

Supplementary Table 3: List of 407 genes periodically expressed during the cell cycle

Biological names	Systematic names	Gene description <sup>a</sup>	Cluster <sup>b</sup>	Motifs <sup>c</sup>
<i>ste7</i>	SPAC23E2.03c	Protein required for mating and meiosis	1	Forkhead
<i>sso1; psy1</i>	SPCC825.03c	Syntaxin-like component of the plasma membrane docking/fusion complex	1	Forkhead
<i>slp1</i>	SPAC821.08c	WD-domain protein of the spindle defect checkpoint and APC activator	1	Forkhead
<i>sid2; pld5</i>	SPAC24B11.11c	Protein kinase involved in regulation of cytokinesis	1	Forkhead
<i>ark1; sex1</i>	SPCC330.16; SPCC320.13c	Aurora kinase involved in regulation of mitosis	1	
<i>rum1</i>	SPBC32F12.09	Inhibitor of the Cdc2p cyclin-dependent kinase complex	1	Forkhead, New 2
<i>plo1</i>	SPAC23C11.16	Polo kinase involved in regulation of mitosis and cytokinesis	1	Forkhead, New 3
<i>myo3; myp2</i>	SPAC4A8.05c	Myosin-3 isoform, heavy chain (Type II myosin)	1	
<i>mus81</i>	SPCC4G3.05c	Holliday junction resolvase subunit	1	
<i>msh6</i>	SPCC285.16c	Protein involved in mismatch repair (mutS family)	1	Forkhead
<i>mob1</i>	SPBC428.13c	Protein involved in regulation of cytokinesis	1	Forkhead, MCB 1, New 2
<i>meu29</i>	SPAC25H1.05	Unknown function	1	Ace2, Forkhead
<i>meu16</i>		Non-coding RNA	1	
<i>klp6</i>	SPBC1685.15c; SPBC649.01c	Kinesin motor protein; KIP3 subfamily	1	Forkhead
<i>klp5</i>	SPBC2F12.13	Kinesin motor protein; KIP3 subfamily	1	Forkhead, MCB 1
<i>imp2</i>	SPAC13F4.08c; SPBC11C11.02	Protein required for medial ring disassembly after cytokinesis	1	Forkhead, MCB 1, New 1
<i>etd1</i>	SPAC1006.08	Protein required for cytokinesis	1	Forkhead, MCB 1
<i>chs2</i>	SPBC1734.17; SPBC1709.01	Member of chitin synthase family, involved in cell wall maintenance	1	MCB 1
<i>cdc20; pol2</i>	SPBC25H2.13c	DNA polymerase epsilon catalytic subunit	1	Forkhead, MCB 2
<i>cdc15; rng1</i>	SPAC20G8.05c	Protein involved in cytokinesis	1	Forkhead
<i>bet1</i>	SPAC23C4.13	Member of SNARE domain containing family	1	Forkhead
<i>apc15; apc16</i>	SPBC83.04	Component of APC/cyclosome complex	1	Forkhead
	SPCC757.12	Protein containing an alpha amylase N-terminal catalytic domain	1	New 2
<i>ace2</i>	SPAC6G10.12c	Zinc finger transcription factor	1	Forkhead
	SPAC5D6.02c	Unknown function	1	
	SPCC576.02	Member of aspartate and glutamate racemases family	1	Forkhead
	SPAC30D11.01c; SPAC56F8.01	Member of glycosyl hydrolases family 31, involved in carbohydrate metabolism	1	
	SPBC4F6.12	LIM domain protein, low similarity to paxillin focal adhesion protein that regulates integrin or growth factor-mediated responses	1	
<i>wis3; spo12</i>	SPAC3F10.15c	Protein likely to play role in regulating cell cycle progression, possibly at G2 to M phase transition	1	Forkhead, New 1
	SPBC27.05	Unknown function	1	
	SPAC23H4.19; SPAC1705.03c	Putative cell wall biogenesis protein	1	Forkhead, New 1, New 2
	SPBC19G7.04	Unknown function, possible transcriptional regulator, may contain HMG box	1	Forkhead

	SPAC19B12.02c	Protein with high similarity to 1,3-beta-glucanosyltransferase, member of glycolipid anchored surface protein (GAS1) family	1	Forkhead
	SPBC16G5.15c	Fork head protein type transcription factor	1	Forkhead
<i>rho4</i>	SPAC16A10.04	Rho protein involved in regulation of cytoskeleton, cytokinesis, and cell wall integrity	1	Forkhead, New 1
<i>mde6</i>	SPAC15A10.10	Protein likely to play a role in meiosis or sporulation, requires Mei4p for transcriptional activation	1	Forkhead
	SPAC15A10.09c	Unknown function	1	Forkhead, MCB 1, New 1
<i>mac1</i>	SPAC13G7.04c	Transmembrane protein involved in cell separation	1	Forkhead, New 2
	SPAC11E3.13c	Member of glycolipid anchored surface protein (GAS1) family, possible involvement in cell wall maintenance	1	MCB 1
	SPBC1198.07c	Putative glycosylphosphatidylinositol (GPI)-anchored protein involved in cell wall biosynthesis	1	Forkhead
<i>top1</i>	SPBC1703.14c	DNA topoisomerase I, involved in chromatin organisation	1	Forkhead, New 1
<i>spn2</i>	SPAC821.06	Septin homolog, involved in cell separation	1	
<i>sad1; stal</i>	SPBC16H5.01c; SPBC12D12.01	Spindle pole body associated protein	1	
<i>psc3</i>	SPAC17H9.20; SPAC607.01	Cohesin complex component, required for sister chromatid cohesion and normal mitosis	1	MCB 1
	SPBC32H8.09	Protein containing WD domain G-beta repeat	1	
<i>ndk1</i>	SPAC806.07	Nucleoside diphosphate kinase	1	
<i>dis1</i>	SPCC736.14	Microtubule-associated protein required for chromosome segregation (functions with Klp5p and Klp6p in kinetochore-spindle attachment)	1	
<i>csk1</i>	SPAC1D4.06c	Cyclin-dependent kinase activating kinase (CAK) involved in activating Cdc2p (activity partially redundant with Mcs6p-Mcs2p complex)	1	
<i>crk1; mcs6; mop1</i>	SPBC19F8.07	Cyclin-dependent kinase activating kinase (CAK) involved in activating Cdc2p kinase, putative transcription initiation factor TFIIH subunit	1	
<i>cid13</i>	SPAC821.04c	Cytoplasmic poly(A) polymerase involved in regulation of ribonucleotide reductase (suc22) mRNA, TRF family of nucleotidyltransferases	1	New 1
<i>cdr1; nim1</i>	SPAC644.06c	Protein kinase involved in regulation of mitosis	1	
<i>cdc25; sal2</i>	SPAC24H6.05	Tyrosine phosphatase that activates Cdc2p kinase, involved in G2/M transition and DNA damage checkpoints	1	
<i>cdc13</i>	SPAC19G10.09C; SPBC582.03	Cyclin that promotes entry into mitosis from G2 phase, forms complex with Cdc2	1	
<i>aph1</i>	SPCC4G3.02	Diadenosine tetraphosphatase, catalyzes hydrolysis of dinucleoside polyphosphate compounds	1	
	SPBPB2B2.09c	Member of the ketopantoate reductase PanE or ApbA family, involved in thiamine biosynthesis	1	
<i>rps602; rps6</i>	SPAPB1E7.12	Protein with high similarity to ribosomal S6 proteins	1	
	SPAC824.04	Protein containing three WD domains (WD-40 repeat)	1	
	SPAP8A3.11c	Member of GTP1 or OBG family of GTP-binding proteins, similarity to developmentally regulated protein with possible role in neurogenesis	1	
	SPAP27G11.08c	Unknown function	1	Forkhead

	SPAC9.11	Unknown function	1	
	SPBC646.06c	Member of glycosyl hydrolase family 71, putative glucanase	1	Forkhead, New 2
	SPAC589.09	Protein containing a CRAL-TRIO domain, putative phosphatidylinositol metabolism	1	
	SPAC589.02c	Component of mediator subcomplex that may function in negative regulation of transcription	1	
	SPCC4G3.06c	Unknown function, possible mitochondrial ribosomal protein of large subunit	1	Forkhead
	SPBC4F6.11c	Unknown function	1	MCB 1
	SPBC4F6.05c	Member of legume-like lectin family	1	
	SPBC428.12c	Putative RNA binding protein	1	
	SPBC1306.02; SPBC4.08	Protein containing eight WD domains (WD-40 repeat), possible role in activated transcription by RNA polymerase II	1	Forkhead
	SPBC3H7.13	Member of Forkhead associated (FHA) domain family, similarity to <i>S. pombe</i> spindle checkpoint protein Dma1p	1	
<i>pmc2</i>	SPAC2F7.04	Mediator complex component, involved in regulating RNA polymerase II activity	1	
	SPBC27B12.06	Protein with possible role in glycosylphosphatidylinositol biosynthesis	1	Forkhead
	SPBC26H8.13c	Unknown function	1	
	SPAC24H6.01c; SPAPB21F2.01	Unknown function, similarity to putative glycerol transporter involved in phospholipid biosynthesis	1	Forkhead, MCB 1
	SPAC24C9.05c	Unknown function	1	
	SPAC23G3.04	Unknown function	1	New 3
<i>spn7; mde8</i>	SPBC21.08c; SPBC19F8.01c	Septin homolog, involved in cell separation	1	Forkhead
	SPBC19C2.10	Protein containing an Src homology 3 (SH3) domain, putative actin binding	1	
<i>spp2; pri2</i>	SPBC17D11.06	DNA primase, large (non-catalytic) subunit	1	
	SPBC1709.13c	Member of SET domain containing family	1	
	SPAC1687.19c	Probable tRNA-guanine transglycosylase	1	Forkhead
	SPAC1687.17c	Member of the Der1-like family, putative transmembrane protein with signal peptide	1	Forkhead
	SPAC1687.10	Unknown function	1	
	SPBC1685.03	Member of signal peptidases type I family, which cleave signal peptides from secreted proteins	1	
	SPAC13G7.10	Protein with two Myb-like DNA-binding domains	1	Forkhead
	SPAC13G6.03	Member of type I phosphodiesterase or nucleotide pyrophosphatase family	1	
	SPAC13C5.05c	Member of phosphoglucomutase or phosphomannomutase C-terminal domain containing family	1	
<i>pds5</i>	SPAC110.02	Protein required for maintenance of sister chromatid cohesion	1	MCB 1
<i>mik1</i>	<b>SPBC660.14</b>	<b>Protein kinase that inhibits Cdc2p kinase</b>	<b>2</b>	<b>Forkhead, MCB 1, MCB 2</b>
<i>pol1; swi7</i>	<b>SPAC3H5.06c</b>	<b>DNA polymerase alpha catalytic subunit</b>	<b>2</b>	<b>Forkhead, Histone</b>
	<b>SPAC644.05c</b>	<b>Protein similar to dUTP pyrophosphatase, which maintains dUTP at low levels to prevent misincorporation into DNA</b>	<b>2</b>	<b>MCB 1, MCB 2</b>

	SPAC1071.09c	Protein containing a DnaJ domain, which mediates interaction with heat shock proteins	2	
<i>rhp51; rad51</i>	SPAC644.14C	Required for DNA repair and meiotic recombination	2	MCB 1
<i>rep2</i>	SPBC2F12.11c	Zinc finger transcriptional activator, MBF transcriptional complex	2	
	SPBC1289.01c; SPBC1539.11c	Unknown function, putative involvement in chitin biosynthesis	2	MCB 1
	SPCC1322.04	Putative UTP-glucose-1-phosphate uridylyltransferase	2	Forkhead
	SPCC1322.10	Unknown function, similar to cell-surface proteins and proteoglycans	2	Forkhead
	SPAC14C4.09	Unknown function, putative glucanase	2	
	SPBC16A3.07c	Unknown function	2	MCB 1, MCB 2
	SPBC1709.12	Unknown function	2	Ace2
	SPAC17H9.18c	Unknown function	2	Forkhead
	SPCC74.07c; SPCC18.01c	Member of SUN family, contains predicted N-terminal signal sequence	2	Ace2, Forkhead
	SPCC18.02	Protein with similarity to synaptic vesicle-associated acetylcholine transporter	2	
	SPAC23A1.01c; SPAC19G12.16c	Unknown function, similarity to podocalyxin like, a transmembrane sialomucin important for lymphocyte adhesion and homing	2	Ace2, Forkhead, MCB 1
	SPBC21B10.13c; SPAC21B10.13c	Homeobox domain (homeodomain) protein, putative transcription factor	2	
	SPAC23H4.01c; SPAP27G11.01	Unknown function, contains a pleckstrin homology (PH) domain	2	Ace2, Forkhead
	SPBC27.04	Unknown function	2	New 1
<i>ams2</i>	SPCC4F11.01; SPCC290.04	Protein that binds binds chromatin at centromere and is involved in chromosome segregation	2	MCB 1
	SPBC2A9.07c	Unknown function	2	
	SPAC2E1P5.03	Protein containing a DnaJ domain, which mediates interaction with heat shock proteins	2	Ace2, MCB 1
	SPBC31F10.17c	Unknown function	2	Forkhead, New 1
	SPBC32F12.10	Protein with phosphoglucomutase or phosphomannomutase C-terminal domain	2	Forkhead
	SPBC3E7.12c	Unknown function, possible role in regulation of chitin synthase	2	Ace2, MCB 1
<i>rgf3</i>	SPCC645.06c	Protein containing a pleckstrin homology (PH) and a RhoGEF (GTPase exchange factor) domain	2	
	SPBC651.04	Unknown function	2	Forkhead
<i>mrc1; huc1</i>	SPAC694.06c	Protein required for DNA replication checkpoint	2	MCB 1, MCB 2
	SPBC83.18c	Protein containing a C2 domain, which may be involved in calcium-dependent phospholipid binding	2	Ace2
	SPCC965.14c	Member of cytidine and deoxycytidylate deaminase zinc-binding region family	2	Forkhead
<i>cdc18</i>	SPBC14C8.07c	Protein that couples cell cycle signals to DNA replication machinery and induces replication	2	MCB 1, MCB 2
<i>cdc22</i>	SPAC1F7.05	Ribonucleoside-diphosphate reductase large chain, likely required for initiation of DNA replication	2	MCB 1, MCB 2
<i>cdm1</i>	SPBC12D12.02c	DNA polymerase delta subunit	2	Forkhead, New 2

<i>cdt1</i>	SPBC428.18	Protein that coordinates completion of S phase with onset of mitosis	2	MCB 1, MCB 2
<i>cdt2</i>	SPAC17H9.19c	Protein required for DNA replication	2	MCB 1, MCB 2
<i>cig2; cyc17</i>	SPAPB2B4.03	Major G1/S-phase cyclin, promotes onset of S phase	2	Forkhead
<i>cut2</i>	SPBC1815.02c; SPBC14C8.01c	Securin; required for sister chromatid separation	2	Ace2, Forkhead
<i>dfp1; him1; rad35</i>	SPCC550.13	Regulatory subunit of the Hsk1p-Dfp1p kinase complex involved in S phase initiation	2	Forkhead, MCB 1
<i>eng1</i>	SPAC821.09	Endo-beta-1,3-glucanase required for cell separation	2	Forkhead
<i>exg1</i>	SPBC1105.05	Putative exo-beta-1,3-glucanase	2	New 2
<i>fin1</i>	SPAC19E9.02	NimA family kinase; regulates spindle formation and recruitment of Plo1p to SPB, promotes chromatin condensation	2	Forkhead
<i>kfp8</i>	SPAC144.14	Protein containing a kinesin motor domain	2	
<i>meu19</i>		Non-coding RNA	2	
	SPAP14E8.02	Unknown function, similar to <i>S. cerevisiae TOS4</i>	2	MCB 1, MCB 2
<i>par2; pbp2</i>	SPAC6F12.12	Protein phosphatase PP2A, B' regulatory subunit, required for cytokinesis, morphogenesis, and stress tolerance	2	Ace2
<i>rpc17</i>	SPAPB1E7.10	Unknown function	2	
	SPBPB2B2.13	Protein similar to galactokinase, which catalyzes first step in galactose metabolism	2	
	SPAPJ760.03c	Unknown function	2	Ace2, Forkhead
<i>mid2</i>	SPAPYUG7.03c	Protein required for septin function and stability during cytokinesis	2	Ace2, MCB 1
<i>rad21</i>	SPCC338.17c	Cohesin complex subunit, double-strand-break repair protein	2	
<i>rph1; pfh1; pif1</i>	SPBC887.14c	ATP-dependent DNA helicase involved in telomere maintenance, DNA replication, and DNA repair	2	
<i>psm3; smc3</i>	SPAC10F6.09c	Cohesin complex subunit, involved in sister chromatid cohesion and progression through mitosis	2	MCB 2
<i>ste9; srw1</i>	SPAC144.13c	Protein required for mating and sporulation, may regulate anaphase promoting complex	2	
<i>ssb1; rad11</i>	SPBC660.13c	Single-stranded DNA-binding protein subunit, required for DNA replication	2	MCB 1, MCB 2, New 1
<i>ulp1</i>	SPBC19G7.09	Ubl2p-specific protease	2	Forkhead, MCB 1
	SPAC343.20	Unknown function	2	
	SPCC63.13	Protein containing a DnaJ domain, which mediates interaction with heat shock proteins	2	
	SPBC839.02; SPBC24E9.02	Unknown function, contains an N-terminal arrestin (or S-antigen) domain, possibly fungal specific	2	
<i>cdc10</i>	SPBC336.12c	Component of MBF transcriptional activation complex involved in control of START	2	MCB 2
<i>cdc4</i>	SPAP8A3.08	EF-hand component of actomyosin contractile ring, required for cytokinesis	2	Ace2, New 3
<i>bgs4; cwgl</i>	SPCC1840.02c	Putative 1,3-beta-glucan synthase component, cell wall synthesis	2	
	SPAC11E3.10	Unknown function, member of VanZ-like family	2	
	SPAC22F8.04	Unknown function	2	MCB 1
	SPAC22G7.02	Unknown function	2	Ace2, New 3

	SPAC27D7.12c	Unknown function	2	MCB 1
	SPBC2A9.13	Unknown function	2	Ace2
	SPAC2F7.14c	Protein similar to 3'-5' exoribonuclease required for 3' processing of ribosomal 5.8S rRNA and component of 3'-5' exosome complex	2	MCB 1
	SPBC32C12.03c	Protein with protein kinase domain, similar to <i>S. pombe</i> Kin1p, a putative serine-threonine protein kinase involved in regulating cell polarity	2	Forkhead, MCB 2
	SPCC4F11.03c	Unknown function	2	MCB 1
	SPAC4H3.11c	Unknown function	2	Histone
	SPCC553.12c; SPCC794.13	Unknown functionl	2	MCB 1
	SPCC794.15	Unknown function	2	
	SPBC9B6.07; SPAC9B6.07	Unknown function, possible role in maturation of 25S rRNA	2	
<i>chs5</i>	SPAC6G9.12	Protein with fibronectin domain involved in cell surface binding, and BRCT domain found in checkpoint proteins, similar to chitin synthase	2	Forkhead
<i>cnp1; sim2</i>	SPBC1105.17	CENP-A-like protein, histone H3 variant specific to inner centromeres and required for chromosome segregation	2	Forkhead, MCB 2
<i>esol; ecol</i>	SPBC16A3.11	DNA polymerase eta, involved in sister chromatid cohesion	2	Forkhead, MCB 1
	SPBPB21E7.10; SPAPB21E7.10	Unknown function	2	
<i>pob1</i>	SPBC1289.04c	Protein required for cell polarity and cell separation	2	Ace2
	<b>SPCC1795.10c</b>	<b>Unknown function</b>	<b>3</b>	<b>Ace2</b>
	<b>SPBC17G9.06c</b>	<b>Unknown function</b>	<b>3</b>	<b>Ace2</b>
	<b>SPBC19C7.04c</b>	<b>Unknown function</b>	<b>3</b>	
	<b>SPCC338.12</b>	<b>Unknown function</b>	<b>3</b>	<b>Ace2, MCB 1, New 3</b>
<i>hht1</i>	SPAC1834.04	<b>Histone H3.1</b>	<b>3</b>	<b>Histone, MCB 1</b>
<i>hht2</i>	SPBC8D2.04	<b>Histone H3.2</b>	<b>3</b>	<b>Histone</b>
<i>hht3; clo5</i>	SPBC1105.11c	<b>Histone H3.3</b>	<b>3</b>	<b>Histone</b>
<i>hhf1; ams1</i>	SPAC1834.03c	<b>Histone H4.1</b>	<b>3</b>	<b>Histone, MCB 1</b>
<i>hhf2; ams3</i>	SPBC8D2.03c	<b>Protein similar to histone H4.1, contains a core histone domain</b>	<b>3</b>	<b>Histone</b>
<i>hhf3; ams4</i>	SPBC1105.12	<b>Histone 4.3</b>	<b>3</b>	<b>Histone</b>
<i>hta1</i>	SPCC622.08c	<b>Histone H2A-alpha</b>	<b>3</b>	<b>Histone, MCB 1</b>
<i>hta2</i>	SPAC19G12.06c	<b>Histone H2A-beta</b>	<b>3</b>	<b>Histone</b>
<i>htb1</i>	SPCC622.09	<b>Histone H2B-alpha</b>	<b>3</b>	<b>Histone, MCB 1</b>
<i>pht1</i>	SPBC11B10.10c	<b>Histone H2A variant</b>	<b>3</b>	
	SPBPJ4664.02	<b>Unknown function, possible cell surface glycoprotein</b>	<b>3</b>	
<i>prl36</i>		<b>Non coding RNA</b>	<b>3</b>	
<i>sap1</i>	SPCC1672.02c	<b>DNA-binding protein required for growth and mating type switching</b>	<b>3</b>	
<i>sod2</i>	SPAC977.10	<b>Sodium/proton antiporter</b>	<b>3</b>	
	SPAC1F7.03	Unknown function	3	
	SPCC306.08c	Malate dehydrogenase, mitochondrial precursor	3	

	SPAC1142.02c; SPAC17G6.19c	Unknown function, contains three TPR domains	3	Forkhead
	SPBC1105.14	Protein containing two zinc finger DNA binding domains, possible role in proteasome regulation	3	
	SPAC12G12.07c	Unknown function, domain similar to integrin- $\alpha$ cytoplasmic region	3	
	SPBC1348.10c; SPAC1348.10c	Member of lysophospholipase catalytic domain family, putative lysophospholipase precursor	3	MCB 1
	SPAC806.09c; SPAC1639.01c	SUR4 family protein, putative fatty acid elongation protein	3	Ace2
	SPBC16G5.05c	Protein containing MSP domain, possible type II integral ER membrane protein involved in inositol regulation	3	
	SPCC1906.01	Mannose-1-phosphate guanyltransferase	3	
	SPBC19G7.16	Member of IWS1 C terminus containing family, possible roles in transcription regulation and transcription elongation	3	New 3
	SPBC21B10.09; SPAC21B10.09	Protein similar to acetyl-CoA transporter	3	
	SPAC22G7.01c; SPAPJ696.03c	Protein containing metallopeptidase family M24 domain, similar to x-prolyl aminopeptidase	3	
	SPBPJ758.01; SPBC23E6.01c	Protein with RNA recognition motifs, similar to U1 snRNA-associated protein that suppresses splicing defects and mediates recombination	3	
	SPBC28F2.11	Protein with a high mobility HMG-box domain	3	
	SPBC31F10.16	Unknown function	3	Ace2
	SPBC337.20; SPBC1734.04	Protein similar to cis Golgi protein, putative involvement in protein glycosylation in the golgi	3	MCB 1
	SPAC343.13	Member of PET112 family, may be involved in mitochondrial gene translation	3	
	SPAC631.01c	Member of F-actin capping protein beta subunit family	3	
	SPAC6F6.13c	Unknown function, DUF726 domain	3	Ace2
	SPBC83.11	Unknown function, possible role in binding phosphatidylinositol	3	
	SPAC977.09c	Member of lysophospholipase catalytic domain containing family, similar to phospholipase B, which deacylates phosphatidylinositol	3	MCB 1
<i>cam1</i>	SPAC3A12.14	Calmodulin, essential calcium-binding regulatory protein	3	Histone
<i>csx2</i>	SPBC17G9.08c	Protein with putative arf GTPase activation domain and pleckstrin homology domain, similar to GTPase activating protein for ARF	3	Ace2
<i>cyp4</i>	SPBP8B7.25	Protein similar to cyclophilin B, a peptidyl prolyl cis-trans isomerase	3	
<i>pas1</i>	SPAC57A10.01; SPAC19E9.03	Cyclin involved in regulation of mating, interacts with Pef1p and Cdc2p kinases	3	
<i>php5</i>	SPBC3B8.02	CCAAT-binding factor subunit, required for growth on non-fermentable carbon sources	3	
<i>rad25</i>	SPAC17A2.13c	14-3-3- protein involved in DNA damage checkpoint control	3	MCB 1
<i>rer1</i>	SPAC22E12.05c	Protein similar to component of COPII-coated vesicles, member of retention of ER proteins family	3	
<b><i>spd1</i></b>	<b>SPAC29B12.03</b>	<b>Negative regulator of S phase</b>	<b>4</b>	
<b><i>rds1</i></b>	<b>SPAC343.12</b>	<b>Stress response protein</b>	<b>4</b>	
<b><i>psu1</i></b>	<b>SPAC1002.13c</b>	<b>Protein required for cell wall integrity, member of SUN protein family</b>	<b>4</b>	

	<b>SPAC13G6.10c</b>	<b>Unknown function</b>	<b>4</b>	<b>MCB 1</b>
	<b>SPAP7G5.06</b>	<b>Protein similar to amino acid permease, a proton symport transporter for all naturally-occurring L-amino acids</b>	<b>4</b>	
	<b>SPAC5H10.06c</b>	<b>Protein similar to alcohol dehydrogenase IV, which is involved in carbohydrate metabolism</b>	<b>4</b>	
	<b>SPAC1039.02</b>	<b>Unknown function, possible membrane protein</b>	<b>4</b>	
	SPAC1039.01	Member of amino acid permease family of membrane transporters	4	
	SPBC119.10	Asparagine synthetase	4	New 3
	SPCC1235.11	Unknown function, member of UPF0041 uncharacterized protein family	4	
	SPCC126.09	Member of ZIP zinc transporter family, possible metal transporter and vacuolar membrane protein	4	
	SPBC1271.07c	Protein containing acetyltransferase (GNAT) domain	4	Forkhead
	SPBC1271.08c	Unknown function	4	
	SPAC139.02c	Probable mitochondrial oxaloacetate transporter	4	
	SPBC13G1.09	Member of bystin family, possible role in 35S pre-rRNA processing into 18S rRNA	4	
	SPCC1494.06c	Member of the DEAD or DEAH box ATP-dependent RNA helicase, possible role in rRNA processing	4	
	SPCC1682.08c	Protein containing six Pumilio-family RNA binding domains, possible role in mRNA metabolism	4	
	SPBC16D10.06	Member of ZIP zinc transporter family	4	
	SPCC1739.01; SPCC1906.05	Member of zinc finger family, which bind DNA or RNA	4	
	SPCC1795.12c	Unknown function	4	Forkhead
	SPBC17D1.06; SPCC17D1.06	Member of the DEAD or DEAH box ATP-dependent RNA helicase	4	Forkhead
<i>pof6</i>	SPCC18.04	Protein involved in cell division, contains F-box domain	4	New 3
	SPCC18.05c	Protein containing nine WD domains (WD-40 repeat), possible membrane receptor	4	New 3
	SPCC1827.06c	Aspartate semialdehyde dehydrogenase	4	Forkhead
<i>rrn3</i>	SPAC18G6.11c	Protein involved in initiation of transcription of rDNA promoter	4	
	SPAC1F12.05	Unknown function	4	
	SPAC212.08c	Telomeric protein of unknown function, possibly <i>S. pombe</i> specific	4	
	SPAC212.10	Pseudogene; malic acid transport protein; truncated C at terminal	4	
	SPAC24B11.10c	Unknown function, possible protoplast regeneration protein that stimulates chitin synthase III activity	4	
	SPBC25B2.08	Unknown function	4	Forkhead
	SPAC2C4.18; SPAC25G10.01	Protein with RNA recognition motif, possible splicing factor that activates pre-mRNA splicing	4	
	SPBC29A3.01	Member of P-type ATPase, similar to copper-transporting ATPase	4	
	SPAC2C4.11c	Unknown function	4	
	SPAC323.07c	Member of the MatE family of integral membrane proteins	4	New 3



	SPBC365.16	Unknown function	4	
	SPBC3B8.06	Unknown function	4	
	SPCC548.06c	Protein similar to putative H <sup>+</sup> -glucose symporter involved in glucose transport	4	New 3
<i>arg5</i>	SPBC56F2.09c	Protein similar to amidotransferase small subunit of carbamoylphosphate synthetase	4	
	SPCC594.04c	Unknown function	4	
<i>gmh2</i>	SPAC5H10.13c	Protein similar to alpha-1,2-galactosyltransferase	4	MCB 1
	SPAC6B12.07c	Protein with zinc finger and N-terminal domain that may be involved in G protein associated signal transduction	4	
	SPAC6G9.02c	Protein with five Pumilio-family (Puf) RNA binding domains	4	
	SPCC757.11c	Unknown function	4	
<i>ibp1</i>	SPBC24E9.07; SPBC839.07	Protein phosphatase, rhodanese-like domain	4	New 3
	SPAC869.02c	Member of globin family of oxygen transporters, similar to flavohemoglobin that protects from stress	4	
	SPBC8E4.03	Protein with arginase family domain, similar to agmatine ureohydrolase	4	
	SPAC9.10	Member of amino acid permease family of membrane transporters	4	
<i>cig1</i>	SPCC645.01; SPCC4E9.02	B-type cyclin involved in G1 to S phase transition	4	Forkhead, MCB 1
<i>csx1</i>	SPAC17A2.09c	Protein containing three RNA recognition motifs, similar to U1 snRNA-associated protein	4	
<i>dak1; dak2</i>	SPAC977.16c	Dihydroxyacetone kinase, isoenzyme II	4	New 3
<i>gpd2</i>	SPAC23D3.04c	Glycerol-3-phosphate dehydrogenase	4	New 3
<i>mae1</i>	SPAPB8E5.03	Malate transporter	4	
	SPCP1E11.08	Protein similar to nuclear protein involved in ribosome biogenesis	4	
	SPBP8B7.15c	Protein similar to Polyadenylation Factor I complex component required for mRNA cleavage and polyadenylation	4	
<i>pac2</i>	SPAC31G5.11	Regulatory protein involved in sexual development via cAMP-independent pathway	4	
	SPAPB24D3.09c	Protein with ABC transporter domains, similar to brefeldin A resistance protein involved in multidrug resistance	4	
	SPBPB2B2.06c	Protein with calcineurin-like phosphoesterase domain	4	
	SPBP7E8.01; SPBPB7E8.01	Unknown function	4	
<i>TF2-1</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-10</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-2</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-3; TF2-4</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-5</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-6</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-7</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-8</i>		Retrotransposable element; tf2-type transposon	4	
<i>TF2-9</i>		Retrotransposable element; tf2-type transposon	4	

<i>bgl2</i>	SPAC26H5.08c	Protein similar to beta-glucosidase, a cell wall endo-beta-1,3-glucanase	4	
	SPBC11C11.05	Member of yeast cell wall synthesis protein KRE9 or KNH1 family	4	Forkhead
	SPAC11D3.04c	Unknown functionhypothetical protein; sequence orphan; shows expression on microarray	4	
	SPBC1271.10c	Protein similar to membrane transporter	4	
	SPBC12C2.12c; SPBC21D10.03c	Protein similar to glyoxalase I, contains glyoxalase, bleomycin resistance protein or dioxygenase family domains	4	
	SPBC1347.09	Unknown function	4	
	SPAC1486.09	Protein similar to protein that functions in 20S proteasome maturation and 26S proteasome assembly	4	Forkhead
	SPCC1494.07	Unknown function	4	New 3
	SPCC1494.08c	Unknown function	4	New 2
	SPAC14C4.12c	Unknown function, contains SWIRM domain	4	
	SPAC1527.03	Unknown function, contains La domain	4	
	SPAC16C9.03	Possible role in nuclear export of 60S ribosomal subunits	4	
	SPBC16D10.02	Putative DNA-(amino)methyltransferase	4	New 3
	SPBC1711.07	Protein containing three WD domains (WD-40 repeat), possible role in ribosome assembly	4	MCB 1
	SPAC17A2.06c	Unknown function, similar to protein involved in vacuolar sorting	4	
	SPBC17D11.08	Unknown function, four WD domains (WD-40 repeats)	4	
	SPCC1827.05c	Protein with RNA recognition motif, similar to nucleolar protein	4	
	SPCC18B5.07c; SPBC18B5.07c	Member of RanBP1 domain containing family, similar to nuclear pore protein (nucleoporin)	4	
	SPCC1919.05	Protein containing nine TPR domains, similar to superkiller 3, which protects cells from RNA viruses	4	
	SPAC19B12.11c	Unknown function, similar to putative nuclear pore protein involved in bud site selection	4	Forkhead, New 1
	SPAC19G12.09	Protein with aldo-keto reductase family domain, similar to aldehyde reductase	4	
	SPAC1B3.08	Member of PCI (proteasome, COP9-complex and eIF3) or PINT (Proteasome, Int-6, Nip-1 and TRIP-15) domain family	4	MCB 1
	SPAC823.03; SPAC1E11.03	Protein with kinase domain, similar to CDC-like kinase 2, which may regulate mRNA splicing	4	
	SPBC215.13	Unknown function, similar to protein involved in vesicle formation in endoplasmic reticulum	4	MCB 1
	SPAC222.09	Unknown function	4	
	SPAC23H4.15	Member of DUF663 protein of unknown function family, possible role in rRNA processing and 40S ribosomal subunit biogenesis	4	Forkhead
	SPBC24C6.10c	Unknown function	4	
	SPBC19F5.05c; SPBC25D12.01c	Unknown function	4	
	SPAC27D7.09c	Unknown function	4	

	SPAC26F1.07	Protein similar to aldehyde reductase that reduces carbonyl-containing substrates and metabolizes xenobiotics	4	
	SPAC27D7.11c	Unknown function	4	New 3
	SPAC27F1.06c	Protein with FKBP-type peptidyl-prolyl cis-trans isomerase domain	4	Ace2
	SPBC29A10.08	Glycolipid-anchored surface protein precursor	4	
	SPAC29B12.08	Unknown function	4	MCB 1
	SPAC31A2.07c	Putative RNA helicase, possible role in ribosome biogenesis	4	
	SPAC31G5.02	Possible role in role cell wall organization and biogenesis	4	
	SPCC31H12.01; SPCC1183.11	Member of mechanosensitive ion channel family	4	
	SPAC328.05	Protein containing three RNA recognition motifs, possible role in protein-nucleus export	4	Forkhead
<i>gps2</i>	SPBC365.14c	Putative UDP-glucose 4-epimerase involved in UDP-galactose synthesis and protein glycosylation	4	
	SPAC3G9.05	Unknown function, similar to cell polarity and cell fusion protein	4	
	SPBC405.02c; SPBC4C3.01	Unknown function	4	Forkhead
	SPCC417.05c	Unknown function, similar to protein that stimulates chitin synthase III activity	4	
	SPBC428.10	Unknown function, similar to cell surface flocculin required for invasive and pseudohyphal growth	4	New 3
	SPAC521.02	Unknown function	4	
<i>sst1</i>	SPAC521.04c	Member of sodium or calcium exchanger protein family of membrane transporters	4	
	SPCC553.10	Unknown function	4	Forkhead, MCB 1
	SPAC57A10.09c	Protein similar to DNA-binding and DNA-bending protein involved in transcriptional activation, contains HMG family domain	4	
	SPAC637.13c	Unknown function, pleckstrin homology (PH) domain	4	
	SPBC651.01c; SPBC725.18c	Unknown function, similar to a putative nucleolar GTP-binding protein required for ribosomal subunit biogenesis	4	Forkhead
	SPBC660.06	Unknown function	4	
	SPAC688.11	Protein with actin binding domains, similar to talin-like protein required for hyphal growth	4	
	SPCC794.03	Member of amino acid permease family of membrane transporters	4	
	SPCC794.11c	Protein with actin binding domain, possible role in formation of clathrin coats at the Golgi and endosomes	4	MCB 1
	SPAC821.03c	Unknown function	4	
	SPAC9.07c	Putative GTP-binding protein	4	
	SPAC9E9.04	Unknown function, contains predicted N-term signal sequence and transmembrane helices	4	Forkhead
<i>cbh2</i>	SPBC14F5.12c	DNA binding protein, possible role in chromosome segregation, role in histone tail modifications at centromere	4	
<i>cdc2; swo2</i>	SPBC11B10.09	Cyclin-dependent kinase, regulates cell cycle transitions G1/S and G2/M	4	
<i>cds1</i>	SPCC18B5.11c	Protein kinase involved in unreplicated DNA checkpoint response	4	Forkhead

	SPACUNK4.15	Unknown function	4	Ace2
<i>dim1</i>	SPBC336.02	Protein similar to ribosomal RNA adenine dimethylases	4	
<i>git3</i>	SPCC1753.02c	Protein involved in cAMP pathway and required for growth under high osmotic stress	4	
<i>myo52; myp5; myo4</i>	SPCC1919.10c	Class V myosin, involved in polarized cell growth and vacuole fusion	4	Forkhead, MCB 1
	SPAC31G5.12c	Unknown function, similar to negative effector of RNA polymerase III	4	
<i>nrd1</i>	SPAC2F7.11	Protein containing four RNA recognition motifs	4	
	SPAPB15E9.01c; SPAPB18E9.06c	Unknown function	4	
	SPAPB18E9.03c	Unknown function	4	
	SPAPB18E9.05c	Unknown function	4	
<i>pcr1; mts2</i>	SPAC21E11.03c	Transcription factor that plays roles in mating, meiosis and stress response	4	
<i>pim1; ptr2; dcd1</i>	SPBC557.03c	GTP-exchange factor (GEF) for Spi1p, required for nucleo-cytoplasmic transport, microtubule function and cytokinesis	4	
<i>pkal; git6</i>	SPBC106.10	Catalytic subunit of the cAMP-dependent protein kinase	4	
<i>rdp1</i>	SPAC1B1.01	Protein containing a C2H2 type zinc finger domain, binds to DNA damage response elements	4	Ace2
<i>ssp1</i>	SPCC297.03	Protein kinase that mediates rapid osmotic stress response at cell surface	4	
<i>thi1; ntf1</i>	SPAC6G10.01; SPAC1486.10	Regulatory protein for thiamine repressible genes, required for synthesis of thiazole moiety of thiamine	4	MCB 1
	SPAC6F12.03c	Member of SNARE domain containing family	4	
<i>top2</i>	SPBC1A4.03c	DNA topoisomerase II	4	MCB 1
<i>trx1; trx2</i>	SPAC7D4.07c	Putative thioredoxin involved in response to heavy metals	4	Forkhead
<i>uvi15</i>	SPBC649.04	Protein essential for stationary phase survival, induced by stress	4	New 2
<i>vip1</i>	SPAC10F6.06	Protein containing an RNA recognition motif	4	
	SPCC320.02c; SPCC1235.01	Unknown function	N(1)	Forkhead, Histone
<i>prl3</i>		Non-coding RNA	N(1)	
<b><i>hsk1</i></b>	<b>SPBC776.12c</b>	<b>Protein kinase of the Hsk1p-Dfp1p complex involved in S phase initiation</b>	<b>N(1,2)</b>	
	<b>SPCC338.08</b>	<b>Unknown function</b>	<b>N(1,2)</b>	
<b><i>mfm2</i></b>	<b>SPAC513.03</b>	<b>Precursor polypeptide for mating pheromone M factor produced by h- cells</b>	<b>N(1,2)</b>	
<i>spk1</i>	SPAC31G5.09c	MAP kinase (MAPK) acting in the mating and sporulation pathways	N(1,2)	
<i>byr2; ste8</i>	SPBC2F12.01; SPBC1D7.05	MAP kinase kinase kinase acting upstream of MAPKK Byr1p and MAP kinase Spk1p in pheromone signaling pathway	N(1,2)	
	SPAC1006.06	Protein with RhoGEF domain, similar to Rho GDP-GTP exchange factor activated by cell wall defects	N(1,2)	
	SPAC12G12.06c	Probable RNA 3'-terminal phosphate cyclase	N(1,2)	
	SPCC1322.09	Unknown function	N(1,2)	MCB 2
	SPAC14C4.05c	Unknown function	N(1,2)	Forkhead, MCB 2

	SPBC1683.07	Protein similar to alpha-glucosidase	N(1,2)	Ace2
<i>hri1</i>	SPAC20G4.03c	Translation initiation factor 2 alpha kinase, may play role in negative regulation of eIF2alpha in response to stress	N(1,2)	
	SPBC365.01	Unknown function, CRAL-TRIO domain and a CRAL or TRIO N terminus domain	N(1,2)	
<i>din1</i>	SPAC19D5.06c	Unknown function	N(1,2)	New 2
<i>mei2</i>	SPAC27D7.03c	RNA-binding protein involved in meiosis	N(1,2)	
<i>spm1; pmk1</i>	SPBC119.08	MAP kinase involved in maintenance of cell wall integrity	N(1,2)	Forkhead
	SPCC965.06	Protein similar to potassium voltage-gated channel	N(1,2,3)	New 1
<i>cnd2</i>	SPCC306.03c	Subunit of condensin complex involved in chromosome condensation	N(1,3)	
<i>isp6; prb1</i>	SPAC4A8.04	Putative subtilase-type proteinase, role in sexual differentiation+E49	N(1,3,4)	
	<b>SPAC869.05c</b>	<b>Member of sulfate transporter family, similar to sulfate permease</b>	<b>N(1,4)</b>	
	SPAC1002.17c	Protein with phosphoribosyl transferase domain, possible role in pyrimidine salvage pathway	N(1,4)	
	SPAC1610.04	Unknown function	N(1,4)	
	SPCC16C4.06c	Protein with tRNA pseudouridine synthase domains	N(1,4)	New 1
<i>sim4</i>	SPBC18E5.03c	Centromere-associated protein required for chromosome segregation and silencing	N(1,4)	
	SPBC19G7.07c	Member of PPR repeat containing family	N(1,4)	
	SPCC330.15c; SPCC320.14	Member of pyridoxal phosphate dependent enzyme family, similar to racemase that catalyzes the racemisation of L-serine to D-serine	N(1,4)	
	SPBC428.17c	Unknown function	N(1,4)	
	<b>SPCC553.07c</b>	<b>Member of impB, mucB or samB family, possible role as translesion DNA repair polymerase</b>	<b>N(2,3)</b>	
	<b>SPBC800.11</b>	<b>Protein with inosine-uridine preferring nucleoside hydrolase domain</b>	<b>N(2,3)</b>	
	<b>SPAC750.05c</b>	<b>Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC1348.02 and SPBPB2B2.19c</b>	<b>N(2,3)</b>	
	<b>SPBC1348.02; SPAC1348.02</b>	<b>Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC750.05C and SPBPB2B2.19c</b>	<b>N(2,3)</b>	
	<b>SPBPB2B2.19c</b>	<b>Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC1348.02 and SPAC750.05C</b>	<b>N(2,3)</b>	<b>Histone</b>
	<b>SPAC977.01</b>	<b>Telomeric protein of unknown function, highly similar to S. pombe SPAC1348.02, SPAC750.05C and SPBPB2B2.19c</b>	<b>N(2,3)</b>	<b>Forkhead</b>
	<b>SPBC409.22c; SPBC1306.01c</b>	<b>Protein with elongation factor Tu GTP binding domain, similar to mitochondrial translation elongation factor G</b>	<b>N(2,3)</b>	
	SPAC17G6.03	Protein with calcineurin-like phosphoesterase domain	N(2,3)	
	SPBC18E5.07	Unknown function	N(2,3)	New 2
	SPBC21B10.07; SPAC21B10.07	Protein with glycosyl hydrolase family 16 domain	N(2,3)	
	SPAC2E1P3.04	Protein with possible role in detoxifying extracellular amines and nitrogen metabolism	N(2,3)	Ace2, New 3
	SPAC29A4.05	Protein similar to calmodulin 1, which regulates the calcium-dependent activity of enzymes including phosphatases	N(2,4)	

	<b>SPAC631.02</b>	<b>Protein with two bromodomains, which interact with acetylated lysine</b>	<b>N(3,4)</b>	
	<b>SPBC1271.09</b>	<b>Member of sugar (and other) transporter family, possible role in inositol metabolism</b>	<b>N(3,4)</b>	<b>New 3</b>
	SPCC364.07; SPCC4G3.01	Protein similar to 3-phosphoglycerate dehydrogenase, which catalyzes first step in synthesis of serine	N(3,4)	
	SPAC3A11.10c	Member of Rnal dipeptidase family, zinc-dependent metalloproteinases that hydrolyze various dipeptides	N(3,4)	
	SPAC664.03	Member of Paf1 family, components of RNA polymerase II associated complexes	N(3,4)	Ace2, Forkhead
<i>pro1</i>	SPAC821.11	Protein similar to gamma-glutamyl phosphate reductase involved in proline biosynthesis	N(3,4)	
<i>fim1</i>	SPBC1778.06c	Fimbrin, role in actin organization during medial ring formation and polarized growth	N(3,4)	
	SPBPB21E7.09; SPAPB21E7.09	Protein similar to L-asparaginase II	N(4)	Forkhead, MCB 1, New 3

<sup>a</sup> Gene descriptions were hand-curated based on information in *S. pombe* GeneDB ([www.genedb.org/genedb/pombe/index.jsp](http://www.genedb.org/genedb/pombe/index.jsp)) and PombePD ([www.incyte.com/control/tools/proteome](http://www.incyte.com/control/tools/proteome)).

<sup>b</sup> Genes are sorted by cluster membership with ‘high amplitude’ genes shown in **bold**. N: genes not assigned to any cluster (nearest clusters given in parentheses). Note that assignment of genes into clusters 1-4 is by necessity somewhat arbitrarily and should not be regarded as absolute. In reality, genes are more continuously induced rather in distinct groups (**Fig. 1**), which makes cluster assignment for some genes difficult.

<sup>c</sup> The potential regulatory motifs (as defined in **Supplementary Table 4** online) that were found upstream of genes are indicated.

Note that some genes may contain motifs that are >600 bp upstream of the start codon or that are related versions of the motifs we analyzed; in both cases, these motifs will not be indicated in this table. The occurrence of a motif upstream of a gene does not necessarily mean that this gene is regulated by the corresponding transcription factor. For example, *cig2* also has a MCB motif >600 bp upstream of the start codon (Ayté et al., 2001, Nature Cell Biol. 3:1043), and the Forkhead motif could be involved in regulating *cig2* expression during meiosis, which is Mei4p-dependent (Borgne et al., 2002, Mol. Biol. Cell 13:2080).