	331/5820 (5.69%)	0.8485352743
Spt3p	82/426 (19.25%)	1230/5820 (21.13%)	0.85380839
Ash1p	223/426 (52.35%)	3188/5820 (54.78%)	0.8636180769
Rco1p	28/426 (6.57%)	469/5820 (8.06%)	0.8993684544
Cst6p	185/426 (43.43%)	2695/5820 (46.31%)	0.9013017238
Rsf2p	25/426 (5.87%)	433/5820 (7.44%)	0.9198697368
Hfi1p	94/426 (22.07%)	1444/5820 (24.81%)	0.9236656054
Cha4p	11/426 (2.58%)	217/5820 (3.73%)	0.930047113
Rdr1p	12/426 (2.82%)	234/5820 (4.02%)	0.9314904026
Dat1p	12/426 (2.82%)	235/5820 (4.04%)	0.9337797401
Cdc73p	48/426 (11.27%)	789/5820 (13.56%)	0.9368418681
Sds3p	37/426 (8.69%)	625/5820 (10.74%)	0.936888881
YJL206C	8/426 (1.88%)	172/5820 (2.96%)	0.9428943419
Hst1p	11/426 (2.58%)	228/5820 (3.92%)	0.9528507734
Spt20p	126/426 (29.58%)	1937/5820 (33.28%)	0.9599414273
Yap3p	17/426 (3.99%)	333/5820 (5.72%)	0.9616032761
Thi2p	47/426 (11.03%)	798/5820 (13.71%)	0.962238955
Sir3p	51/426 (11.97%)	863/5820 (14.83%)	0.9663208213
Plm2p	8/426 (1.88%)	185/5820 (3.18%)	0.9666862042
Mal13p	2/426 (0.47%)	69/5820 (1.19%)	0.9667027721
Rif1p	18/426 (4.23%)	358/5820 (6.15%)	0.9710824891
Gal11p	49/426 (11.5%)	841/5820 (14.45%)	0.9719195424
Dig1p	19/426 (4.46%)	376/5820 (6.46%)	0.9726306508

Hst4p	5/426 (1.17%)	134/5820 (2.3%)	0.9726454092
Rtt107p	27/426 (6.34%)	508/5820 (8.73%)	0.9755648605
Sin3p	113/426 (26.53%)	1782/5820 (30.62%)	0.9759869086
Sin4p	144/426 (33.8%)	2232/5820 (38.35%)	0.9807480979
Pib2p	18/426 (4.23%)	371/5820 (6.37%)	0.9813186112
Hac1p	28/426 (6.57%)	535/5820 (9.19%)	0.9823840334
Uls1p	38/426 (8.92%)	700/5820 (12.03%)	0.9858658074
Stb4p	2/426 (0.47%)	85/5820 (1.46%)	0.9883617965
Sas3p	69/426 (16.2%)	1183/5820 (20.33%)	0.989593299
Snf2p	130/426 (30.52%)	2081/5820 (35.76%)	0.99222252
Gal4p	70/426 (16.43%)	1213/5820 (20.84%)	0.9927463758
Arg81p	15/426 (3.52%)	349/5820 (6%)	0.993671885
Taf14p	49/426 (11.5%)	909/5820 (15.62%)	0.9950994704
Pgd1p	20/426 (4.69%)	444/5820 (7.63%)	0.9954625847
Sir1p	12/426 (2.82%)	307/5820 (5.27%)	0.9961356709
Rlf2p	44/426 (10.33%)	840/5820 (14.43%)	0.9962216434
Otu1p	13/426 (3.05%)	328/5820 (5.64%)	0.9965728194
Gts1p	22/426 (5.16%)	504/5820 (8.66%)	0.9982975536
Sef1p	8/426 (1.88%)	252/5820 (4.33%)	0.9986351407
Tye7p	67/426 (15.73%)	1237/5820 (21.25%)	0.9988493922
Cup9p	57/426 (13.38%)	1085/5820 (18.64%)	0.9989175848
Ndt80p	25/426 (5.87%)	568/5820 (9.76%)	0.9989489823
Gln3p	63/426 (14.79%)	1180/5820 (20.27%)	0.9989860613
Tos4p	5/426 (1.17%)	202/5820 (3.47%)	0.9993692655
Ifh1p	20/426 (4.69%)	498/5820 (8.56%)	0.999477691
Sir2p	82/426 (19.25%)	1493/5820 (25.65%)	0.9994947516
Sps18p	9/426 (2.11%)	303/5820 (5.21%)	0.9997283558

Met4p	83/426 (19.48%)	1548/5820 (26.6%)	0.9998471164
Spt4p	75/426 (17.61%)	1428/5820 (24.54%)	0.9998557229
Srb2p	35/426 (8.22%)	808/5820 (13.88%)	0.9999305459
Isw2p	58/426 (13.62%)	1204/5820 (20.69%)	0.9999649037
Snf6p	149/426 (34.98%)	2640/5820 (45.36%)	0.9999974977
Tup1p	150/426 (35.21%)	2660/5820 (45.7%)	0.9999979633
Spt10p	90/426 (21.13%)	1793/5820 (30.81%)	0.9999986737

$\alpha^{BON} = 1.73x10^{-4}$

(B) TF enrichment in up-regulated genes in Δ*reg1*

Transcription factor	**Sample frequency**	**Background frequency**	**p-value**
Sok2p	377/545 (69.17%)	2255/5820 (38.75%)	1.258545E-51
Bas1p	417/545 (76.51%)	2755/5820 (47.34%)	3.088777E-48
Gis1p	124/545 (22.75%)	371/5820 (6.37%)	2.453851E-41
Sut1p	126/545 (23.12%)	417/5820 (7.16%)	8.501252E-37
Adr1p	171/545 (31.38%)	827/5820 (14.21%)	1.390543E-27
Gat4p	71/545 (13.03%)	218/5820 (3.75%)	1.320528E-22
Mig1p	108/545 (19.82%)	449/5820 (7.71%)	4.048102E-22
Rlm1p	143/545 (26.24%)	711/5820 (12.22%)	2.499628E-21
Hap4p	162/545 (29.72%)	881/5820 (15.14%)	4.218436E-20
Aft1p	220/545 (40.37%)	1385/5820 (23.8%)	1.099161E-19
Mig2p	80/545 (14.68%)	307/5820 (5.27%)	1.347455E-18
Msn4p	335/545 (61.47%)	2565/5820 (44.07%)	7.999823E-18
Msn2p	408/545 (74.86%)	3411/5820 (58.61%)	6.901548E-17
Gcn4p	366/545 (67.16%)	2994/5820 (51.44%)	4.833578E-15
Zap1p	221/545 (40.55%)	1530/5820 (26.29%)	1.631607E-14
Nrg2p	77/545 (14.13%)	346/5820 (5.95%)	8.499399E-14
Pho2p	167/545 (30.64%)	1075/5820 (18.47%)	3.006441E-13
Nrg1p	125/545 (22.94%)	720/5820 (12.37%)	3.254861E-13

Cin5p	282/545 (51.74%)	2180/5820 (37.46%)	7.133909E-13
Swi5p	257/545 (47.16%)	1944/5820 (33.4%)	1.890902E-12
Gcr2p	188/545 (34.5%)	1308/5820 (22.47%)	1.008422E-11
Hsf1p	232/545 (42.57%)	1726/5820 (29.66%)	1.132384E-11
Mig3p	226/545 (41.47%)	1669/5820 (28.68%)	1.213543E-11
Rgm1p	78/545 (14.31%)	395/5820 (6.79%)	3.977915E-11
Hap1p	68/545 (12.48%)	328/5820 (5.64%)	8.927637E-11
Rme1p	79/545 (14.5%)	416/5820 (7.15%)	2.20734E-10
Sfp1p	463/545 (84.95%)	4335/5820 (74.48%)	4.40641E-10
YPR015C	38/545 (6.97%)	138/5820 (2.37%)	4.453082E-10
Cat8p	51/545 (9.36%)	223/5820 (3.83%)	6.944429E-10
Mot3p	99/545 (18.17%)	586/5820 (10.07%)	8.678496E-10
Oaf1p	135/545 (24.77%)	891/5820 (15.31%)	8.958176E-10
Rds2p	92/545 (16.88%)	561/5820 (9.64%)	1.8315563E-8
Rpn4p	225/545 (41.28%)	1783/5820 (30.64%)	2.0164354E-8
Xbp1p	110/545 (20.18%)	716/5820 (12.3%)	2.4365651E-8
Hap3p	58/545 (10.64%)	303/5820 (5.21%)	5.3596402E-8
Rgt2p	7/545 (1.28%)	7/5820 (0.12%)	6.0965065E-8
Skn7p	132/545 (24.22%)	922/5820 (15.84%)	6.1321048E-8
Hap5p	75/545 (13.76%)	447/5820 (7.68%)	1.8237249E-7
Oaf3p	69/545 (12.66%)	416/5820 (7.15%)	9.3800047E-7
Cad1p	113/545 (20.73%)	794/5820 (13.64%)	1.0232711E-6
Hot1p	22/545 (4.04%)	77/5820 (1.32%)	1.142627E-6
Fhl1p	160/545 (29.36%)	1241/5820 (21.32%)	2.1098271E-6
Sko1p	126/545 (23.12%)	925/5820 (15.89%)	2.33942E-6
Ric1p	95/545 (17.43%)	648/5820 (11.13%)	2.4792813E-6
Ume6p	120/545 (22.02%)	872/5820 (14.98%)	2.6044797E-6
Flo8p	91/545 (16.7%)	618/5820 (10.62%)	3.4934756E-6
Rox1p	121/545 (22.2%)	900/5820 (15.46%)	7.8037583E-6
Arr1p	194/545 (35.6%)	1601/5820 (27.51%)	8.7244081E-6
Yrm1p	292/545 (53.58%)	2605/5820 (44.76%)	8.9067466E-6

Opi1p	61/545 (11.19%)	379/5820 (6.51%)	0.0000115208
Pdr1p	175/545 (32.11%)	1438/5820 (24.71%)	0.000024936
Yox1p	170/545 (31.19%)	1428/5820 (24.54%)	0.0001264007
Rtg1p	45/545 (8.26%)	277/5820 (4.76%)	0.0001379531
Cup2p	80/545 (14.68%)	578/5820 (9.93%)	0.0001395699
Gcr1p	189/545 (34.68%)	1630/5820 (28.01%)	0.0002067642
Yhp1p	154/545 (28.26%)	1287/5820 (22.11%)	0.000240333
Spt23p	208/545 (38.17%)	1827/5820 (31.39%)	0.0002490707
Cac2p	89/545 (16.33%)	672/5820 (11.55%)	0.0002780733
Mga2p	134/545 (24.59%)	1107/5820 (19.02%)	0.0004332702
Yap6p	120/545 (22.02%)	975/5820 (16.75%)	0.0004871787
Sut2p	30/545 (5.5%)	174/5820 (2.99%)	0.0006644572
Rtg3p	87/545 (15.96%)	671/5820 (11.53%)	0.0006697977
Azf1p	33/545 (6.06%)	198/5820 (3.4%)	0.0006779159
Crz1p	68/545 (12.48%)	500/5820 (8.59%)	0.0007637184
Met32p	73/545 (13.39%)	549/5820 (9.43%)	0.0009341692
Aft2p	66/545 (12.11%)	486/5820 (8.35%)	0.0009532462
Hda1p	57/545 (10.46%)	407/5820 (6.99%)	0.001025266
Snf1p	41/545 (7.52%)	272/5820 (4.67%)	0.0013014077
Stp2p	82/545 (15.05%)	643/5820 (11.05%)	0.0016053517
Gzf3p	42/545 (7.71%)	288/5820 (4.95%)	0.0021901968
Rgt1p	65/545 (11.93%)	496/5820 (8.52%)	0.0025995804
Hmo1p	119/545 (21.83%)	1010/5820 (17.35%)	0.0027525649
Arg82p	24/545 (4.4%)	142/5820 (2.44%)	0.0029394906
Hir3p	54/545 (9.91%)	405/5820 (6.96%)	0.0041483603
Rsc30p	18/545 (3.3%)	102/5820 (1.75%)	0.0059525183
Mga1p	85/545 (15.6%)	703/5820 (12.08%)	0.0060859842
Ssn3p	16/545 (2.94%)	87/5820 (1.49%)	0.0061696882
Rph1p	59/545 (10.83%)	463/5820 (7.96%)	0.0075270931
Mac1p	59/545 (10.83%)	465/5820 (7.99%)	0.0082412261
Rfx1p	84/545 (15.41%)	703/5820 (12.08%)	0.0087178264

Cyc8p	2/545 (0.37%)	2/5820 (0.03%)	0.0087543531
Gat3p	56/545 (10.28%)	446/5820 (7.66%)	0.0122381563
Wtm2p	25/545 (4.59%)	168/5820 (2.89%)	0.0127952468
Sin3p	190/545 (34.86%)	1782/5820 (30.62%)	0.0142316082
Ste12p	384/545 (70.46%)	3852/5820 (66.19%)	0.0144674726
Eds1p	21/545 (3.85%)	136/5820 (2.34%)	0.0145353902
Sip3p	12/545 (2.2%)	65/5820 (1.12%)	0.0160910073
Ace2p	465/545 (85.32%)	4775/5820 (82.04%)	0.0192272955
Yap5p	99/545 (18.17%)	874/5820 (15.02%)	0.0196468802
YER184C	29/545 (5.32%)	210/5820 (3.61%)	0.0205084819
Arg80p	49/545 (8.99%)	395/5820 (6.79%)	0.0227267269
Hel2p	28/545 (5.14%)	203/5820 (3.49%)	0.0228792158
Tbs1p	16/545 (2.94%)	102/5820 (1.75%)	0.0267233573
Mbp1p	79/545 (14.5%)	691/5820 (11.87%)	0.0297885956
Ecm22p	62/545 (11.38%)	526/5820 (9.04%)	0.0300649371
Ino2p	52/545 (9.54%)	431/5820 (7.41%)	0.0308895228
Swi4p	116/545 (21.28%)	1067/5820 (18.33%)	0.0366390669
Yap1p	297/545 (54.5%)	2959/5820 (50.84%)	0.0402394149
Ixr1p	180/545 (33.03%)	1732/5820 (29.76%)	0.0451276454
Ngg1p	11/545 (2.02%)	69/5820 (1.19%)	0.0542441019
Phd1p	84/545 (15.41%)	763/5820 (13.11%)	0.0562208914
Upc2p	38/545 (6.97%)	314/5820 (5.4%)	0.0571466088
Rsc1p	76/545 (13.95%)	687/5820 (11.8%)	0.0619450282
Hst4p	18/545 (3.3%)	134/5820 (2.3%)	0.0737731098
Swi3p	186/545 (34.13%)	1821/5820 (31.29%)	0.0737788639
Asg1p	31/545 (5.69%)	256/5820 (4.4%)	0.0795512262
Srb5p	8/545 (1.47%)	49/5820 (0.84%)	0.0828683879
Dal80p	25/545 (4.59%)	201/5820 (3.45%)	0.084647786
Cst6p	268/545 (49.17%)	2695/5820 (46.31%)	0.0861426176
Tod6p	12/545 (2.2%)	84/5820 (1.44%)	0.0903508848
Stb3p	6/545 (1.1%)	34/5820 (0.58%)	0.0927120481

Rds1p	31/545 (5.69%)	260/5820 (4.47%)	0.0930651023
Snf7p	1/545 (0.18%)	1/5820 (0.02%)	0.0936426117
Stb5p	121/545 (22.2%)	1162/5820 (19.97%)	0.0952178383
Ask10p	19/545 (3.49%)	148/5820 (2.54%)	0.0960576255
YFL052W	12/545 (2.2%)	85/5820 (1.46%)	0.0967603088
Fkh1p	86/545 (15.78%)	807/5820 (13.87%)	0.0993778316
Sfl1p	18/545 (3.3%)	140/5820 (2.41%)	0.1021007289
Pdr3p	122/545 (22.39%)	1177/5820 (20.22%)	0.1040382308
Wtm1p	23/545 (4.22%)	188/5820 (3.23%)	0.1090438631
Ert1p	24/545 (4.4%)	199/5820 (3.42%)	0.1163291527
Smk1p	15/545 (2.75%)	115/5820 (1.98%)	0.1165445333
Gal3p	12/545 (2.2%)	88/5820 (1.51%)	0.117595536
Snt2p	17/545 (3.12%)	135/5820 (2.32%)	0.1262328747
Pho4p	143/545 (26.24%)	1406/5820 (24.16%)	0.1277097607
Rpi1p	21/545 (3.85%)	173/5820 (2.97%)	0.1288200208
Put3p	70/545 (12.84%)	658/5820 (11.31%)	0.1320244847
YER130C	21/545 (3.85%)	174/5820 (2.99%)	0.1343771942
Ino4p	87/545 (15.96%)	832/5820 (14.3%)	0.1352814304
Tda9p	25/545 (4.59%)	214/5820 (3.68%)	0.1436550069
YPR196W	20/545 (3.67%)	167/5820 (2.87%)	0.1491780641
Dot6p	19/545 (3.49%)	159/5820 (2.73%)	0.1589753101
Mds3p	6/545 (1.1%)	40/5820 (0.69%)	0.166554957
Not3p	27/545 (4.95%)	239/5820 (4.11%)	0.1740009249
Swi6p	78/545 (14.31%)	754/5820 (12.96%)	0.1772822616
Abf1p	274/545 (50.28%)	2811/5820 (48.3%)	0.1775335231
Ure2p	1/545 (0.18%)	2/5820 (0.03%)	0.1785308703
Ssn2p	34/545 (6.24%)	309/5820 (5.31%)	0.1786750101
Cbf1p	152/545 (27.89%)	1523/5820 (26.17%)	0.1813090556
Hog1p	24/545 (4.4%)	211/5820 (3.63%)	0.1821703499
Hpa2p	8/545 (1.47%)	59/5820 (1.01%)	0.1832981077
Pdr8p	8/545 (1.47%)	60/5820 (1.03%)	0.1954570115

Tec1p	367/545 (67.34%)	3818/5820 (65.6%)	0.1980220733
Stp4p	20/545 (3.67%)	176/5820 (3.02%)	0.2100989369
YPR022C	14/545 (2.57%)	121/5820 (2.08%)	0.2400668128
Set2p	35/545 (6.42%)	331/5820 (5.69%)	0.2440531932
Sip4p	26/545 (4.77%)	242/5820 (4.16%)	0.2558228683
Kar4p	86/545 (15.78%)	860/5820 (14.78%)	0.2620426433
YGR067C	20/545 (3.67%)	183/5820 (3.14%)	0.2643875896
Stb1p	39/545 (7.16%)	376/5820 (6.46%)	0.268971335
Sum1p	62/545 (11.38%)	615/5820 (10.57%)	0.2800527177
Vms1p	20/545 (3.67%)	185/5820 (3.18%)	0.2808243329
War1p	10/545 (1.83%)	87/5820 (1.49%)	0.2952924959
Snf11p	19/545 (3.49%)	177/5820 (3.04%)	0.2983574042
Stb6p	10/545 (1.83%)	89/5820 (1.53%)	0.3204050764
Elp6p	1/545 (0.18%)	4/5820 (0.07%)	0.3252364106
Dal81p	37/545 (6.79%)	369/5820 (6.34%)	0.3526504768
Usv1p	14/545 (2.57%)	133/5820 (2.29%)	0.3632858884
Mot2p	13/545 (2.39%)	124/5820 (2.13%)	0.3767750015
Nut1p	27/545 (4.95%)	269/5820 (4.62%)	0.3802212015
Imp2'p	1/545 (0.18%)	5/5820 (0.09%)	0.3884664925
Gsm1p	17/545 (3.12%)	169/5820 (2.9%)	0.4153676936
Sif2p	42/545 (7.71%)	432/5820 (7.42%)	0.4212430039
Rsf2p	42/545 (7.71%)	433/5820 (7.44%)	0.4275719808
Bye1p	15/545 (2.75%)	150/5820 (2.58%)	0.4345685729
Ppr1p	19/545 (3.49%)	192/5820 (3.3%)	0.4354549547
Yap7p	64/545 (11.74%)	667/5820 (11.46%)	0.4359079353
Dat1p	23/545 (4.22%)	235/5820 (4.04%)	0.4439191558
Gat1p	21/545 (3.85%)	214/5820 (3.68%)	0.4444191652
Msi1p	23/545 (4.22%)	236/5820 (4.06%)	0.4524267142
Met31p	39/545 (7.16%)	407/5820 (6.99%)	0.4646046724
Taf14p	86/545 (15.78%)	909/5820 (15.62%)	0.4766831649
Rim101p	73/545 (13.39%)	771/5820 (13.25%)	0.4787755919

Pip2p	123/545 (22.57%)	1306/5820 (22.44%)	0.488065114
Mbf1p	19/545 (3.49%)	198/5820 (3.4%)	0.4914912295
Haa1p	63/545 (11.56%)	667/5820 (11.46%)	0.4918299406
YKL222C	6/545 (1.1%)	60/5820 (1.03%)	0.4969143828
Rtg2p	1/545 (0.18%)	7/5820 (0.12%)	0.4977333696
Srb2p	76/545 (13.95%)	808/5820 (13.88%)	0.5033840156
Hms2p	11/545 (2.02%)	114/5820 (1.96%)	0.5056316032
Hms1p	93/545 (17.06%)	993/5820 (17.06%)	0.5189795274
Hir1p	30/545 (5.5%)	320/5820 (5.5%)	0.5271565158
Tho2p	7/545 (1.28%)	73/5820 (1.25%)	0.5325989039
Stb2p	21/545 (3.85%)	224/5820 (3.85%)	0.5327189823
Mcm1p	156/545 (28.62%)	1670/5820 (28.69%)	0.5327283142
Rsc2p	69/545 (12.66%)	741/5820 (12.73%)	0.5424141716
Sua7p	1/545 (0.18%)	8/5820 (0.14%)	0.5448235663
Met28p	21/545 (3.85%)	229/5820 (3.93%)	0.5755629326
YNR063W	5/545 (0.92%)	54/5820 (0.93%)	0.579275115
Kss1p	17/545 (3.12%)	186/5820 (3.2%)	0.5806127472
Tbf1p	46/545 (8.44%)	505/5820 (8.68%)	0.6061917884
Fzf1p	18/545 (3.3%)	203/5820 (3.49%)	0.6341473786
Mal13p	6/545 (1.1%)	69/5820 (1.19%)	0.6371639366
Hcm1p	38/545 (6.97%)	424/5820 (7.29%)	0.642169198
Leu3p	60/545 (11.01%)	665/5820 (11.43%)	0.6478163422
Hac1p	48/545 (8.81%)	535/5820 (9.19%)	0.6517729859
Cha4p	19/545 (3.49%)	217/5820 (3.73%)	0.6581886242
Jhd1p	9/545 (1.65%)	105/5820 (1.8%)	0.6604805203
Smp1p	25/545 (4.59%)	284/5820 (4.88%)	0.6614211347
Hst3p	13/545 (2.39%)	151/5820 (2.59%)	0.6681236351
Srb8p	51/545 (9.36%)	572/5820 (9.83%)	0.6736147296
Sas5p	28/545 (5.14%)	321/5820 (5.52%)	0.6866442815
Sas4p	11/545 (2.02%)	131/5820 (2.25%)	0.6939412843
Snf5p	124/545 (22.75%)	1373/5820 (23.59%)	0.7026256451

Pdc2p	2/545 (0.37%)	26/5820 (0.45%)	0.7146597611
Hat1p	4/545 (0.73%)	51/5820 (0.88%)	0.7166037938
Dal82p	72/545 (13.21%)	812/5820 (13.95%)	0.719337451
Yrr1p	63/545 (11.56%)	718/5820 (12.34%)	0.7388110057
Spt2p	33/545 (6.06%)	386/5820 (6.63%)	0.7412017897
Hat2p	42/545 (7.71%)	487/5820 (8.37%)	0.7442619233
Msn1p	24/545 (4.4%)	286/5820 (4.91%)	0.7483583745
Pho23p	10/545 (1.83%)	126/5820 (2.16%)	0.7550400083
Plm2p	15/545 (2.75%)	185/5820 (3.18%)	0.7607023417
Ada2p	11/545 (2.02%)	139/5820 (2.39%)	0.7655139843
Mal33p	55/545 (10.09%)	639/5820 (10.98%)	0.7769495245
Gln3p	104/545 (19.08%)	1180/5820 (20.27%)	0.782209928
Rap1p	272/545 (49.91%)	2997/5820 (51.49%)	0.7949049532
Hal9p	22/545 (4.04%)	272/5820 (4.67%)	0.7993429925
Pop2p	14/545 (2.57%)	179/5820 (3.08%)	0.7999073029
Aca1p	23/545 (4.22%)	285/5820 (4.9%)	0.8071641532
Stp1p	61/545 (11.19%)	717/5820 (12.32%)	0.8177890216
YLR278C	35/545 (6.42%)	425/5820 (7.3%)	0.8194688482
Ime1p	9/545 (1.65%)	122/5820 (2.1%)	0.8194795966
Gal80p	6/545 (1.1%)	85/5820 (1.46%)	0.8204196153
Nsi1p	6/545 (1.1%)	88/5820 (1.51%)	0.8449487822
Mss11p	50/545 (9.17%)	605/5820 (10.4%)	0.8547251329
Rco1p	38/545 (6.97%)	469/5820 (8.06%)	0.8563434714
Ash1p	287/545 (52.66%)	3188/5820 (54.78%)	0.8616088458
Aro80p	34/545 (6.24%)	428/5820 (7.35%)	0.8730445457
Arg81p	27/545 (4.95%)	349/5820 (6%)	0.8812986715
Reb1p	85/545 (15.6%)	1013/5820 (17.41%)	0.89163169
Cdc73p	65/545 (11.93%)	789/5820 (13.56%)	0.8926758139
Zds1p	30/545 (5.5%)	388/5820 (6.67%)	0.8935137936
Ifh1p	39/545 (7.16%)	498/5820 (8.56%)	0.9070792575
Rpd3p	6/545 (1.1%)	98/5820 (1.68%)	0.9077158118

Hfi1p	123/545 (22.57%)	1444/5820 (24.81%)	0.9083766754
Stb4p	5/545 (0.92%)	85/5820 (1.46%)	0.9106687418
Rtf1p	35/545 (6.42%)	453/5820 (7.78%)	0.9110136242
Caf4p	13/545 (2.39%)	189/5820 (3.25%)	0.9113675753
Pib2p	28/545 (5.14%)	371/5820 (6.37%)	0.9120338768
Srd1p	3/545 (0.55%)	57/5820 (0.98%)	0.9129708352
Tos8p	31/545 (5.69%)	407/5820 (6.99%)	0.9134151018
Rif2p	4/545 (0.73%)	73/5820 (1.25%)	0.9209812819
Hir2p	22/545 (4.04%)	303/5820 (5.21%)	0.9221106965
Met18p	17/545 (3.12%)	242/5820 (4.16%)	0.9222134307
Sds3p	49/545 (8.99%)	625/5820 (10.74%)	0.9300969655
Sef1p	17/545 (3.12%)	252/5820 (4.33%)	0.9471068435
Pog1p	5/545 (0.92%)	94/5820 (1.62%)	0.9478186248
Hst1p	15/545 (2.75%)	228/5820 (3.92%)	0.9497738773
Tis11p	22/545 (4.04%)	319/5820 (5.48%)	0.9558147347
Yap3p	23/545 (4.22%)	333/5820 (5.72%)	0.9583920561
Rdr1p	15/545 (2.75%)	234/5820 (4.02%)	0.9611072041
Dot5p	5/545 (0.92%)	106/5820 (1.82%)	0.9756382986
Rtt107p	36/545 (6.61%)	508/5820 (8.73%)	0.9761305185
Dig1p	25/545 (4.59%)	376/5820 (6.46%)	0.9789773412
Urc2p	19/545 (3.49%)	302/5820 (5.19%)	0.9808683264
Sps18p	19/545 (3.49%)	303/5820 (5.21%)	0.9816774484
Rts2p	1/545 (0.18%)	41/5820 (0.7%)	0.9825045259
Rlf2p	63/545 (11.56%)	840/5820 (14.43%)	0.9827558695
Pgd1p	30/545 (5.5%)	444/5820 (7.63%)	0.9829969703
YJL206C	9/545 (1.65%)	172/5820 (2.96%)	0.9845928719
Thi2p	59/545 (10.83%)	798/5820 (13.71%)	0.9851243285
Spt3p	96/545 (17.61%)	1230/5820 (21.13%)	0.9862435009
Uls1p	50/545 (9.17%)	700/5820 (12.03%)	0.9888116307
Cse2p	56/545 (10.28%)	776/5820 (13.33%)	0.9902127727
Bdf2p	25/545 (4.59%)	396/5820 (6.8%)	0.9906253156

Rif1p	22/545 (4.04%)	358/5820 (6.15%)	0.9909177624
Tye7p	95/545 (17.43%)	1237/5820 (21.25%)	0.9915617097
Sir1p	18/545 (3.3%)	307/5820 (5.27%)	0.9915654257
Fkh2p	49/545 (8.99%)	698/5820 (11.99%)	0.9919879886
Sir3p	62/545 (11.38%)	863/5820 (14.83%)	0.9940249653
Sin4p	181/545 (33.21%)	2232/5820 (38.35%)	0.9960710636
Esc2p	43/545 (7.89%)	652/5820 (11.2%)	0.9970476705
Uga3p	17/545 (3.12%)	317/5820 (5.45%)	0.9973910069
Mth1p	19/545 (3.49%)	346/5820 (5.95%)	0.9975829184
Hap2p	124/545 (22.75%)	1614/5820 (27.73%)	0.9976253497
Isw1p	25/545 (4.59%)	428/5820 (7.35%)	0.9977341782
Otu1p	17/545 (3.12%)	328/5820 (5.64%)	0.9985447022
Isw2p	86/545 (15.78%)	1204/5820 (20.69%)	0.9990607163
Gts1p	29/545 (5.32%)	504/5820 (8.66%)	0.9992317119
Nnf2p	14/545 (2.57%)	298/5820 (5.12%)	0.9993030886
Gal11p	55/545 (10.09%)	841/5820 (14.45%)	0.9993795395
Cup9p	74/545 (13.58%)	1085/5820 (18.64%)	0.9996042028
Spt10p	134/545 (24.59%)	1793/5820 (30.81%)	0.9996777665
Tos4p	7/545 (1.28%)	202/5820 (3.47%)	0.9997077574
Ndt80p	31/545 (5.69%)	568/5820 (9.76%)	0.9998769301
Gal4p	82/545 (15.05%)	1213/5820 (20.84%)	0.999880559
Snf2p	154/545 (28.26%)	2081/5820 (35.76%)	0.9999600565
Sir2p	103/545 (18.9%)	1493/5820 (25.65%)	0.9999615321
Spt20p	139/545 (25.5%)	1937/5820 (33.28%)	0.9999851852
Tup1p	203/545 (37.25%)	2660/5820 (45.7%)	0.9999885745
Met4p	100/545 (18.35%)	1548/5820 (26.6%)	0.9999991633
Snf6p	190/545 (34.86%)	2640/5820 (45.36%)	0.9999999298
Sas3p	65/545 (11.93%)	1183/5820 (20.33%)	0.9999999775
Spt4p	83/545 (15.23%)	1428/5820 (24.54%)	0.9999999898

$\alpha^{BON} = 1.69x10^{-4}$

(C) TF enrichment in down-regulated genes in Δ*ssb1*Δ*ssb2*

Transcription factor	Sample frequency	Background frequency	p-value
Ifh1p	57/288 (19.79%)	498/5820 (8.56%)	6.809441E-10
Opi1p	44/288 (15.28%)	379/5820 (6.51%)	5.5098793E-8
Met28p	32/288 (11.11%)	229/5820 (3.93%)	6.250287E-8
Stb3p	11/288 (3.82%)	34/5820 (0.58%)	3.7175837E-7
Gcn4p	189/288 (65.63%)	2994/5820 (51.44%)	4.2996307E-7
Taf14p	77/288 (26.74%)	909/5820 (15.62%)	4.7944715E-7
Tda9p	29/288 (10.07%)	214/5820 (3.68%)	5.278337E-7
Fkh1p	70/288 (24.31%)	807/5820 (13.87%)	7.8772119E-7
Met32p	53/288 (18.4%)	549/5820 (9.43%)	9.800232E-7
Cac2p	61/288 (21.18%)	672/5820 (11.55%)	1.0761637E-6
Mig1p	46/288 (15.97%)	449/5820 (7.71%)	1.1103542E-6
Yhp1p	98/288 (34.03%)	1287/5820 (22.11%)	1.294425E-6
Cdc73p	68/288 (23.61%)	789/5820 (13.56%)	1.5172022E-6
Srb5p	12/288 (4.17%)	49/5820 (0.84%)	3.0459197E-6
Ric1p	58/288 (20.14%)	648/5820 (11.13%)	3.3520545E-6
Snf5p	101/288 (35.07%)	1373/5820 (23.59%)	4.2884996E-6
Rap1p	185/288 (64.24%)	2997/5820 (51.49%)	5.1986871E-6
Hsf1p	119/288 (41.32%)	1726/5820 (29.66%)	0.0000101499
Put3p	57/288 (19.79%)	658/5820 (11.31%)	0.0000114971
Gln3p	88/288 (30.56%)	1180/5820 (20.27%)	0.0000145732
Isw2p	89/288 (30.9%)	1204/5820 (20.69%)	0.0000182539
Stp1p	60/288 (20.83%)	717/5820 (12.32%)	0.0000190014
Rim101p	63/288 (21.88%)	771/5820 (13.25%)	0.0000238622
Hms1p	76/288 (26.39%)	993/5820 (17.06%)	0.0000291148
Adr1p	66/288 (22.92%)	827/5820 (14.21%)	0.0000312421
Leu3p	56/288 (19.44%)	665/5820 (11.43%)	0.000032168
Mot3p	51/288 (17.71%)	586/5820 (10.07%)	0.0000322982
Tbs1p	16/288 (5.56%)	102/5820 (1.75%)	0.0000339773
Rtg3p	56/288 (19.44%)	671/5820 (11.53%)	0.0000416745

Mga2p	82/288 (28.47%)	1107/5820 (19.02%)	0.0000424788
Rme1p	39/288 (13.54%)	416/5820 (7.15%)	0.0000632931
Gzf3p	30/288 (10.42%)	288/5820 (4.95%)	0.0000721736
Hfi1p	100/288 (34.72%)	1444/5820 (24.81%)	0.0000726653
Cbf1p	104/288 (36.11%)	1523/5820 (26.17%)	0.0000865342
Ixr1p	115/288 (39.93%)	1732/5820 (29.76%)	0.0001006137
Stb6p	14/288 (4.86%)	89/5820 (1.53%)	0.0001022553
Fhl1p	88/288 (30.56%)	1241/5820 (21.32%)	0.0001056361
Bas1p	167/288 (57.99%)	2755/5820 (47.34%)	0.0001301026
Rox1p	68/288 (23.61%)	900/5820 (15.46%)	0.0001331996
Pdr8p	11/288 (3.82%)	60/5820 (1.03%)	0.0001405121
Hap5p	40/288 (13.89%)	447/5820 (7.68%)	0.0001422305
Snf11p	21/288 (7.29%)	177/5820 (3.04%)	0.0001521356
Mac1p	41/288 (14.24%)	465/5820 (7.99%)	0.0001614089
Srb2p	62/288 (21.53%)	808/5820 (13.88%)	0.0001852374
Kar4p	65/288 (22.57%)	860/5820 (14.78%)	0.0001941061
Tis11p	31/288 (10.76%)	319/5820 (5.48%)	0.0001990831
Gcr2p	90/288 (31.25%)	1308/5820 (22.47%)	0.0002615125
Esc2p	52/288 (18.06%)	652/5820 (11.2%)	0.0002668416
Rfx1p	55/288 (19.1%)	703/5820 (12.08%)	0.0002833932
Rpd3p	14/288 (4.86%)	98/5820 (1.68%)	0.0002923824
Ask10p	18/288 (6.25%)	148/5820 (2.54%)	0.0003317619
Sua7p	4/288 (1.39%)	8/5820 (0.14%)	0.0003509792
Phd1p	58/288 (20.14%)	763/5820 (13.11%)	0.0004030239
Hac1p	44/288 (15.28%)	535/5820 (9.19%)	0.0004386746
Rtg1p	27/288 (9.38%)	277/5820 (4.76%)	0.0004964597
Rsc1p	53/288 (18.4%)	687/5820 (11.8%)	0.0005273265
Pdr3p	81/288 (28.13%)	1177/5820 (20.22%)	0.0006113552
Gis1p	33/288 (11.46%)	371/5820 (6.37%)	0.0006326899
Cin5p	134/288 (46.53%)	2180/5820 (37.46%)	0.000775184
Stb1p	33/288 (11.46%)	376/5820 (6.46%)	0.0008008985

Tho2p	11/288 (3.82%)	73/5820 (1.25%)	0.0008221773
Yap7p	51/288 (17.71%)	667/5820 (11.46%)	0.0008412421
Hel2p	21/288 (7.29%)	203/5820 (3.49%)	0.0009862846
Zap1p	99/288 (34.38%)	1530/5820 (26.29%)	0.0011227425
Gal3p	12/288 (4.17%)	88/5820 (1.51%)	0.0011993351
Zds1p	33/288 (11.46%)	388/5820 (6.67%)	0.0013742476
Nnf2p	27/288 (9.38%)	298/5820 (5.12%)	0.0015193752
Aft2p	39/288 (13.54%)	486/5820 (8.35%)	0.0015232665
Flo8p	47/288 (16.32%)	618/5820 (10.62%)	0.0015474582
Hda1p	34/288 (11.81%)	407/5820 (6.99%)	0.0015812506
Met31p	34/288 (11.81%)	407/5820 (6.99%)	0.0015812506
Arg82p	16/288 (5.56%)	142/5820 (2.44%)	0.0016182533
Tye7p	82/288 (28.47%)	1237/5820 (21.25%)	0.0018060588
Yap3p	29/288 (10.07%)	333/5820 (5.72%)	0.0018846575
Yox1p	92/288 (31.94%)	1428/5820 (24.54%)	0.002140009
Ino2p	35/288 (12.15%)	431/5820 (7.41%)	0.0021954231
Ume6p	61/288 (21.18%)	872/5820 (14.98%)	0.0023735645
Pho4p	90/288 (31.25%)	1406/5820 (24.16%)	0.0029987773
Srb8p	43/288 (14.93%)	572/5820 (9.83%)	0.0031103785
Gal4p	79/288 (27.43%)	1213/5820 (20.84%)	0.0037323133
Hal9p	24/288 (8.33%)	272/5820 (4.67%)	0.0038948561
Hms2p	13/288 (4.51%)	114/5820 (1.96%)	0.0039102944
Pdr1p	91/288 (31.6%)	1438/5820 (24.71%)	0.0040049543
Hst1p	21/288 (7.29%)	228/5820 (3.92%)	0.0041385191
Gat1p	20/288 (6.94%)	214/5820 (3.68%)	0.0043211049
Mig3p	103/288 (35.76%)	1669/5820 (28.68%)	0.0044524183
Pho2p	71/288 (24.65%)	1075/5820 (18.47%)	0.0044538813
Dal81p	30/288 (10.42%)	369/5820 (6.34%)	0.0044646194
Spt3p	79/288 (27.43%)	1230/5820 (21.13%)	0.0054522426
Skn7p	62/288 (21.53%)	922/5820 (15.84%)	0.0055116995
Dot5p	12/288 (4.17%)	106/5820 (1.82%)	0.005814574

Aft1p	87/288 (30.21%)	1385/5820 (23.8%)	0.0062811753
Gcr1p	100/288 (34.72%)	1630/5820 (28.01%)	0.0063207371
Cat8p	20/288 (6.94%)	223/5820 (3.83%)	0.0068304853
Sum1p	44/288 (15.28%)	615/5820 (10.57%)	0.006940501
Swi3p	109/288 (37.85%)	1821/5820 (31.29%)	0.008976028
Sfl1p	14/288 (4.86%)	140/5820 (2.41%)	0.0090226318
Stb5p	74/288 (25.69%)	1162/5820 (19.97%)	0.0091087885
Ssn2p	25/288 (8.68%)	309/5820 (5.31%)	0.0097519932
Sok2p	131/288 (45.49%)	2255/5820 (38.75%)	0.0098877428
Gat4p	19/288 (6.6%)	218/5820 (3.75%)	0.0111016309
Rph1p	34/288 (11.81%)	463/5820 (7.96%)	0.011957558
Nut1p	22/288 (7.64%)	269/5820 (4.62%)	0.0132810976
Ppr1p	17/288 (5.9%)	192/5820 (3.3%)	0.0137398644
Rtf1p	33/288 (11.46%)	453/5820 (7.78%)	0.0147648429
Hat2p	35/288 (12.15%)	487/5820 (8.37%)	0.0147718437
Uls1p	47/288 (16.32%)	700/5820 (12.03%)	0.0164283433
Rtt107p	36/288 (12.5%)	508/5820 (8.73%)	0.0165083898
Mig2p	24/288 (8.33%)	307/5820 (5.27%)	0.0166057315
Hst3p	14/288 (4.86%)	151/5820 (2.59%)	0.0168402537
Rds2p	39/288 (13.54%)	561/5820 (9.64%)	0.0170430851
Pip2p	80/288 (27.78%)	1306/5820 (22.44%)	0.0171721582
Rsc2p	49/288 (17.01%)	741/5820 (12.73%)	0.0186548208
Swi5p	113/288 (39.24%)	1944/5820 (33.4%)	0.0192214257
Dal80p	17/288 (5.9%)	201/5820 (3.45%)	0.0207495134
Sin3p	104/288 (36.11%)	1782/5820 (30.62%)	0.0234003001
Hpa2p	7/288 (2.43%)	59/5820 (1.01%)	0.0253848452
Cup9p	67/288 (23.26%)	1085/5820 (18.64%)	0.0256081791
Hir2p	23/288 (7.99%)	303/5820 (5.21%)	0.0256481281
Sir1p	23/288 (7.99%)	307/5820 (5.27%)	0.0293152207
Jhd1p	10/288 (3.47%)	105/5820 (1.8%)	0.034128091
Eds1p	12/288 (4.17%)	136/5820 (2.34%)	0.036158165

Upc2p	23/288 (7.99%)	314/5820 (5.4%)	0.0366777326
Set2p	24/288 (8.33%)	331/5820 (5.69%)	0.0368323119
Cad1p	50/288 (17.36%)	794/5820 (13.64%)	0.0391969973
Cha4p	17/288 (5.9%)	217/5820 (3.73%)	0.0395727879
Spt20p	110/288 (38.19%)	1937/5820 (33.28%)	0.0410481197
Aro80p	29/288 (10.07%)	428/5820 (7.35%)	0.0496284546
Mal13p	7/288 (2.43%)	69/5820 (1.19%)	0.0530764341
Smk1p	10/288 (3.47%)	115/5820 (1.98%)	0.057543855
Mcm1p	95/288 (32.99%)	1670/5820 (28.69%)	0.0578501338
YFL052W	8/288 (2.78%)	85/5820 (1.46%)	0.0581230189
Gal11p	51/288 (17.71%)	841/5820 (14.45%)	0.0661023501
Ert1p	15/288 (5.21%)	199/5820 (3.42%)	0.067181336
Smp1p	20/288 (6.94%)	284/5820 (4.88%)	0.0685096357
Nsi1p	8/288 (2.78%)	88/5820 (1.51%)	0.068518279
Pib2p	25/288 (8.68%)	371/5820 (6.37%)	0.0688770116
Ndt80p	36/288 (12.5%)	568/5820 (9.76%)	0.0695936851
Mss11p	38/288 (13.19%)	605/5820 (10.4%)	0.0704791873
YKL222C	6/288 (2.08%)	60/5820 (1.03%)	0.0746867728
YPR022C	10/288 (3.47%)	121/5820 (2.08%)	0.075711122
YPR015C	11/288 (3.82%)	138/5820 (2.37%)	0.0790563845
Snf1p	19/288 (6.6%)	272/5820 (4.67%)	0.0793398839
Bdf2p	26/288 (9.03%)	396/5820 (6.8%)	0.0821056235
Rco1p	30/288 (10.42%)	469/5820 (8.06%)	0.0846187638
Sut1p	27/288 (9.38%)	417/5820 (7.16%)	0.0881578469
Rpn4p	99/288 (34.38%)	1783/5820 (30.64%)	0.0900013609
Ash1p	169/288 (58.68%)	3188/5820 (54.78%)	0.0957603017
Sds3p	38/288 (13.19%)	625/5820 (10.74%)	0.1019844583
Sko1p	54/288 (18.75%)	925/5820 (15.89%)	0.1024144536
Uga3p	21/288 (7.29%)	317/5820 (5.45%)	0.1031459535
Isw1p	27/288 (9.38%)	428/5820 (7.35%)	0.1113019714
Aca1p	19/288 (6.6%)	285/5820 (4.9%)	0.1118941331

Ngg1p	6/288 (2.08%)	69/5820 (1.19%)	0.1248670506
Spt10p	98/288 (34.03%)	1793/5820 (30.81%)	0.1258042621
Gal80p	7/288 (2.43%)	85/5820 (1.46%)	0.1264182789
Mal33p	38/288 (13.19%)	639/5820 (10.98%)	0.1289512984
Mds3p	4/288 (1.39%)	40/5820 (0.69%)	0.133795709
Yrr1p	42/288 (14.58%)	718/5820 (12.34%)	0.1369827316
Ssn3p	7/288 (2.43%)	87/5820 (1.49%)	0.1380566662
Wtm1p	13/288 (4.51%)	188/5820 (3.23%)	0.1382545203
Nrg1p	42/288 (14.58%)	720/5820 (12.37%)	0.1411182543
Yap5p	50/288 (17.36%)	874/5820 (15.02%)	0.145478641
Ada2p	10/288 (3.47%)	139/5820 (2.39%)	0.1494852471
Pgd1p	27/288 (9.38%)	444/5820 (7.63%)	0.1513361969
Dot6p	11/288 (3.82%)	159/5820 (2.73%)	0.1630648968
Hap3p	19/288 (6.6%)	303/5820 (5.21%)	0.1688279054
Pho23p	9/288 (3.13%)	126/5820 (2.16%)	0.170692308
Snf2p	111/288 (38.54%)	2081/5820 (35.76%)	0.1712586282
Spt23p	98/288 (34.03%)	1827/5820 (31.39%)	0.1775633566
Azf1p	13/288 (4.51%)	198/5820 (3.4%)	0.1809673514
Thi2p	45/288 (15.63%)	798/5820 (13.71%)	0.1880417298
Rgt1p	29/288 (10.07%)	496/5820 (8.52%)	0.1938068992
Hir3p	24/288 (8.33%)	405/5820 (6.96%)	0.2026863111
Vms1p	12/288 (4.17%)	185/5820 (3.18%)	0.2043599963
Bye1p	10/288 (3.47%)	150/5820 (2.58%)	0.2077975031
Rlm1p	40/288 (13.89%)	711/5820 (12.22%)	0.2105612447
Snt2p	9/288 (3.13%)	135/5820 (2.32%)	0.2240577866
Xbp1p	40/288 (13.89%)	716/5820 (12.3%)	0.2242338103
Ecm22p	30/288 (10.42%)	526/5820 (9.04%)	0.2284733537
Swi4p	58/288 (20.14%)	1067/5820 (18.33%)	0.2293537015
YJL206C	11/288 (3.82%)	172/5820 (2.96%)	0.2310312075
Tod6p	6/288 (2.08%)	84/5820 (1.44%)	0.2351949343
Sut2p	11/288 (3.82%)	174/5820 (2.99%)	0.242376522

Yap6p	53/288 (18.4%)	975/5820 (16.75%)	0.242987526
Hat1p	4/288 (1.39%)	51/5820 (0.88%)	0.2443130955
Hog1p	13/288 (4.51%)	211/5820 (3.63%)	0.2447582679
Msn4p	133/288 (46.18%)	2565/5820 (44.07%)	0.2484345499
Msn1p	17/288 (5.9%)	286/5820 (4.91%)	0.248871296
Mbp1p	38/288 (13.19%)	691/5820 (11.87%)	0.264045632
Nrg2p	20/288 (6.94%)	346/5820 (5.95%)	0.2646069947
Dat1p	14/288 (4.86%)	235/5820 (4.04%)	0.2732877799
YNR063W	4/288 (1.39%)	54/5820 (0.93%)	0.2774791029
Msi1p	14/288 (4.86%)	236/5820 (4.06%)	0.2785188561
Rlf2p	45/288 (15.63%)	840/5820 (14.43%)	0.3022266169
Hmo1p	53/288 (18.4%)	1010/5820 (17.35%)	0.3389712394
Spt4p	74/288 (25.69%)	1428/5820 (24.54%)	0.341895816
Hst4p	8/288 (2.78%)	134/5820 (2.3%)	0.3442967104
Tup1p	135/288 (46.88%)	2660/5820 (45.7%)	0.3633017615
Rdr1p	13/288 (4.51%)	234/5820 (4.02%)	0.3736491667
Rsc30p	6/288 (2.08%)	102/5820 (1.75%)	0.3925288822
Oaf1p	46/288 (15.97%)	891/5820 (15.31%)	0.4001402117
Not3p	13/288 (4.51%)	239/5820 (4.11%)	0.4031335167
Cse2p	40/288 (13.89%)	776/5820 (13.33%)	0.4151372528
Mot2p	7/288 (2.43%)	124/5820 (2.13%)	0.4162199602
YGR067C	10/288 (3.47%)	183/5820 (3.14%)	0.4200897232
Met18p	13/288 (4.51%)	242/5820 (4.16%)	0.4209049624
Sas5p	17/288 (5.9%)	321/5820 (5.52%)	0.4217599523
Crz1p	26/288 (9.03%)	500/5820 (8.59%)	0.4248498532
Urc2p	16/288 (5.56%)	302/5820 (5.19%)	0.4257186792
Stb2p	12/288 (4.17%)	224/5820 (3.85%)	0.4311287378
Stp2p	33/288 (11.46%)	643/5820 (11.05%)	0.4389895102
Mga1p	36/288 (12.5%)	703/5820 (12.08%)	0.4392562124
YPR196W	9/288 (3.13%)	167/5820 (2.87%)	0.4455928006
Yap1p	148/288 (51.39%)	2959/5820 (50.84%)	0.4484173778

Arg81p	18/288 (6.25%)	349/5820 (6%)	0.463266976
Sif2p	22/288 (7.64%)	432/5820 (7.42%)	0.4769187806
Sef1p	13/288 (4.51%)	252/5820 (4.33%)	0.4800615761
Mbf1p	10/288 (3.47%)	198/5820 (3.4%)	0.5208302759
Hot1p	4/288 (1.39%)	77/5820 (1.32%)	0.5338881486
Dal82p	40/288 (13.89%)	812/5820 (13.95%)	0.5398687887
Gat3p	22/288 (7.64%)	446/5820 (7.66%)	0.5401428425
Sip4p	12/288 (4.17%)	242/5820 (4.16%)	0.5407343136
Spt2p	19/288 (6.6%)	386/5820 (6.63%)	0.5456153213
Tos4p	10/288 (3.47%)	202/5820 (3.47%)	0.5468796684
Fzf1p	10/288 (3.47%)	203/5820 (3.49%)	0.5533121543
Kss1p	9/288 (3.13%)	186/5820 (3.2%)	0.5773424201
Oaf3p	20/288 (6.94%)	416/5820 (7.15%)	0.5893761704
Gts1p	24/288 (8.33%)	504/5820 (8.66%)	0.6121553884
Stb4p	4/288 (1.39%)	85/5820 (1.46%)	0.6130220621
Asg1p	12/288 (4.17%)	256/5820 (4.4%)	0.6208234517
Sip3p	3/288 (1.04%)	65/5820 (1.12%)	0.6313280874
Sas4p	6/288 (2.08%)	131/5820 (2.25%)	0.6363522052
YER130C	8/288 (2.78%)	174/5820 (2.99%)	0.6368217968
Arr1p	77/288 (26.74%)	1601/5820 (27.51%)	0.6408588227
Mth1p	16/288 (5.56%)	346/5820 (5.95%)	0.6501583107
Usv1p	6/288 (2.08%)	133/5820 (2.29%)	0.6510094939
Cup2p	27/288 (9.38%)	578/5820 (9.93%)	0.6570653687
Reb1p	48/288 (16.67%)	1013/5820 (17.41%)	0.6575599506
Msn2p	166/288 (57.64%)	3411/5820 (58.61%)	0.6578149185
Cst6p	130/288 (45.14%)	2695/5820 (46.31%)	0.679687735
Swi6p	35/288 (12.15%)	754/5820 (12.96%)	0.6882188622
Dig1p	17/288 (5.9%)	376/5820 (6.46%)	0.68923716
Rif2p	3/288 (1.04%)	73/5820 (1.25%)	0.7084009237
Hir1p	14/288 (4.86%)	320/5820 (5.5%)	0.7246528466
Pdc2p	1/288 (0.35%)	26/5820 (0.45%)	0.7335151701

Wtm2p	7/288 (2.43%)	168/5820 (2.89%)	0.7337817227
Hap1p	14/288 (4.86%)	328/5820 (5.64%)	0.7575606127
Otu1p	14/288 (4.86%)	328/5820 (5.64%)	0.7575606127
Stp4p	7/288 (2.43%)	176/5820 (3.02%)	0.7764374708
Srd1p	2/288 (0.69%)	57/5820 (0.98%)	0.7815993222
Hap4p	39/288 (13.54%)	881/5820 (15.14%)	0.8036740539
Tos8p	17/288 (5.9%)	407/5820 (6.99%)	0.8038109986
War1p	3/288 (1.04%)	87/5820 (1.49%)	0.8126926908
Plm2p	7/288 (2.43%)	185/5820 (3.18%)	0.8181820402
Fkh2p	30/288 (10.42%)	698/5820 (11.99%)	0.8252408657
Tbf1p	21/288 (7.29%)	505/5820 (8.68%)	0.8322053805
Sin4p	103/288 (35.76%)	2232/5820 (38.35%)	0.838433414
Sir3p	37/288 (12.85%)	863/5820 (14.83%)	0.8549747118
Ime1p	4/288 (1.39%)	122/5820 (2.1%)	0.8615143679
Snf6p	122/288 (42.36%)	2640/5820 (45.36%)	0.8664987471
Pop2p	6/288 (2.08%)	179/5820 (3.08%)	0.8854370508
Hap2p	71/288 (24.65%)	1614/5820 (27.73%)	0.8980854186
Abf1p	129/288 (44.79%)	2811/5820 (48.3%)	0.9002205336
Ste12p	181/288 (62.85%)	3852/5820 (66.19%)	0.9012010546
YLR278C	16/288 (5.56%)	425/5820 (7.3%)	0.9046736222
Rds1p	9/288 (3.13%)	260/5820 (4.47%)	0.9049808818
Rpi1p	5/288 (1.74%)	173/5820 (2.97%)	0.9359491914
Ino4p	33/288 (11.46%)	832/5820 (14.3%)	0.9361915514
Sas3p	49/288 (17.01%)	1183/5820 (20.33%)	0.9366156317
Sps18p	10/288 (3.47%)	303/5820 (5.21%)	0.9397021327
Pog1p	2/288 (0.69%)	94/5820 (1.62%)	0.9513026518
YER184C	6/288 (2.08%)	210/5820 (3.61%)	0.9533732269
Arg80p	13/288 (4.51%)	395/5820 (6.79%)	0.9612843186
Gsm1p	4/288 (1.39%)	169/5820 (2.9%)	0.9715609708
Rsf2p	14/288 (4.86%)	433/5820 (7.44%)	0.9720110506
Ndd1p	2/288 (0.69%)	107/5820 (1.84%)	0.9721993596

Ace2p	224/288 (77.78%)	4775/5820 (82.04%)	0.9757469762
Sfp1p	199/288 (69.1%)	4335/5820 (74.48%)	0.9855503883
Sir2p	58/288 (20.14%)	1493/5820 (25.65%)	0.9896929453
Rgm1p	11/288 (3.82%)	395/5820 (6.79%)	0.989990022
Yrm1p	110/288 (38.19%)	2605/5820 (44.76%)	0.991123093
Haa1p	21/288 (7.29%)	667/5820 (11.46%)	0.9937655194
Hcm1p	11/288 (3.82%)	424/5820 (7.29%)	0.9957870231
Met4p	58/288 (20.14%)	1548/5820 (26.6%)	0.9963003618
Tec1p	166/288 (57.64%)	3818/5820 (65.6%)	0.9983697437
Rif1p	7/288 (2.43%)	358/5820 (6.15%)	0.9992128097
Caf4p	2/288 (0.69%)	189/5820 (3.25%)	0.9993508267

$\alpha^{BON} = 1.74x10^{-4}$

(D) TF enrichment in down-regulated genes in Δ*reg1*

Transcription factor	**Sample frequency**	**Background frequency**	**p-value**
Cdc73p	118/449 (26.28%)	789/5820 (13.56%)	4.948807E-14
Nnf2p	55/449 (12.25%)	298/5820 (5.12%)	4.164611E-10
Gal4p	138/449 (30.74%)	1213/5820 (20.84%)	1.7667297E-7
Cup9p	126/449 (28.06%)	1085/5820 (18.64%)	2.4440019E-7
Rsc1p	87/449 (19.38%)	687/5820 (11.8%)	8.8200149E-7
Rox1p	107/449 (23.83%)	900/5820 (15.46%)	8.8971268E-7
Esc2p	81/449 (18.04%)	652/5820 (11.2%)	4.9705856E-6
Spt3p	133/449 (29.62%)	1230/5820 (21.13%)	6.3172877E-6
Srb2p	95/449 (21.16%)	808/5820 (13.88%)	7.2458284E-6
Pdr8p	16/449 (3.56%)	60/5820 (1.03%)	7.5273363E-6
Snf5p	145/449 (32.29%)	1373/5820 (23.59%)	7.5573495E-6
Isw2p	130/449 (28.95%)	1204/5820 (20.69%)	9.1888108E-6
Hst3p	28/449 (6.24%)	151/5820 (2.59%)	9.2763395E-6
Uls1p	84/449 (18.71%)	700/5820 (12.03%)	0.0000128155
Mot3p	72/449 (16.04%)	586/5820 (10.07%)	0.0000271201

Mcm1p	167/449 (37.19%)	1670/5820 (28.69%)	0.0000311829
Kar4p	97/449 (21.6%)	860/5820 (14.78%)	0.000033424
Put3p	78/449 (17.37%)	658/5820 (11.31%)	0.0000433199
Mga2p	118/449 (26.28%)	1107/5820 (19.02%)	0.0000527081
Rgt1p	62/449 (13.81%)	496/5820 (8.52%)	0.0000636141
Spt20p	187/449 (41.65%)	1937/5820 (33.28%)	0.0000704048
Tda9p	33/449 (7.35%)	214/5820 (3.68%)	0.0000803977
Gal11p	93/449 (20.71%)	841/5820 (14.45%)	0.0001094391
Gcr2p	133/449 (29.62%)	1308/5820 (22.47%)	0.0001488524
Cac2p	77/449 (17.15%)	672/5820 (11.55%)	0.0001552062
Pip2p	132/449 (29.4%)	1306/5820 (22.44%)	0.0002118652
Isw1p	53/449 (11.8%)	428/5820 (7.35%)	0.0002885872
Rsc2p	82/449 (18.26%)	741/5820 (12.73%)	0.0002992396
Rtt107p	60/449 (13.36%)	508/5820 (8.73%)	0.0004111957
Rpd3p	18/449 (4.01%)	98/5820 (1.68%)	0.0004181812
Taf14p	96/449 (21.38%)	909/5820 (15.62%)	0.0004622952
Zds1p	48/449 (10.69%)	388/5820 (6.67%)	0.0005784962
Yap7p	73/449 (16.26%)	667/5820 (11.46%)	0.0009339336
Aro80p	51/449 (11.36%)	428/5820 (7.35%)	0.0009364706
Xbp1p	77/449 (17.15%)	716/5820 (12.3%)	0.0011181424
Thi2p	84/449 (18.71%)	798/5820 (13.71%)	0.0012536033
Stb5p	115/449 (25.61%)	1162/5820 (19.97%)	0.0014486984
Rds2p	62/449 (13.81%)	561/5820 (9.64%)	0.0018514216
Phd1p	80/449 (17.82%)	763/5820 (13.11%)	0.0018699503
Aca1p	36/449 (8.02%)	285/5820 (4.9%)	0.0019693118
Sif2p	50/449 (11.14%)	432/5820 (7.42%)	0.0019924787
Gzf3p	36/449 (8.02%)	288/5820 (4.95%)	0.0023639969
Yhp1p	124/449 (27.62%)	1287/5820 (22.11%)	0.0025046585
Upc2p	38/449 (8.46%)	314/5820 (5.4%)	0.0032104136
Ume6p	88/449 (19.6%)	872/5820 (14.98%)	0.0034256058
Hms1p	98/449 (21.83%)	993/5820 (17.06%)	0.003912918

Srb8p	61/449 (13.59%)	572/5820 (9.83%)	0.0046452775
Yap3p	39/449 (8.69%)	333/5820 (5.72%)	0.0050435917
Dig1p	43/449 (9.58%)	376/5820 (6.46%)	0.0050946955
Pho2p	104/449 (23.16%)	1075/5820 (18.47%)	0.005452085
Hat2p	53/449 (11.8%)	487/5820 (8.37%)	0.0054995027
Tye7p	117/449 (26.06%)	1237/5820 (21.25%)	0.0065171469
Sir1p	36/449 (8.02%)	307/5820 (5.27%)	0.0068115892
Ino2p	47/449 (10.47%)	431/5820 (7.41%)	0.0084881519
Sds3p	64/449 (14.25%)	625/5820 (10.74%)	0.0093744706
Rme1p	45/449 (10.02%)	416/5820 (7.15%)	0.0114159099
Rim101p	76/449 (16.93%)	771/5820 (13.25%)	0.0118130952
Swi5p	172/449 (38.31%)	1944/5820 (33.4%)	0.0130629255
Dat1p	28/449 (6.24%)	235/5820 (4.04%)	0.0131384272
Opi1p	41/449 (9.13%)	379/5820 (6.51%)	0.0154219018
Spt10p	159/449 (35.41%)	1793/5820 (30.81%)	0.016680142
Cst6p	230/449 (51.22%)	2695/5820 (46.31%)	0.0168211619
Cse2p	75/449 (16.7%)	776/5820 (13.33%)	0.0192928482
Yox1p	129/449 (28.73%)	1428/5820 (24.54%)	0.0193316423
Ric1p	64/449 (14.25%)	648/5820 (11.13%)	0.0198122301
Tis11p	35/449 (7.8%)	319/5820 (5.48%)	0.01999027
Bye1p	19/449 (4.23%)	150/5820 (2.58%)	0.0211054843
Snf2p	180/449 (40.09%)	2081/5820 (35.76%)	0.0266425468
Hst1p	26/449 (5.79%)	228/5820 (3.92%)	0.0273022097
Rap1p	251/449 (55.9%)	2997/5820 (51.49%)	0.0288609032
Hda1p	42/449 (9.35%)	407/5820 (6.99%)	0.0293935982
Ndt80p	56/449 (12.47%)	568/5820 (9.76%)	0.0294952392
Bdf2p	41/449 (9.13%)	396/5820 (6.8%)	0.0297418287
Smk1p	15/449 (3.34%)	115/5820 (1.98%)	0.0300840505
Azf1p	23/449 (5.12%)	198/5820 (3.4%)	0.0303026732
Mac1p	47/449 (10.47%)	465/5820 (7.99%)	0.0304024242
Snf11p	21/449 (4.68%)	177/5820 (3.04%)	0.0305728259

Ada2p	17/449 (3.79%)	139/5820 (2.39%)	0.0378910932
YKL222C	9/449 (2%)	60/5820 (1.03%)	0.0389284362
Nrg1p	68/449 (15.14%)	720/5820 (12.37%)	0.0398341197
Mss11p	58/449 (12.92%)	605/5820 (10.4%)	0.0436289669
Hfi1p	127/449 (28.29%)	1444/5820 (24.81%)	0.0443034902
Hap4p	81/449 (18.04%)	881/5820 (15.14%)	0.0451335894
Pdc2p	5/449 (1.11%)	26/5820 (0.45%)	0.0455418816
Tbs1p	13/449 (2.9%)	102/5820 (1.75%)	0.0488139255
Ssn2p	32/449 (7.13%)	309/5820 (5.31%)	0.050915788
YNR063W	8/449 (1.78%)	54/5820 (0.93%)	0.0532218531
Hms2p	14/449 (3.12%)	114/5820 (1.96%)	0.0545443367
Sum1p	58/449 (12.92%)	615/5820 (10.57%)	0.0568637094
Mal33p	60/449 (13.36%)	639/5820 (10.98%)	0.0571722069
Ino4p	76/449 (16.93%)	832/5820 (14.3%)	0.0584043238
Dal80p	22/449 (4.9%)	201/5820 (3.45%)	0.0586423233
YFL052W	11/449 (2.45%)	85/5820 (1.46%)	0.060815551
Met31p	40/449 (8.91%)	407/5820 (6.99%)	0.0628361512
Mga1p	65/449 (14.48%)	703/5820 (12.08%)	0.0633489932
Tup1p	221/449 (49.22%)	2660/5820 (45.7%)	0.065990668
Swi3p	155/449 (34.52%)	1821/5820 (31.29%)	0.0696320678
Stb1p	37/449 (8.24%)	376/5820 (6.46%)	0.0706386223
Mig2p	31/449 (6.9%)	307/5820 (5.27%)	0.0709595201
Rds3p	1/449 (0.22%)	1/5820 (0.02%)	0.0771477663
Swi4p	94/449 (20.94%)	1067/5820 (18.33%)	0.079375816
Gln3p	103/449 (22.94%)	1180/5820 (20.27%)	0.0819754503
Rtg1p	28/449 (6.24%)	277/5820 (4.76%)	0.0822914081
Zap1p	131/449 (29.18%)	1530/5820 (26.29%)	0.0831049213
Gis1p	36/449 (8.02%)	371/5820 (6.37%)	0.0863143936
Cin5p	182/449 (40.53%)	2180/5820 (37.46%)	0.0886689778
Hir2p	30/449 (6.68%)	303/5820 (5.21%)	0.0909761306
Rtg3p	61/449 (13.59%)	671/5820 (11.53%)	0.0915169826

Uga3p	31/449 (6.9%)	317/5820 (5.45%)	0.0981409342
Gcr1p	138/449 (30.74%)	1630/5820 (28.01%)	0.1000448737
Sok2p	187/449 (41.65%)	2255/5820 (38.75%)	0.1034840281
Set2p	32/449 (7.13%)	331/5820 (5.69%)	0.1053127699
Tho2p	9/449 (2%)	73/5820 (1.25%)	0.1071652877
Rfx1p	63/449 (14.03%)	703/5820 (12.08%)	0.1078447193
Jhd1p	12/449 (2.67%)	105/5820 (1.8%)	0.1085434058
Swi6p	67/449 (14.92%)	754/5820 (12.96%)	0.112730974
Dal81p	35/449 (7.8%)	369/5820 (6.34%)	0.1138530576
Stb3p	5/449 (1.11%)	34/5820 (0.58%)	0.1171503197
Ecm22p	48/449 (10.69%)	526/5820 (9.04%)	0.1192213666
Snf6p	216/449 (48.11%)	2640/5820 (45.36%)	0.1216156981
Nut1p	26/449 (5.79%)	269/5820 (4.62%)	0.1344077773
Hog1p	21/449 (4.68%)	211/5820 (3.63%)	0.1347398468
Hap1p	31/449 (6.9%)	328/5820 (5.64%)	0.1351426346
Gal3p	10/449 (2.23%)	88/5820 (1.51%)	0.1385461719
Stp1p	63/449 (14.03%)	717/5820 (12.32%)	0.141844531
Ifh1p	45/449 (10.02%)	498/5820 (8.56%)	0.1432501159
Usv1p	14/449 (3.12%)	133/5820 (2.29%)	0.1439719164
Stb6p	10/449 (2.23%)	89/5820 (1.53%)	0.1460468364
Rtf1p	41/449 (9.13%)	453/5820 (7.78%)	0.1543301952
Sut1p	38/449 (8.46%)	417/5820 (7.16%)	0.1549858659
Rsc30p	11/449 (2.45%)	102/5820 (1.75%)	0.1610933344
Eds1p	14/449 (3.12%)	136/5820 (2.34%)	0.162914704
Hpa2p	7/449 (1.56%)	59/5820 (1.01%)	0.1668450905
Yap6p	83/449 (18.49%)	975/5820 (16.75%)	0.1687817094
Gat4p	21/449 (4.68%)	218/5820 (3.75%)	0.1692750851
YJL206C	17/449 (3.79%)	172/5820 (2.96%)	0.1727255446
Srb5p	6/449 (1.34%)	49/5820 (0.84%)	0.1733252419
Hap5p	40/449 (8.91%)	447/5820 (7.68%)	0.1764787268
YER184C	20/449 (4.45%)	210/5820 (3.61%)	0.1898792275

Dot5p	11/449 (2.45%)	106/5820 (1.82%)	0.1925508252
Mig3p	137/449 (30.51%)	1669/5820 (28.68%)	0.1996974081
Spt4p	118/449 (26.28%)	1428/5820 (24.54%)	0.200555436
Hal9p	25/449 (5.57%)	272/5820 (4.67%)	0.2036697579
Msn1p	26/449 (5.79%)	286/5820 (4.91%)	0.2140586098
Rco1p	41/449 (9.13%)	469/5820 (8.06%)	0.2154105027
Bas1p	221/449 (49.22%)	2755/5820 (47.34%)	0.2167464162
Rlm1p	60/449 (13.36%)	711/5820 (12.22%)	0.2402640309
Asg1p	23/449 (5.12%)	256/5820 (4.4%)	0.2494189019
Sin4p	179/449 (39.87%)	2232/5820 (38.35%)	0.2613977203
Pdr1p	117/449 (26.06%)	1438/5820 (24.71%)	0.2616541062
Pho23p	12/449 (2.67%)	126/5820 (2.16%)	0.2644179543
Flo8p	52/449 (11.58%)	618/5820 (10.62%)	0.2674215401
Sir2p	121/449 (26.95%)	1493/5820 (25.65%)	0.2732021817
Mal13p	7/449 (1.56%)	69/5820 (1.19%)	0.2813550885
Met32p	46/449 (10.25%)	549/5820 (9.43%)	0.2937419253
Crz1p	42/449 (9.35%)	500/5820 (8.59%)	0.298774543
Urc2p	26/449 (5.79%)	302/5820 (5.19%)	0.3054672685
Sas4p	12/449 (2.67%)	131/5820 (2.25%)	0.309790867
Cha4p	19/449 (4.23%)	217/5820 (3.73%)	0.3146614597
Hsf1p	138/449 (30.74%)	1726/5820 (29.66%)	0.3185075017
YPR022C	11/449 (2.45%)	121/5820 (2.08%)	0.3299818289
YGR067C	16/449 (3.56%)	183/5820 (3.14%)	0.3371059009
Rdr1p	20/449 (4.45%)	234/5820 (4.02%)	0.3482858198
Smp1p	24/449 (5.35%)	284/5820 (4.88%)	0.3491614129
Hat1p	5/449 (1.11%)	51/5820 (0.88%)	0.3576167059
Mbf1p	17/449 (3.79%)	198/5820 (3.4%)	0.3581562074
Kss1p	16/449 (3.56%)	186/5820 (3.2%)	0.3615913073
Mbp1p	56/449 (12.47%)	691/5820 (11.87%)	0.3642355829
YPR015C	12/449 (2.67%)	138/5820 (2.37%)	0.3761701134
Sko1p	74/449 (16.48%)	925/5820 (15.89%)	0.3824315919

Hot1p	7/449 (1.56%)	77/5820 (1.32%)	0.3834874007
Sfl1p	12/449 (2.67%)	140/5820 (2.41%)	0.395491148
Fkh2p	56/449 (12.47%)	698/5820 (11.99%)	0.3956001991
Pho4p	111/449 (24.72%)	1406/5820 (24.16%)	0.4048262301
Rpn4p	140/449 (31.18%)	1783/5820 (30.64%)	0.415715218
Pib2p	30/449 (6.68%)	371/5820 (6.37%)	0.4205428816
Skn7p	73/449 (16.26%)	922/5820 (15.84%)	0.422005027
Rtg2p	1/449 (0.22%)	7/5820 (0.12%)	0.4301060163
Stp2p	51/449 (11.36%)	643/5820 (11.05%)	0.4376469075
Cbf1p	119/449 (26.5%)	1523/5820 (26.17%)	0.4523983257
Hap2p	126/449 (28.06%)	1614/5820 (27.73%)	0.4543337044
Msi1p	19/449 (4.23%)	236/5820 (4.06%)	0.4581050186
Ert1p	16/449 (3.56%)	199/5820 (3.42%)	0.4698831409
Sua7p	1/449 (0.22%)	8/5820 (0.14%)	0.474125008
Hac1p	42/449 (9.35%)	535/5820 (9.19%)	0.4768789255
Cad1p	62/449 (13.81%)	794/5820 (13.64%)	0.4801854069
Gal80p	7/449 (1.56%)	85/5820 (1.46%)	0.4865950589
Stb4p	7/449 (1.56%)	85/5820 (1.46%)	0.4865950589
Mot2p	10/449 (2.23%)	124/5820 (2.13%)	0.4904267456
Met28p	18/449 (4.01%)	229/5820 (3.93%)	0.5036277788
Sip4p	19/449 (4.23%)	242/5820 (4.16%)	0.5038874613
Hir1p	25/449 (5.57%)	320/5820 (5.5%)	0.5052580091
Ssn3p	7/449 (1.56%)	87/5820 (1.49%)	0.5117243859
Nsi1p	7/449 (1.56%)	88/5820 (1.51%)	0.5241301305
Snf1p	21/449 (4.68%)	272/5820 (4.67%)	0.5330728956
Arg82p	11/449 (2.45%)	142/5820 (2.44%)	0.5407007681
Aft2p	37/449 (8.24%)	486/5820 (8.35%)	0.5620151188
Dot6p	12/449 (2.67%)	159/5820 (2.73%)	0.5761484453
Gts1p	38/449 (8.46%)	504/5820 (8.66%)	0.5878764165
Mth1p	26/449 (5.79%)	346/5820 (5.95%)	0.5883471912
Nrg2p	26/449 (5.79%)	346/5820 (5.95%)	0.5883471912

Wtm1p	14/449 (3.12%)	188/5820 (3.23%)	0.5965047554
Fhl1p	94/449 (20.94%)	1241/5820 (21.32%)	0.6024254741
Yrr1p	54/449 (12.03%)	718/5820 (12.34%)	0.6056089202
Mds3p	3/449 (0.67%)	40/5820 (0.69%)	0.6060692246
Arg81p	26/449 (5.79%)	349/5820 (6%)	0.6067803312
Rts2p	3/449 (0.67%)	41/5820 (0.7%)	0.6230725884
Ngg1p	5/449 (1.11%)	69/5820 (1.19%)	0.6242403111
Gcn4p	228/449 (50.78%)	2994/5820 (51.44%)	0.6339769625
Fkh1p	60/449 (13.36%)	807/5820 (13.87%)	0.6479051948
Cat8p	16/449 (3.56%)	223/5820 (3.83%)	0.6584998376
Stb2p	16/449 (3.56%)	224/5820 (3.85%)	0.6655907805
Plm2p	13/449 (2.9%)	185/5820 (3.18%)	0.6799509653
Cup2p	42/449 (9.35%)	578/5820 (9.93%)	0.6892714479
Hir3p	29/449 (6.46%)	405/5820 (6.96%)	0.6959416899
Gat3p	32/449 (7.13%)	446/5820 (7.66%)	0.6988356875
Sut2p	12/449 (2.67%)	174/5820 (2.99%)	0.7011077402
Hel2p	14/449 (3.12%)	203/5820 (3.49%)	0.7104103146
Rgm1p	28/449 (6.24%)	395/5820 (6.79%)	0.7138525945
Ask10p	10/449 (2.23%)	148/5820 (2.54%)	0.7159087759
Rds1p	18/449 (4.01%)	260/5820 (4.47%)	0.7219744191
Tbf1p	36/449 (8.02%)	505/5820 (8.68%)	0.7226160283
Hcm1p	30/449 (6.68%)	424/5820 (7.29%)	0.7231607299
Rlf2p	61/449 (13.59%)	840/5820 (14.43%)	0.7232777043
Hap3p	21/449 (4.68%)	303/5820 (5.21%)	0.7320360593
Ime1p	8/449 (1.78%)	122/5820 (2.1%)	0.7350908184
Sin3p	132/449 (29.4%)	1782/5820 (30.62%)	0.7368166471
Ixr1p	128/449 (28.51%)	1732/5820 (29.76%)	0.7434549083
Sas3p	86/449 (19.15%)	1183/5820 (20.33%)	0.7576095511
Rph1p	32/449 (7.13%)	463/5820 (7.96%)	0.7755081053
Vms1p	12/449 (2.67%)	185/5820 (3.18%)	0.7768685274
Met18p	16/449 (3.56%)	242/5820 (4.16%)	0.7786462337

Gat1p	14/449 (3.12%)	214/5820 (3.68%)	0.7801337968
YLR278C	29/449 (6.46%)	425/5820 (7.3%)	0.7886888276
Tos4p	13/449 (2.9%)	202/5820 (3.47%)	0.7930115087
YER130C	11/449 (2.45%)	174/5820 (2.99%)	0.7975303384
Rif1p	24/449 (5.35%)	358/5820 (6.15%)	0.7981544717
Stp4p	11/449 (2.45%)	176/5820 (3.02%)	0.8093322602
War1p	5/449 (1.11%)	87/5820 (1.49%)	0.8122332944
Hst4p	8/449 (1.78%)	134/5820 (2.3%)	0.8225700772
Rif2p	4/449 (0.89%)	73/5820 (1.25%)	0.8256688615
Tos8p	27/449 (6.01%)	407/5820 (6.99%)	0.826827823
Srd1p	3/449 (0.67%)	57/5820 (0.98%)	0.8272282664
Snt2p	8/449 (1.78%)	135/5820 (2.32%)	0.8287270196
Spt2p	25/449 (5.57%)	386/5820 (6.63%)	0.8520617732
Hmo1p	70/449 (15.59%)	1010/5820 (17.35%)	0.8631939717
Rsf2p	28/449 (6.24%)	433/5820 (7.44%)	0.8668645794
Sfp1p	325/449 (72.38%)	4335/5820 (74.48%)	0.8681812133
Mig1p	29/449 (6.46%)	449/5820 (7.71%)	0.8723918702
Sas5p	20/449 (4.45%)	321/5820 (5.52%)	0.8733985054
Aft1p	97/449 (21.6%)	1385/5820 (23.8%)	0.8845224537
Leu3p	44/449 (9.8%)	665/5820 (11.43%)	0.8875620101
Haa1p	44/449 (9.8%)	667/5820 (11.46%)	0.8919306746
Not3p	14/449 (3.12%)	239/5820 (4.11%)	0.8929724008
Pop2p	10/449 (2.23%)	179/5820 (3.08%)	0.8945262798
Pgd1p	28/449 (6.24%)	444/5820 (7.63%)	0.8969567561
Tod6p	4/449 (0.89%)	84/5820 (1.44%)	0.8979744454
Dal82p	54/449 (12.03%)	812/5820 (13.95%)	0.9044601551
Sps18p	18/449 (4.01%)	303/5820 (5.21%)	0.9070193541
YPR196W	9/449 (2%)	167/5820 (2.87%)	0.9072194997
Wtm2p	9/449 (2%)	168/5820 (2.89%)	0.910689447
Yap5p	58/449 (12.92%)	874/5820 (15.02%)	0.9159134771
Sir3p	57/449 (12.69%)	863/5820 (14.83%)	0.9203590124

Oaf1p	59/449 (13.14%)	891/5820 (15.31%)	0.9208639922
Fzf1p	11/449 (2.45%)	203/5820 (3.49%)	0.9225169465
Yrm1p	187/449 (41.65%)	2605/5820 (44.76%)	0.9238346219
Rpi1p	9/449 (2%)	173/5820 (2.97%)	0.9264367346
Ash1p	231/449 (51.45%)	3188/5820 (54.78%)	0.9361513787
Reb1p	67/449 (14.92%)	1013/5820 (17.41%)	0.9365276669
Pog1p	4/449 (0.89%)	94/5820 (1.62%)	0.9393387523
Arg80p	23/449 (5.12%)	395/5820 (6.79%)	0.9448932859
Adr1p	53/449 (11.8%)	827/5820 (14.21%)	0.9467645113
Gsm1p	8/449 (1.78%)	169/5820 (2.9%)	0.9557225414
Otu1p	17/449 (3.79%)	328/5820 (5.64%)	0.9748675864
Caf4p	8/449 (1.78%)	189/5820 (3.25%)	0.9822314793
Oaf3p	22/449 (4.9%)	416/5820 (7.15%)	0.9823798301
Arr1p	105/449 (23.39%)	1601/5820 (27.51%)	0.9828979304
Pdr3p	73/449 (16.26%)	1177/5820 (20.22%)	0.9888350374
Ppr1p	7/449 (1.56%)	192/5820 (3.3%)	0.9938121752
Sip3p	1/449 (0.22%)	65/5820 (1.12%)	0.9947456995
Sef1p	10/449 (2.23%)	252/5820 (4.33%)	0.9953243172
Spt23p	114/449 (25.39%)	1827/5820 (31.39%)	0.998426351
Msn4p	168/449 (37.42%)	2565/5820 (44.07%)	0.9987526064
Abf1p	183/449 (40.76%)	2811/5820 (48.3%)	0.9996489116
Ndd1p	1/449 (0.22%)	107/5820 (1.84%)	0.9998288765
Ace2p	339/449 (75.5%)	4775/5820 (82.04%)	0.9998882044
Msn2p	226/449 (50.33%)	3411/5820 (58.61%)	0.9999049572
Ste12p	253/449 (56.35%)	3852/5820 (66.19%)	0.9999974505
Tec1p	247/449 (55.01%)	3818/5820 (65.6%)	0.9999994805
Yap1p	168/449 (37.42%)	2959/5820 (50.84%)	0.999999999
Met4p	44/449 (9.8%)	1548/5820 (26.6%)	1

$\alpha^{BON} = 1.72x10^{-4}$

(E) Overlap of upregulated genes in a continously growing batch culture and up-regulated genes in Δ*reg1* and Δ*ssb1*Δ*ssb2*, respectively.

OD_{600}	Strain	Overlap Frequency	Background frequency	p-value	significant overlap
0.46	Δ*reg1*	13/545 (2.39%)	124/5820 (2.13%)	0.3767750015	no
0.46	Δ*ssb1*Δ*ssb2*	8/426 (1.88%)	124/5820 (2.13%)	0.6966371507	no
0.80	Δ*reg1*	54/545 (9.91%)	400/5820 (6.87%)	0.0031765547	yes
0.80	Δ*ssb1*Δ*ssb2*	56/426 (13.15%)	400/5820 (6.87%)	1.0228022E-6	yes
1.80	Δ*reg1*	46/545 (8.44%)	139/5820 (2.39%)	3.200567E-15	yes
1.80	Δ*ssb1*Δ*ssb2*	47/426 (11.03%)	139/5820 (2.39%)	2.349212E-20	yes
3.70	Δ*reg1*	47/545 (8.62%)	200/5820 (3.44%)	1.3033217E-9	yes
3.70	Δ*ssb1*Δ*ssb2*	59/426 (13.85%)	200/5820 (3.44%)	5.948475E-22	yes
6.90	Δ*reg1*	310/545 (56.88%)	1380/5820 (23.71%)	2.49742E-69	yes
6.90	Δ*ssb1*Δ*ssb2*	168/426 (39.44%)	1380/5820 (23.71%)	4.047573E-14	yes
7.30	Δ*reg1*	277/545 (50.83%)	833/5820 (14.31%)	2.67721E-104	yes
7.30	Δ*ssb1*Δ*ssb2*	149/426 (34.98%)	833/5820 (14.31%)	3.381602E-29	yes

Table S4. Crosslinking data. See Table S4.xls

SUPPLEMENTAL REFERENCES

1. Chen, L., Jiao, Z.H., Zheng, L.S., Zhang, Y.Y., Xie, S.T., Wang, Z.X., and Wu, J.W. (2009) Structural insight into the autoinhibition mechanism of AMP-activated protein kinase. *Nature*, **459**, 1146-1149.
2. Chen, L., Xin, F.-J., Wang, J., Hu, J., Zhang, Y.-Y., Wan, S., Cao, L.-S., Lu, C., Li, P., Yan, S.F.*, et al.* (2013) Conserved regulatory elements in AMPK. *Nature*, **498**, E8-E10.
3. Xin, F.-J., Wang, J., Zhao, R.-Q., Wang, Z.-X., and Wu, J.-W. (2013) Coordinated regulation of AMPK activity by multiple elements in the [alpha]-subunit. *Cell Res*, **23**, 1237-1240.
4. Muslin, A.J., Tanner, J.W., Allen, P.M., and Shaw, A.S. (1996) Interaction of 14-3-3 with signaling proteins is mediated by the recognition of phosphoserine. *Cell*, **84**, 889-897.

5. Coblitz, B., Wu, M., Shikano, S., and Li, M. (2006) C-terminal binding: an expanded repertoire and function of 14-3-3 proteins. *FEBS Lett*, **580**, 1531-1535.
6. Panni, S., Montecchi-Palazzi, L., Kiemer, L., Cabibbo, A., Paoluzi, S., Santonico, E., Landgraf, C., Volkmer-Engert, R., Bachi, A., Castagnoli, L.*, et al.* (2011) Combining peptide recognition specificity and context information for the prediction of the 14-3-3-mediated interactome in S. cerevisiae and H. sapiens. *Proteomics*, **11**, 128-143.
7. Ben-Shem, A., Garreau de Loubresse, N., Melnikov, S., Jenner, L., Yusupova, G., and Yusupov, M. (2011) The structure of the eukaryotic ribosome at 3.0 A resolution. *Science*, **334**, 1524-1529.
8. Jenner, L., Melnikov, S., de Loubresse, N.G., Ben-Shem, A., Iskakova, M., Urzhumtsev, A., Meskauskas, A., Dinman, J., Yusupova, G., and Yusupov, M. (2012) Crystal structure of the 80S yeast ribosome. *Curr Opin Struct Biol*, **22**, 759-767.
9. Raue, U., Oellerer, S., and Rospert, S. (2007) Association of protein biogenesis factors at the yeast ribosomal tunnel exit is affected by the translational status and nascent polypeptide sequence. *J Biol Chem*, **282**, 7809-7816.
10. Ghaemmaghami, S., Huh, W.K., Bower, K., Howson, R.W., Belle, A., Dephoure, N., O'Shea, E.K., and Weissman, J.S. (2003) Global analysis of protein expression in yeast. *Nature*, **425**, 737-741.
11. Obsil, T., and Obsilova, V. (2011) Structural basis of 14-3-3 protein functions. *Semin Cell Dev Biol*, **22**, 663-672.
12. Kakiuchi, K., Yamauchi, Y., Taoka, M., Iwago, M., Fujita, T., Ito, T., Song, S.Y., Sakai, A., Isobe, T., and Ichimura, T. (2007) Proteomic analysis of in vivo 14-3-3 interactions in the yeast Saccharomyces cerevisiae. *Biochemistry*, **46**, 7781-7792.
13. Teixeira, M.C., Monteiro, P.T., Guerreiro, J.F., Goncalves, J.P., Mira, N.P., dos Santos, S.C., Cabrito, T.R., Palma, M., Costa, C., Francisco, A.P.*, et al.* (2014) The YEASTRACT database: an upgraded information system for the analysis of gene and genomic transcription regulation in Saccharomyces cerevisiae. *Nucleic Acids Res*, **42**, D161-166.
14. Joseph-Horne, T., Hollomon, D.W., and Wood, P.M. (2001) Fungal respiration: a fusion of standard and alternative components. *Biochim Biophys Acta*, **1504**, 179-195.
15. Heitman, J., Movva, N.R., Hiestand, P.C., and Hall, M.N. (1991) FK 506-binding protein proline rotamase is a target for the immunosuppressive agent FK 506 in Saccharomyces cerevisiae. *Proc Natl Acad Sci USA*, **88**, 1948-1952.
16. Rakwalska, M., and Rospert, S. (2004) The Ribosome-Bound Chaperones RAC and Ssb1/2p are Required for Accurate Translation in Saccharomyces cerevisiae. *Mol Cell Biol*, **24**, 9186-9197.
17. von Plehwe, U., Berndt, U., Conz, C., Chiabudini, M., Fitzke, E., Sickmann, A., Petersen, A., Pfeifer, D., and Rospert, S. (2009) The Hsp70 homolog Ssb is essential for glucose sensing via the SNF1 kinase network. *Genes Dev*, **23**, 2102-2115.