

Additional File 4: Genes with 2 fold change in gene expression after exposure to salt.

Down-regulated

2 fold down *gcn5*

KCl	annotation
SPAC977.05c	conserved fungal family
SPBPB2B2.15	conserved fungal family
SPBC1348.06c	conserved fungal family
SPAC5H10.06c	alcohol dehydrogenase Adh4
SPAC22A12.17c	short chain dehydrogenase (predicted)
SPAC3C7.14c	ubiquitinated histone-like protein Uhp1
SPBC8D2.16c	DUF171 family protein
SPBC30D10.14	dienelactone hydrolase family
SPCC965.07c	glutathione S-transferase Gst2
SPBC2A9.02	NAD dependent epimerase/dehydratase family protein
SPCPJ732.01	retromer complex subunit Vps5
SPBC24C6.09c	phosphoketolase family protein (predicted)
SPBC1271.08c	sequence orphan
SPAC977.14c	aldo/keto reductase, unknown biological role
SPCC16A11.15c	sequence orphan
SPAC9E9.11	pyridoxal reductase Plr1
SPAC5H10.03	phosphoglycerate mutase family
SPAC22H10.13	metallothionein Zym1
SPAC17G8.04c	ARP2/3 actin-organizing complex subunit Arc5
SPAC1039.02	phosphoprotein phosphatase (predicted)
SPAC4G9.12	gluconokinase
SPCC18B5.02c	cinnamoyl-CoA reductase pseudogene
SPAC3C7.11c	calnexin Cnx1
SPAC750.01	pseudogene
SPCC1494.03	armadillo repeat containing, Zfs1 target number 1
SPAC27E2.04c	dubious
SPCC569.05c	spermidine family transporter (predicted)
SPAC637.03	conserved fungal protein
SPBC16D10.08c	heat shock protein Hsp104 (predicted)
SPAC13C5.04	amidotransferase (predicted)
SPBC21B10.08c	sequence orphan
SPAC13C5.06c	sequence orphan
SPBC23G7.10c	NADH-dependent flavin oxidoreductase (predicted)
SPAC16A10.01	DUF1212 family protein
SPBC215.11c	aldo/keto reductase, unknown biological role
SPAC7D4.09c	steroid dehydrogenase (predicted)
SPAC513.02	phosphoglycerate mutase family
SPBC4C3.03	homoserine kinase (predicted)
SPAC27D7.09c	But2 family protein
SPBC12C2.14c	dubious
SPAPB1A10.05	sequence orphan
SPCC830.07c	DNAJ domain protein Psi1
SPCC736.05	wtf element Wtf7
SPAC1348.05	membrane transporter
SPBC21C3.08c	ornithine aminotransferase
SPAC2E1P3.05c	fungal cellulose binding domain protein
SPAC11D3.13	ThiJ domain protein
SPAC4G9.19	DNAJ domain protein DNAJB family
SPAC30D11.02c	sequence orphan
SPCC338.12	subtilisin cleaved region related protein (predicted)
SPCC1827.03c	acetyl-CoA ligase (predicted)
SPAC2F3.05c	xylose and arabinose reductase (predicted)
SPBC337.09	Erg28 protein

2 fold down *mst2* KCl

annotation
SPBPB2B2.19c
SPAC750.05c
SPAC977.01
SPBC1348.02
SPBP4G3.02
SPCC1020.10
SPAC212.04c
SPAC2H10.01
SPAC57A7.11
SPAC1786.02
SPCC584.16c
SPBC11C11.01
SPAC1B3.16c
SPCC1840.07c
SPBC651.12c
SPBC660.08
SPAC750.01
SPCC1235.01
SPBPB2B2.04
SPCC1919.13c
SPCC132.04c
SPAC977.06
SPCC965.12
SPAC2G11.02
SPBC19C7.04c
SPCP1E11.03
SPBC409.08
SPAC27D7.04
SPBC1289.14
SPAPB8E5.07c
SPAPB1A10.14
SPAC17A2.08c
SPAC977.14c
SPAC750.02c
SPBCPT2R1.01c
SPAC1B3.06c
SPCC24B10.19c
SPBC21C3.08c
SPAC1A6.08c
SPAC1556.01c
SPBC146.07
SPAPB1E7.10
SPAC18B11.05
SPCC1919.15
SPAC6G10.12c
SPBC26H8.04c
SPAC27D7.03c
SPBC1685.11
SPCC550.12
SPCC1450.03
SPAC57A7.06
SPAC750.07c
SPBC16A3.01
S. pombe specific 5Tm protein family
S. pombe specific 5Tm protein family
S. pombe specific 5Tm protein family
S. pombe specific 5Tm protein family
acid phosphatase Pho1
serine/threonine protein kinase Oca2
(predicted)
S. pombe specific DUF999 family protein 1
transcription factor, zf-fungal binuclear
cluster type (predicted)
WD repeat protein Mip1
phospholipase (predicted)
sequence orphan
RNA-binding protein
vitamin H transporter Vth1
phosphoprotein phosphatase (predicted)
sequence orphan
sequence orphan
pseudogene
sequence orphan
pseudo-very degraded transporter
conserved eukaryotic protein
NAD-dependent glutamate dehydrogenase
(predicted)
S. pombe specific DUF999 family protein 3
dipeptidyl peptidase (predicted)
ribosome biogenesis protein Urb2
(predicted)
conserved fungal protein
arrestin
spermine family transporter (predicted)
4-alpha-hydroxytetrahydrobiopterin
dehydratase (predicted)
adducin
ribosome biogenesis protein Rrp12
F-box protein
sequence orphan
aldo/keto reductase, unknown biological
role
membrane transporter
S. pombe specific DUF999 protein family 9
UbiE family methyltransferase (predicted)
sequence orphan
ornithine aminotransferase
sequence orphan
DNA repair protein Rad50
U2AF large subunit (U2AF-59)
DNA-directed RNA polymerase III
complex subunit Rpc17
pig-V (predicted)
ubiquitin-protein ligase E3 Br11
transcription factor Ace2
DEP domain protein
RNA-binding protein involved in meiosis
Mei2
RecA family ATPase Rlp1
actin-like protein Arp6
ribonucleoprotein (RNP) complex
(predicted)
U3 snoRNP protein Utp14 (predicted)
S. pombe specific GPI anchored protein
family 1
septin Spn3

SPBC651.12c	sequence orphan	SPBC1718.02	linear element associated protein Hop1
SPBC106.02c	sulfiredoxin	SPAC31G5.04	homoisocitrate dehydrogenase
SPBC428.18	replication licensing factor Cdt1	SPCC736.03c	mitochondrial phenylalanyl-tRNA synthetase
SPCC825.04c	N-acetyltransferase (predicted)	SPAC10F6.15	<i>S. pombe</i> specific UPF0300 family protein 1
SPAC343.12	conserved fungal protein	SPCC290.02	DNA-directed RNA polymerase III complex subunit Rpc34
SPBC1921.03c	mRNA export receptor Mex67		
SPBC428.04	sequence orphan		
SPBC83.18c	C2 domain protein Fic1		
SPCC663.08c	short chain dehydrogenase (predicted)		
SPBC21H7.06c	inositol metabolism protein Opi10 (predicted)		
SPCC70.10	sequence orphan		
SPAC823.15	minor serine/threonine protein phosphatase Ppa1		
SPBC3B9.18c	V-type ATPase subunit F (predicted)		
SPAC8E11.10	sorbose reductase (predicted)		
SPBC1289.14	adducin		
SPCC1223.03c	glycerol-3-phosphate dehydrogenase Gut2		
	transcription factor, zf-fungal binuclear cluster type (predicted)		
SPAC2H10.01	ubiquitin-protein ligase E3 (predicted)		
SPAC6B12.07c	sequence orphan		
SPAC922.04	NAD/NADH kinase (predicted)		
SPCC24B10.02c	vacuolar carboxypeptidase (predicted)		
SPAC24C9.08	conserved fungal protein		
SPAC32A11.01	autophagy associated protein Apg3 (predicted)		
SPBC3B9.06c	Hsp70 nucleotide exchange factor (predicted)		
SPBC3B9.01	conserved protein (fungal and plant)		
SPAC57A7.05	guanyl-nucleotide exchange factor Vps902 (predicted)		
SPBC29A10.11c	20S proteasome component beta 4 (predicted)		
SPAC31A2.04c	CRCB domain protein		
SPAC977.11	elongator complex, histone acetyltransferase subunit Elp3 (predicted)		
SPAC29A4.20	glutathione-dependent formaldehyde dehydrogenase (predicted)		
SPCC13B11.04c	short chain dehydrogenase (predicted)		
SPCC663.06c	methyltransferase (predicted)		
SPBC1348.04	mitochondrial mRNA processing protein Cox24 (predicted)		
SPAC1782.04	type I protein arginine N-methyltransferase Rmt1		
SPAC890.07c	tyrosine phosphatase Pyp2		
SPAC19D5.01	conserved fungal protein		
SPCC70.09c	sequence orphan		
SPAC22H12.01c	Sim4 and Mal2 associated (4 and 2 associated) protein 5		
SPAC1F8.06	mitochondrial heatshock protein Hsp78 (predicted)		
SPBC4F6.17c	cyclin pho85 family		
SPBC20F10.10	MBF transcription factor complex subunit Res1		
SPBC725.16	MS ion channel protein 2		
SPAC2C4.17c	CDK inhibitor Rum1		
SPBC32F12.09	alpha-glucosidase (predicted)		
SPAC30D11.01c	human COMT homolog 1		
SPBC119.03	GTPase activating protein (predicted)		
SPBC215.01	palmitoyltransferase (predicted)		
SPBC3H7.09	sulfate transporter (predicted)		
SPBC3H7.02	NADPH dehydrogenase (predicted)		
SPAC5H10.10	DNAJ domain protein Mas5 (predicted)		
SPBC1734.11	meiosis II protein Mes1		
SPAC5D6.08c	verprolin		
SPBC13E7.09	RNA-binding protein Puf3 (predicted)		
SPAC1687.22c	<i>S. pombe</i> specific 5Tm protein family		
SPAC977.02	pleckstrin homology domain protein		
SPAC19A8.02			

2 fold down Δ gcn5

Δ mst2 KCl

annotation

SPAC750.05c	<i>S. pombe</i> specific 5Tm protein family
SPAC977.01	<i>S. pombe</i> specific 5Tm protein family
SPBC26H8.11c	conserved fungal protein
SPBPB2B2.19c	<i>S. pombe</i> specific 5Tm protein family

2 fold down Δ gcn5

Δ mst2 KCl

annotation

SPCC569.05c	spermidine family transporter (predicted)
SPAC11D3.02c	ELLA family acetyltransferase (predicted)
SPBC12D12.07c	mitochondrial thioredoxin Trx2
SPBC17D11.06	DNA primase large subunit Spp2

SPBC11C11.01	RNA-binding protein	SPAC56E4.07	N-acetyltransferase (predicted)
SPAC2E1P3.05c	fungal cellulose binding domain protein	SPBC1778.01c	zuotin (predicted)
SPCC584.16c	sequence orphan	SPAC17A5.01	peroxin-6 (predicted)
SPBC1348.02	S. pombe specific 5Tm protein family	SPBC16H5.10c	ATP-dependent RNA helicase Prp43
SPAC17D4.01	peroxin-7 (predicted)	SPBC24C6.09c	phosphoketolase family protein (predicted)
			DNA-directed RNA polymerase I complex
SPAC57A7.11	WD repeat protein Mip1	SPBC3B9.07c	subunit Rpa43
SPAC1039.02	phosphoprotein phosphatase (predicted)	SPAC13C5.06c	sequence orphan
SPAC186.03	L-asparaginase (predicted)	SPAC19B12.10	human AMSH protein homolog
SPAC22A12.06c	serine hydrolase	SPBC1709.07	3-keto sterol reductase (predicted)
SPBC36.03c	spermidine family transporter (predicted)	SPBC21C3.08c	ornithine aminotransferase
	MFS family transmembrane transporter		
SPAC17C9.16c	Mfs1	SPCC663.13c	N-acetyltransferase (predicted)
			pyruvate dehydrogenase protein x
SPAC20G4.01	CCR4-Not complex subunit Caf16	SPCC1259.09c	component
SPAC869.04	formamidase-like protein	SPAC17G8.06c	dihydroxy-acid dehydratase (predicted)
SPAC144.03	adenylosuccinate synthetase Ade2	SPBC215.06c	human LYHRT homolog
			tRNA dihydrouridine synthase Dus4
			(predicted)
SPBC337.09	Erg28 protein	SPCC777.15	
	pyridoxine-pyridoxal-pyridoxamine kinase		
SPAC6F6.11c	(predicted)	SPBC2G2.05	60S ribosomal protein L13/L16
SPAC17G8.13c	histone acetyltransferase Mst2	SPBC725.15	orotate phosphoribosyltransferase Ura5
SPBC16D10.06	ZIP zinc transporter Zrt1	SPBC1709.10c	copper chaperone Atx1
SPAC23C4.06c	methyltransferase (predicted)	SPAC6C3.09	RNase P subunit (predicted)
	histidinol-phosphate aminotransferase		
	imidazole acetol phosphate transaminase		
SPBC11B10.02c	His3	SPCC1795.05c	uridylate kinase
	galactose-1-phosphate uridylyltransferase		
SPBPB2B2.10c	(predicted)	SPAP27G11.08c	sequence orphan
SPBC428.11	homocysteine synthase Met17	SPAC25G10.05c	ATP phosphoribosyltransferase
SPBC3B9.18c	V-type ATPase subunit F (predicted)	SPAC343.05	V-type ATPase subunit A
SPAC750.02c	membrane transporter	SPAC2F3.11	exopolyposphatase (predicted)
SPBC651.12c	sequence orphan	SPBC1271.12	oxysterol binding protein (predicted)
			geranylgeranyltransferase I beta subunit
SPAC1A6.10	Moeb/ThiF domain	SPAC2E1P5.04c	Cwg2
			MFS family membrane transporter
SPBC3H7.05c	sequence orphan	SPBPB2B2.16c	(predicted)
SPAC1786.02	phospholipase (predicted)	SPAC23H3.05c	Set1C complex subunit Swd1
SPBPB2B2.18	sequence orphan	SPAC56F8.05c	BAR domain protein (predicted)
SPBPB2B2.09c	2-dehydropantoate 2-reductase (predicted)	SPBC646.07c	enoyl reductase
SPBC3H7.11	actin binding methyltransferase (predicted)	SPCC4G3.02	bis(5'-nucleosidyl)-tetraphosphatase
	delta-1-pyrroline-5-carboxylate		
SPBC24C6.04	dehydrogenase	SPBC577.12	endoribonuclease (predicted)
			phosphatidylethanolamine N-
SPBC1105.05	glucan 1,3-beta-glucosidase I/II precursor	SPBC26H8.03	methyltransferase Cho2
	Golgi membrane protein involved in		
SPBC32F12.12c	vesicle-medated transport (predicted)	SPBC106.11c	phospholipase A2, PAF family homolog
SPCC1827.03c	acetyl-CoA ligase (predicted)	SPAC4F10.15c	WASp homolog
SPCC1840.07c	phosphoprotein phosphatase (predicted)	SPAC57A10.12c	dihydroorotate dehydrogenase Ura3
			cell surface glycoprotein (predicted),
SPBC1271.04c	eIF-5A-deoxyhypusine synthase	SPBC359.04c	DIPSY family
	RTT109 family histone lysine		
SPBC342.06c	acetyltransferase	SPBC21B10.08c	sequence orphan
			armadillo repeat protein, unknown
SPBC1289.14	adducin	SPBC1703.03c	biological role
SPAP7G5.04c	aminoadipate-semialdehyde dehydrogenase	SPBC21.01	kinetochore protein Mis17
SPBC18E5.08	N-acetyltransferase (predicted)	SPBC660.12c	aminotransferase (predicted)
SPAC9.02c	N-acetyltransferase (predicted)	SPBC1A4.07c	U3 snoRNP-associated protein Sof1
SPCC4B3.18	phosphopantothenate-cysteine ligase	SPAC56F8.10	methylenetetrahydrofolate reductase Met9
SPAC16E8.04c	chorismate mutase (predicted)	SPBC18E5.05c	elongator complex subunit Iki1 (predicted)
	3,4-dihydroxy-2-butanone 4-phosphate		
SPBC23E6.06c	synthase (predicted)	SPBC365.02c	protoheme IX farnesyltransferase
		SPCC1450.14c	ER oxidoreductin Ero1b

Up-regulated 2 fold up gcn5 KCl SPCC736.15	annotation protein kinase inhibitor (predicted) phosphoribosylformylglycinamide synthase Ade3 (predicted)	2 fold up mst2 SPAC1002.17c	annotation uracil phosphoribosyltransferase (predicted)
SPAC6F12.10c SPCC13B11.01	alcohol dehydrogenase Adh1	SPAC9E9.12c SPCC13B11.01	ABC transporter Ybt1 alcohol dehydrogenase Adh1 phosphatidyl-N-methylethanolamine N- methyltransferase (predicted) cytochrome c (predicted) RecA family ATPase Dmc1 fructose-1,6-bisphosphatase Fbp1 GTPase activating protein Gap1 kinesin-like protein Klp8 mRNA export receptor Mex67 ubiquitinated histone-like protein Uhp1 serine/threonine protein phosphatase Ppe1 U4/U6 x U5 tri-snRNP complex subunit Prp31 conserved fungal protein DNA repair protein Rhp42 S-adenosylmethionine synthetase ADP-ribosylation factor Sar1 serine/threonine protein kinase Sck1 DUF1688 family protein GTP cyclohydrolase II (predicted) endosulphine family protein meiotic recombination protein Rec25 related to neuronal calcium sensor Ncs1 conserved fungal protein phospholipase (predicted) alpha-1,2-galactosyltransferase Gmh3 serine/threonine protein kinase Ppk8 (predicted) uncharacterised trans-sulfuration enzyme (predicted) ubiquitin-specific protease (predicted) sequence orphan Jmj1 protein But2 family protein xylose and arabinose reductase (predicted) arrestin/PY protein 1 protein kinase inhibitor (predicted) glucose-6-phosphate 1-dehydrogenase (predicted) Maf-like protein F1-F0 ATPase assembly protein (predicted) DNAJ domain protein DNAJB family dihydrodiol dehydrogenase (predicted) short chain dehydrogenase (predicted) High-mobility group non-histone chromatin protein sequence orphan C-4 methylsterol oxidase (predicted) glutathione S-transferase Gst3 DUF89 family protein
SPCC330.08 SPBC530.10c SPAC3H8.06 SPAC644.18c SPCC1235.02 SPAC13D6.02c SPAC27F1.02c SPAC23C11.11 SPBC1347.06c SPCC188.03 SPMIT.11 SPCC191.07 SPBP8B7.16c SPBC20F10.01 SPAC140.02 SPCC736.04c SPBC354.12 SPBC725.09c SPAC12G12.04 SPAP8A3.04c SPAC24H6.04 SPAC11H11.04 SPAC10F6.12c SPAC27D7.03c	alpha-1,2-mannosyltransferase Alg11 mitochondrial adenine nucleotide carrier Anc1 inositol phosphorylceramide synthase (predicted) TRAPP complex subunit Bet3 (predicted) biotin synthase zinc finger protein Byr3 tropomyosin serine/threonine protein kinase Cka1 serine/threonine protein kinase Cki1 condensin, non-SMC subunit Cnd3 cytochrome c oxidase 2 cytochrome c (predicted) ATP-dependent RNA helicase Dbp2 snoRNP pseudouridylation complex protein Gar1 nucleolar protein required for rRNA processing alpha-1,2-galactosyltransferase Gma12 glyceraldehyde 3-phosphate dehydrogenase Gpd3 BAR adaptor protein Hob3 mitochondrial heat shock protein Hsp60/Mcp60 heat shock protein Hsp9 hexokinase 1 pheromone p-factor receptor protein-S isoprenylcysteine O-methyltransferase Mam4 RNA-binding protein involved in meiosis Mei2	SPBC337.16 SPCC191.07 SPAC8E11.03c SPBC1198.14c SPBC646.12c SPAC144.14 SPBC1921.03c SPAC3C7.14c SPCC1739.12 SPBC119.13c SPAC343.12 SPCC4G3.10c SPBC14F5.05c SPBC31F10.06c SPAC1B9.02c SPAC1002.18 SPAC1002.19 SPAC10F6.16 SPAC17A5.18c SPAC18B11.04 SPAC19G12.16c SPAC1A6.03c SPAC22E12.06c SPAC22G7.08	
SPAC31G5.12c SPAC31G5.11 SPAC21E11.03c SPBC14F5.04c SPBP22H7.05c SPCC126.02c SPBC365.06 SPAC1002.13c	repressor of RNA polymerase III Maf1 cAMP-independent regulatory protein Pac2 transcription factor Pcr1 phosphoglycerate kinase Pkg1 (predicted) ATPase with bromodomain protein Ku domain protein Pku70 SUMO beta-glucosidase Psu1 (predicted)	SPAC23A1.14c SPAC24C9.14 SPAC25A8.02 SPAC25H1.02 SPAC27D7.11c SPAC2F3.05c SPAC31A2.12 SPAC3C7.02c	
SPAC4H3.10c SPBC17G9.11c SPBC28F2.12 SPCC1020.04c SPAC22E12.13c SPBC29A3.04	pyruvate kinase (predicted) pyruvate carboxylase DNA-directed RNA polymerase II large subunit DNA-directed RNA polymerase I, II and III subunit Rpb6 60S ribosomal protein L24-3 (L30) 60S ribosomal protein L7a (L8)	SPAC3C7.13c SPAC3G6.03c SPAC4G8.11c SPAC4G9.19 SPAC513.06c SPAC521.03	
SPBC119.01 SPCC18.14c SPBC14F5.05c SPBC31F10.06c SPAC6G9.11	19S proteasome regulatory subunit Rpn3 60S acidic ribosomal protein Rpp0 (predicted) S-adenosylmethionine synthetase ADP-ribosylation factor Sar1 SNAP receptor, synaptobrevin family U4/U6 x U5 tri-snRNP complex subunit Snu66 (predicted) superoxide dismutase Sod1 nucleoporin Pom34 (predicted) uracil phosphoribosyltransferase (predicted) GTP cyclohydrolase II (predicted) ATP-dependent RNA helicase Hca4 (predicted)	SPAC57A10.09c SPAC167.06c SPAC630.08c SPAC688.04c SPAC806.04c	
SPAC167.03c SPAC821.10c SPAC1002.02 SPAC1002.17c SPAC1002.19 SPAC1093.05		SPAC869.10c SPAP7G5.06 SPAPB24D3.07c SPAPB2B4.02 SPAC1782.01 SPBC106.16	proline specific permease (predicted) amino acid permease, unknown 4 sequence orphan monothiol glutaredoxin Grx5 proteasome component 20S proteasome component alpha 4 Pre6 transcription factor TFIIF complex beta subunit Tfg2 (predicted) Stress Responsive Orphan 1 ubiquitin-protein ligase E3 (predicted) HECT-type ubiquitin-protein ligase Pub3 MADS-box transcription factor Mbx1 splicing factor 3B cell surface agglutination protein Map4 inositol metabolism protein Opi10 (predicted) sequence orphan
SPAC10F6.16 SPAC11E3.07 SPAC11G7.03 SPAC12G12.07c SPAC14C4.12c SPAC16.05c SPAC16E8.06c SPAC1705.03c SPAC17H9.05	endosulphine family protein V-type ATPase subunit E isocitrate dehydrogenase (NAD+) subunit 1 Idh1 conserved fungal protein clr6 L associated factor 1 Laf1 transcription factor Sfp1 (predicted) RNA-binding protein Nop12 conserved fungal family rRNA processing protein Ebp2	SPBC1198.13c SPBC1347.11 SPBC14F5.10c SPBC16E9.11c SPBC19G7.06 SPBC211.05 SPBC21D10.06c SPBC21H7.06c SPBC26H8.13c	

SPAC18G6.01c	calchone related protein family	SPBC530.07c	phosphomethylpyrimidine kinase (predicted)
SPAC19D5.09c	retrotransposable element	SPBC582.08	alanine aminotransferase (predicted)
SPAC19G12.16c	conserved fungal protein	SPBC725.03	conserved fungal protein
SPAC1A6.03c	phospholipase (predicted)	SPBC839.16	C1-5,6,7,8-tetrahydrofolate (THF) synthase
SPAC1A6.04c	phospholipase B homolog Plb1	SPBP19A11.02c	sequence orphan
			RNA polymerase II transcription elongation
SPAC1B3.06c	UbiE family methyltransferase (predicted)	SPBP23A10.14c	factor SpELL
SPAC1F5.03c	FAD-dependent oxidoreductase (predicted)	SPCC1322.10	conserved fungal protein
SPAC227.11c	sensor for misfolded ER glycoproteins Yos9 (predicted)	SPCC16A11.04	sorting nexin Snx12 (predicted)
SPAC227.17c	conserved protein (fungal and plant)	SPCC16A11.15c	sequence orphan
SPAC22A12.06c	serine hydrolase	SPCC24B10.06	sequence orphan
	diacylglycerol cholinephosphotranferase/ diacylglycerol		
SPAC22A12.10	ethanolaminesphotranferase (predicted)	SPCC285.04	transthyretin (predicted)
SPAC22E12.03c	THII/PPFI family peptidase (predicted)	SPCC4B3.06c	NADPH-dependent FMN reductase (predicted)
SPAC22G7.07c	mRNA (N6-adenosine)-methyltransferase (predicted)	SPCC584.11c	Svf1 family protein Svf1
SPAC23A1.17	WIP homolog	SPCC663.09c	short chain dehydrogenase (predicted)
SPAC23D3.12	inorganic phosphate transporter (predicted)	SPCC736.10c	mitochondrial ribosomal protein subunit S8
	cyclin-dependent protein Srb mediator subunit kinase		
SPAC23H4.17c	Srb10	SPCC757.03c	ThiJ domain protein
SPAC25B8.12c	nucleotide-sugar phosphatase (predicted)	SPCC757.11c	membrane transporter
SPAC26A3.08	Sm snRNP core protein Smb1	SPCC794.15	sequence orphan
SPAC26A3.16	UBA domain protein Dph1	SPCC965.06	potassium channel subunit (predicted)
SPAC26F1.02	pinin homologue	SPCPB16A4.06c	sequence orphan
SPAC27F1.06c	FKBP-type peptidyl-prolyl cis-trans isomerase (predicted)	SPCC825.03c	SNARE Psy1
SPAC29A4.13	urease accessory protein UreF	SPAC1250.03	ubiquitin conjugating enzyme Ubc14
SPAC2C4.13	V-type ATPase subunit c"	SPCC330.05c	orotidine 5'-phosphate decarboxylase Ura4
SPAC29E6.02	U4/U6 x U5 tri-snRNP complex subunit Prp3 (predicted)	SPBC649.04	UV-induced protein Uvi15
	cofactor for methionyl- and glutamyl-tRNA synthetases		
SPAC30C2.04	(predicted)	SPAC9E9.07c	GTPase Ypt2
SPAC30D11.03	ATP-dependent RNA helicase Ddx27/Drs1 (predicted)		
SPAC30D11.11	Haemolysin-III family protein		
SPAC31G5.10	Myb family protein Eta2		
SPAC323.02c	20S proteasome component alpha 5, Pup2 (predicted)		
SPAC3A12.16c	TIM23 translocase complex subunit Tim17		
SPAC4F8.06	mitochondrial ribosomal protein subunit S12 (predicted)		
SPAC513.04	sequence orphan		
SPAC56F8.15	dubious		
SPAC57A10.09c	High-mobility group non-histone chromatin protein		
SPAC607.06c	metallopeptidase		
	methionine salvage haloacid dehalogenase-like hydrolase		
SPAC644.08	(predicted)		
SPAC644.17c	mitochondrial ribosomal protein subunit L9 (predicted)		
SPAC683.02c	zf-CCHC type zinc finger protein		
SPAC6G9.08	ubiquitin C-terminal hydrolase Ubp6		
SPAC732.01	V-type ATPase proteolipid subunit		
SPAC806.04c	DUF89 family protein		
SPAC9.09	homocysteine methyltransferase		
SPAC9E9.09c	aldehyde dehydrogenase (predicted)		
SPAP27G11.09c	GTP cyclohydrolase (predicted)		
SPAP7G5.06	amino acid permease, unknown 4		
SPAP8A3.05	ski complex interacting GTPase (predicted)		
SPAPB1E7.07	glutamate synthase Glt1 (predicted)		
SPAPB2B4.02	monothiol glutaredoxin Grx5		
SPAPB2B4.07	ubiquitin family protein, human UBTD1 homolog		
SPBC106.16	20S proteasome component alpha 4 Pre6		
SPBC1105.14	transcription factor Rsv2		
SPBC119.09c	ORMDL family protein		
SPBC119.10	asparagine synthetase		
SPBC1198.07c	mannan endo-1,6-alpha-mannosidase (predicted)		
	transcription factor TFIIIF complex beta subunit Tfg2		
SPBC1198.13c	(predicted)		
SPBC11C11.05	KRE9 family cell wall biosynthesis protein (predicted)		
SPBC11G11.03	ribosome assembly protein (predicted)		
SPBC1347.11	Stress Responsive Orphan 1		
SPBC13E7.04	F1-ATPase delta subunit (predicted)		
SPBC146.02	sequence orphan		
SPBC14F5.10c	ubiquitin-protein ligase E3 (predicted)		
SPBC16A3.08c	serpine1 related protein (predicted)		
SPBC16E9.11c	HECT-type ubiquitin-protein ligase Pub3		
SPBC16H5.05c	cyclophilin family peptidyl-prolyl cis-trans isomerase		

SPBC1703.13c	Cyp7 mitochondrial inorganic phosphate transporter (predicted)
SPBC1709.15c	cleavage factor two Cft2/polyadenylation factor CPSF-73 (predicted)
SPBC1773.01	striatin homolog
SPBC17D11.08	WD repeat protein, human WDR68 family
SPBC1E8.04	retrotransposable element: pseudo
SPBC21D10.09c	ubiquitin-protein ligase E3 (predicted)
SPBC25H2.15	programmed cell death protein homolog
SPBC29A10.06c	conserved fungal protein
SPBC29A10.09c	CAF1 family ribonuclease
SPBC2A9.05c	DUF846 family protein mitochondrial and cytoplasmic histidine-tRNA ligase
SPBC2G2.12	Hrs1
SPBC2G5.05	transketolase (predicted)
SPBC30B4.08	double-strand siRNA ribonuclease Mdm10/Mdm12/Mmm1 complex subunit Mmm1 (predicted)
SPBC27B12.01c	amino acid permease, unknown 8
SPBC359.03c	adducin
SPBC359.06	nucleosome assembly protein (predicted)
SPBC36B7.08c	F-box protein Pof9
SPBC3H7.06c	phosphoserine phosphatase (predicted)
SPBC3H7.07c	DNAJ/TPR domain protein DNAJC7 family
SPBC543.02c	sequence orphan
SPBC577.11	conserved fungal protein
SPBC660.05	GIN5 complex subunit Psf2
SPBC725.13c	homoserine dehydrogenase (predicted)
SPBC776.03	mitochondrial tricarboxylic acid transporter
SPBC83.13	U1 snRNP-associated protein Usp107
SPBC839.10	ACN9 family mitochondrial protein
SPBP23A10.03c	mitochondrial processing peptidase complex beta subunit Qer1
SPBP23A10.15c	TIM22 inner membrane protein import complex anchor subunit Tim18
SPBP23A10.16	carbonic anhydrase (predicted)
SPBP8B7.05c	cyclophilin family peptidyl-prolyl cis-trans isomerase Cyp4
SPBP8B7.25	acyl-coA desaturase (predicted)
SPCC1281.06c	transcription factor, zf-GATA type (predicted)
SPCC1393.08	RWD domain
SPCC1393.09c	sequence orphan
SPCC1393.12	DUF89 family protein
SPCC1393.13	retrotransposable element: pseudo
SPCC1494.11c	transcription factor TFIIIF complex alpha subunit Tfg1 (predicted)
SPCC1620.09c	centrin
SPCC1682.04	Shk1 kinase binding protein 15
SPCC16C4.08c	cytochrome c oxidase subunit VIa (predicted)
SPCC1739.09c	notchless-like protein
SPCC18.05c	aspartate semialdehyde dehydrogenase (predicted)
SPCC1827.06c	DUF1715 family protein
SPCC191.08	sequence orphan
SPCC1919.07	RNA binding protein (predicted)
SPCC31H12.03c	sequence orphan
SPCC1235.01	RNA-binding protein
SPCC320.11c	cytochrome c oxidase subunit V
SPCC338.10c	nucleosome assembly protein Nap1
SPCC364.06	translation elongation factor eEF3
SPCC417.08	karyopherin
SPCC550.11	ribosome biogenesis protein (predicted)
SPCC550.15c	conserved fungal protein
SPCC553.12c	Svf1 family protein Svf1
SPCC584.11c	sequence orphan
SPCC584.16c	steroid oxidoreductase superfamily protein
SPCC594.04c	sequence orphan
SPCC594.07c	cystathionine beta-lyase (predicted)
SPCC11E10.01	siderophore-iron transporter Str2
SPCC61.01c	conserved fungal protein
SPCC63.14	mitochondrial ribosomal protein subunit S8
SPCC736.10c	

SPCC737.02c	ubiquinol-cytochrome-c reductase complex subunit 6
SPCC790.03	rhomboid family protease
SPCC794.04c	membrane transporter
SPCC794.11c	ENTH/VHS domain protein Ent3
SPCC970.10c	ubiquitin-protein ligase E3 Brl2
SPCP1E11.05c	acyl-coA-sterol acyltransferase (predicted)
SPCP1E11.08	ribosome biogenesis protein Nsa2 (predicted)
SPCP1E11.11	Puf family RNA-binding protein
SPCPB16A4.05c	urease accessory protein UREG (predicted)
SPCPJ732.02c	xylulose kinase (predicted)
SPBC21C3.18	serine/threonine protein kinase Spo4
SPCC188.06c	signal recognition particle subunit Srp54
SPAC4H3.05	ATP-dependent DNA helicase, UvrD subfamily
SPCC825.03c	SNARE Psy1
SPBC776.09	ATP-dependent RNA helicase Ste13
SPAC1565.04c	adaptor protein Ste4
SPCC5E4.03c	SAGA complex subunit/TATA-binding protein associated factor/transcription factor TFIID complex subunit Taf5
SPAC29E6.08	TATA-binding protein (TBP)
SPAC29A4.02c	translation elongation factor EF-1 gamma subunit
SPCC1450.04	translation elongation factor EF-1 beta subunit (eEF1B)
SPBC25H2.07	translation initiation factor eIF1A
SPBC17G9.09	translation initiation factor eIF2 gamma subunit
SPAC4D7.05	translation initiation factor eIF3i
SPBC1709.18	translation initiation factor eIF4E 4F complex subunit
SPCC1919.09	translation initiation factor eIF6
SPCC24B10.21	triosephosphate isomerase
SPBC337.08c	ubiquitin, ubi4
SPCC285.07c	wtf element Wtf18
SPBC1289.17	retrotransposable element
SPBC1E8.04	retrotransposable element
SPAC13D1.01c	retrotransposable element
SPAC26A3.13c	retrotransposable element
SPAC167.08	retrotransposable element
SPCC1020.14	retrotransposable element
SPAPB15E9.03c	retrotransposable element
SPAC27E2.08	retrotransposable element
SPAC9.04	retrotransposable element
SPBC9B6.02c	retrotransposable element

2 fold up-regulated
in Δ gen5 Δ mst2 after
60 min., KCL

SPCC330.05c	orotidine 5'-phosphate decarboxylase Ura4
SPCC1739.08c	short chain dehydrogenase (predicted)
SPBC359.06	adducin
SPBC1198.14c	fructose-1,6-bisphosphatase Fbp1
SPAC3G9.11c	pyruvate decarboxylase (predicted)
SPCC794.01c	glucose-6-phosphate 1-dehydrogenase (predicted)
SPCC13B11.01	alcohol dehydrogenase Adh1
SPAC13F5.03c	mitochondrial glycerol dehydrogenase Gld1
SPACUNK4.10	hydroxyacid dehydrogenase (predicted)
SPAC1002.19	GTP cyclohydrolase II (predicted)
SPAC22H10.13	metallothionein Zym1
SPBC13A2.04c	PTR family peptide transporter
SPBC19C2.05	serine/threonine protein kinase Ran1
SPBC1347.11	Stress Responsive Orphan 1
SPAC31G5.09c	MAP kinase Spk1

SPCC757.03c	ThiJ domain protein
SPAC1039.09	amino acid permease Isp5
SPBC3E7.13c	Splicing factor, SYF2 family

2 fold up-
regulated in
 Δ gen5 Δ mst2

SPAC5D6.04	auxin family transmembrane transporter (predicted)
SPBC800.07c	mitochondrial translation elongation factor EF-Ts Tsf1
SPBC18H10.05	WD repeat protein, human WDR44 family
SPBC16G5.05c	MSP domain
SPAPB24D3.10c	alpha-glucosidase Agl1
SPAC1327.01c	transcription factor, zf-fungal binuclear cluster type (predicted)
SPAPB24D3.07c	sequence orphan
SPAC19G12.08	sphingosine hydroxylase (predicted)
SPCC306.10	wtf element Wtf8, pseudo
SPAPB2B4.03	cyclin Cig2
SPBC1271.05c	zf-AN1 type zinc finger protein
SPCP31B10.06	C2 domain protein
SPAC29B12.04	pyridoxine biosynthesis protein
SPCC663.06c	short chain dehydrogenase (predicted)
SPAC22F8.04	triose phosphate transporter (predicted)

SPCC1259.03	DNA-directed RNA polymerase complex I subunit Rpa12
SPCC338.18	sequence orphan
SPBC646.12c	GTPase activating protein Gap1

SPCC16A11.15c SPAC27D7.03c	sequence orphan RNA-binding protein involved in meiosis Mei2	SPAC11G7.03 SPAC343.12	isocitrate dehydrogenase (NAD ⁺) subunit 1 Idh1 conserved fungal protein
SPAC22F3.12c	regulator of G-protein signaling Rgs1	SPAC3G9.04	phosphoric ester hydrolase Ssu72 (predicted)
SPAC977.16c SPAC15E1.02c SPCC1393.12	dihydroxyacetone kinase Dak2 DUF1761 family protein sequence orphan	SPAPB24D3.08c SPBC1711.02 SPBC1683.08	NADP-dependent oxidoreductase (predicted) mating-type m-specific polypeptide mc hexose transporter Ght4 IMPcyclohydrolase/phosphoribosylaminoimidazolecarbox amideformyltransferase Vid24 family protein
SPCC1020.02 SPAC11H11.04	kinetochore protein Spc7 pheromone p-factor receptor	SPCPB16A4.03c SPAP8A3.13c	
SPAC1F5.09c SPCC965.06	PAK-related kinase Shk2 potassium channel subunit (predicted) tspO homolog/ peripheral benzodiazepine receptor homolog, involved in the transport cytoplas/mitochondrial of haem (predicted)	SPAC2F3.10 SPAC56F8.16	GARP complex subunit Vps54 (predicted) transcription factor Esc1 (predicted)
SPBC725.10		SPAC26H5.08c	glucan 1,3-beta-glucosidase Bgl2
SPBC32C12.02	transcription factor Ste11	SPAC1635.01	voltage-dependent anion-selective channel
SPAC26H5.09c	GFO/IDH/MocA family oxidoreductase	SPAC23D3.12	inorganic phosphate transporter (predicted)
SPAC1A6.04c	phospholipase B homolog Plb1	SPBC215.11c	aldo/keto reductase, unknown biological role
SPAC19G12.16c	conserved fungal protein	SPBC1683.01	inorganic phosphate transporter (predicted)
SPAC11D3.01c SPAC19G12.09 SPAC26F1.14c SPCC965.07c SPBC16E9.11c SPCC584.11c	conserved fungal protein NADH/NADPH dependent indole-3- acetaldehyde reductase AKR3C2 apoptosis-inducing factor homolog Aif1 glutathione S-transferase Gst2 HECT-type ubiquitin-protein ligase Pub3 Svf1 family protein Svfl	SPAC57A10.09c SPBC800.10c SPAC16E8.02 SPCC1919.06c SPAC20G8.02 SPBC24C6.06	High-mobility group non-histone chromatin protein EPS15 repeat family actin cortical patch component (predicted) DUF962 family protein wtf element mitochondrial phospholipase (predicted) G-protein alpha subunit
SPBC19F8.07 SPAC2F3.05c SPBC19C2.04c SPAC3C7.14c SPAC8F11.10c SPBC29A10.14 SPBC56F2.06 SPCC737.04 SPAC21E11.04 SPCC1442.01 SPBC1683.06c SPAC14C4.01c	cyclin-dependent kinase activating kinase Crk1 xylose and arabinose reductase (predicted) ubiquitin C-terminal hydrolase Ubp11 ubiquitinated histone-like protein Uhp1 pyruvyltransferase Pvg1 meiotic cohesin complex subunit Rec8 sequence orphan S. pombe specific UPF0300 family protein 6 L-azetidine-2-carboxylic acid acetyltransferase guanyl-nucleotide exchange factor Ste6 uridine ribohydrolase (predicted) DUF1770 family protein	SPBC1778.04 SPBC1711.02 SPAC4A8.04 SPBC3H7.02 SPAP14E8.02 SPCC1620.04c SPAC637.03 SPAC14C4.07 SPBC2G2.17c SPCC594.02c SPAC1D4.14 SPBP4H10.10	Spo4-Spo6 kinase complex regulatory subunit Spo6 mating-type m-specific polypeptide mc vacuolar serine protease Isp6 sulfate transporter (predicted) homolog of S. cerevisiae Tos4 Cdc20/Fizzy family WD repeat protein conserved fungal protein membrane transporter beta-glucosidase Psu2 (predicted) conserved fungal protein THO complex subunit Tho2 (predicted) rhomboid family protease
SPAC4H3.03c	glucan 1,4-alpha-glucosidase (predicted)	SPAC12B10.14c	serine/threonine protein kinase Ppk2 (predicted)
SPAC521.03 SPBC19G7.06 SPCC663.08c	short chain dehydrogenase (predicted) MADS-box transcription factor Mbx1 short chain dehydrogenase (predicted)	SPAC9E9.03 SPCC895.08c SPAC869.10c	3-isopropylmalate dehydratase Leu2 (predicted) conserved fungal protein proline specific permease (predicted)
SPAPB8E5.03 SPCC70.08c SPCC548.07c SPAC4G9.12 SPBC32H8.02c SPBC725.11c SPBC725.03 SPAPB1A10.14	malic acid transport protein Mae1 methyltransferase (predicted) hexose transporter Ght1 gluconokinase NEDD8 protease Nep2 CCAAT-binding factor complex subunit Php2 conserved fungal protein F-box protein	SPBC29A10.03c SPAC30D11.02c SPCC285.11 SPAC31G5.10 SPAC19G12.10c SPBC119.03 SPAC513.02 SPCC191.01	chromatin remodeling complex subunit Rlf2 (predicted) sequence orphan UBA/UAS domain protein Ucp10 Myb family protein Eta2 vacuolar carboxypeptidase Y human COMT homolog 1 phosphoglycerate mutase family sequence orphan
SPAC31G5.08	uroporphyrinogen-III synthase Ups1	SPBC902.05c	isocitrate dehydrogenase (NAD ⁺) subunit 2

SPCC306.08c	malate dehydrogenase	SPAC977.17	MIP water channel (predicted)
SPAC11D3.18c	nicotinic acid plasma membrane transporter (predicted)	SPBC32F12.03c	glutathione peroxidase Gpx1
SPCC594.04c	steroid oxidoreductase superfamily protein	SPBC215.10	haloacid dehalogenase-like hydrolase
SPBC23G7.10c	NADH-dependent flavin oxidoreductase (predicted)	SPAC167.05	Usp (universal stress protein) family protein, implicated in meiotic chromosome segregation
SPBP23A10.11c	conserved fungal protein	SPCC1739.06c	uroporphyrin methyltransferase (predicted)
SPAC27D7.11c	But2 family protein	SPBC8D2.18c	adenosylhomocysteinase (predicted)
SPCC191.11	beta-fructofuranosidase	SPCC16A11.04	sorting nexin Snx12 (predicted)
SPAC688.04c	glutathione S-transferase Gst3	SPAC513.06c	dihydrodiol dehydrogenase (predicted)
SPBC1921.03c	mRNA export receptor Mex67	SPAC6G9.05	coenzyme A diphosphatase (predicted)
SPBC1773.06c	alcohol dehydrogenase (predicted)	SPBC651.03c	GTPase activating protein Gyp10
SPAC922.03	1-aminocyclopropane-1-carboxylate deaminase (predicted)	SPCC645.06c	RhoGEF Rgf3
SPCC1739.01	zf-CCCH type zinc finger protein	SPAC11E3.06	MADS-box transcription factor Map1
SPAC227.13c	mitochondrial iron-sulfur cluster assembly scaffold protein Isu1	SPBC19C2.02	DNA methyltransferase homolog
SPAC25G10.09c	actin cortical patch component, with EF hand and WH2 motif Pan1 (predicted)	SPBC543.07	MAP kinase kinase Pek1
SPBC1718.07c	CCCH tandem zinc finger protein, human	SPAC4D7.02c	glycerophosphoryl diester phosphodiesterase (predicted)
SPCC1322.10	Tristetraprolin homolog Zfs1	SPBC216.03	conserved fungal protein
SPBC25B2.03	conserved fungal protein	SPAC167.06c	sequence orphan
SPAC806.04c	zf-C3HC4 type zinc finger	SPAC19A8.12	mRNA decapping complex subunit Dcp2
SPAC1B9.02c	DUF89 family protein	SPCC757.02c	epimarase (predicted)
SPAC22A12.11	serine/threonine protein kinase Sck1	SPBC13E7.03c	RNA hairpin binding protein (predicted)
SPAC26F1.04c	dihydroxyacetone kinase Dak1	SPCC1902.01	transcription factor Gaf1
SPBPB7E8.02	enoyl-[acyl-carrier protein] reductase	SPBC337.16	phosphatidyl-N-methylethanolamine N-methyltransferase (predicted)
SPBC19G7.13	PSP1 family protein	SPAC5D6.13	Golgi phosphoprotein 3 family
SPBC29A10.16c	DNA binding factor Trf1	SPBC1718.01	F-box/WD repeat protein Pop1
SPAC328.07c	cytochrome b5 (predicted)	SPCC794.07	dihydrolipoamide S-acetyltransferase E2 (predicted)
SPAC23E2.03c	heavy metal ion homeostasis protein (predicted)	SPAC20H4.11c	Rho family GTPase Rho5
SPBC14F5.10c	meiotic suppressor protein Ste7	SPCC1620.02	wtf element Wtf23
SPBC1685.05	ubiquitin-protein ligase E3 (predicted)	SPCC663.09c	short chain dehydrogenase (predicted)
SPBC21C3.18	serine protease (predicted)	SPBC1D7.02c	transcription factor Scr1
SPAC3H1.11	serine/threonine protein kinase Spo4	SPBP4H10.12	conserved protein (fungal and bacterial)
SPAC1F7.07c	transcription factor Hsr1		
SPAC19E9.03	iron permease Fip1		
	cyclin Pas1		

This table lists the down and up-regulated genes of mutant HATs using an Eurogentech microarray.