

Appendix VI: List of 407 genes periodically expressed during the cell cycle

Biological names	Systematic names	Gene description ^a	Cluster	Motifs
<i>ste7</i>	SPAC23E2.03c	Protein required for mating and meiosis	1	FLEX
<i>sso1; psy1</i>	SPCC825.03c	Syntaxin-like component of the plasma membrane docking/fusion complex	1	FLEX
<i>slp1</i>	SPAC821.08c	WD-domain protein of the spindle defect checkpoint and APC activator	1	FLEX
<i>sid2; pld5</i>	SPAC24B11.11c	Protein kinase involved in regulation of cytokinesis	1	FLEX
<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	FLEX, Novel 2
<i>rhp51; rad51</i>	SPAC644.14C	Required for DNA repair and meiotic recombination	1	MCB 1
<i>plo1</i>	SPAC23C11.16	Polo kinase involved in regulation of mitosis and cytokinesis	1	FLEX, Novel 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	FLEX
<i>mob1</i>	SPBC428.13c	Protein involved in regulation of cytokinesis	1	FLEX, MCB 1, Novel 2
<i>meu29</i>	SPAC25H1.05	Unknown function	1	Ace2, FLEX
<i>meu16</i>		Non-coding RNA	1	
<i>klp6</i>	SPBC1685.15c; SPBC649.01c	Kinesin motor protein; KIP3 subfamily	1	FLEX
<i>klp5</i>	SPBC2F12.13	Kinesin motor protein; KIP3 subfamily	1	FLEX, MCB 1
<i>imp2</i>	SPAC13F4.08c; SPBC11C11.02	Protein required for medial ring disassembly after cytokinesis	1	FLEX, MCB 1, Novel 1
<i>etd1</i>	SPAC1006.08	Protein required for cytokinesis	1	FLEX, 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	FLEX, MCB 2
<i>cdc15; rng1</i>	SPAC20G8.05c	Protein involved in cytokinesis	1	FLEX
<i>bet1</i>	SPAC23C4.13	Member of SNARE domain containing family	1	FLEX
<i>apc15; apc16</i>	SPBC83.04	Component of APC/cyclosome complex	1	FLEX

	SPCC757.12	Protein containing an alpha amylase N-terminal catalytic domain	1	Novel 2
<i>ace2</i>	SPAC6G10.12c	Zinc finger transcription factor	1	FLEX
	SPAC5D6.02c	Unknown function	1	
	SPCC576.02	Member of aspartate and glutamate racemases family	1	FLEX
	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	FLEX, Novel 1
	SPBC27.05	Unknown function	1	
	SPAC23H4.19; SPAC1705.03c	Putative cell wall biogenesis protein	1	FLEX, Novel 1, Novel 2
	SPBC19G7.04	Unknown function, possible transcriptional regulator, may contain HMG box	1	FLEX
	SPAC19B12.02c	Protein with high similarity to 1,3-beta-glucanosyltransferase, member of glycolipid anchored surface protein (GAS1) family	1	FLEX
	SPBC16G5.15c	Fork head protein type transcription factor	1	FLEX
<i>rho4</i>	SPAC16A10.04	Rho protein involved in regulation of cytoskeleton, cytokinesis, and cell wall integrity	1	FLEX, Novel 1
<i>mde6</i>	SPAC15A10.10	Protein likely to play a role in meiosis or sporulation, requires Mei4p for transcriptional activation	1	FLEX
	SPAC15A10.09c	Unknown function	1	FLEX, MCB 1, Novel 1
<i>mac1</i>	SPAC13G7.04c	Transmembrane protein involved in cell separation	1	FLEX, Novel 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	FLEX
<i>top1</i>	SPBC1703.14c	DNA topoisomerase I, involved in chromatin organisation	1	FLEX, Novel 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	Novel 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	FLEX
	SPAC9.11	Unknown function	1	
	SPBC646.06c	Member of glycosyl hydrolase family 71, putative glucanase	1	FLEX, Novel 2
	SPAC589.09	Protein containing a CRAL-TRIO domain, putative	1	

		phosphatidylinositol metabolism		
	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	FLEX
	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	FLEX
	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	FLEX
	SPBC26H8.13c	Unknown function	1	
	SPAC24H6.01c; SPAPB21F2.01	Unknown function, similarity to putative glycerol transporter involved in phospholipid biosynthesis	1	FLEX, MCB 1
	SPAC24C9.05c	Unknown function	1	
	SPAC23G3.04	Unknown function	1	Novel 3
<i>spn7; mde8</i>	SPBC21.08c; SPBC19F8.01c	Septin homolog, involved in cell separation	1	FLEX
	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	FLEX
	SPAC1687.17c	Member of the Der1-like family, putative transmembrane protein with signal peptide	1	FLEX
	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	FLEX
	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>	SPBC660.14	Protein kinase that inhibits Cdc2p kinase	2	FLEX, MCB 1, MCB 2
<i>poll; swi7</i>	SPAC3H5.06c	DNA polymerase alpha catalytic subunit	2	FLEX, Histone
	SPAC644.05c	Protein similar to dUTP pyrophosphatase, which maintains dUTP at low levels to prevent misincorporation into DNA	2	MCB 1, MCB 2
	SPAC1071.09c	Protein containing a DnaJ domain, which mediates interaction with heat shock proteins	2	
	SPBC1289.01c; SPBC1539.11c	Unknown function, putative involvement in chitin biosynthesis	2	MCB 1
	SPCC1322.04	Putative UTP-glucose-1-phosphate uridylyltransferase	2	FLEX
	SPCC1322.10	Unknown function, similar to cell-surface proteins and proteoglycans	2	FLEX
	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	FLEX
	SPCC74.07c; SPCC18.01c	Member of SUN family, contains predicted N-terminal signal sequence	2	Ace2, FLEX
	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, FLEX, 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, FLEX
	SPBC27.04	Unknown function	2	Novel 1
<i>ams2</i>	SPCC4F11.01;	Protein that binds binds chromatin at centromere and is	2	MCB 1

	SPCC290.04	involved in chromosome segregation		
	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	FLEX, Novel 1
	SPBC32F12.10	Protein with phosphoglucomutase or phosphomannomutase C-terminal domain	2	FLEX
	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	FLEX
<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	FLEX
<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	FLEX, Novel 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	FLEX
<i>cut2</i>	SPBC1815.02c; SPBC14C8.01c	Securin; required for sister chromatid separation	2	Ace2, FLEX
<i>dfp1; him1; rad35</i>	SPCC550.13	Regulatory subunit of the Hsk1p-Dfp1p kinase complex involved in S phase initiation	2	FLEX, MCB 1
<i>eng1</i>	SPAC821.09	Endo-beta-1,3-glucanase required for cell separation	2	FLEX
<i>exg1</i>	SPBC1105.05	Putative exo-beta-1,3-glucanase	2	Novel 2
<i>fin1</i>	SPAC19E9.02	NimA family kinase; regulates spindle formation and recruitment of Plo1p to SPB, promotes chromatin condensation	2	FLEX

<i>klp8</i>	SPAC144.14	Protein containing a kinesin motor domain	2	
<i>meu19</i>		Non-coding RNA	2	
	SPAP14E8.02	Unknown function	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>rep2</i>	SPBC2F12.11c	Zinc finger transcriptional activator, MBF transcriptional complex	2	
<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, FLEX
<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, Novel 1
<i>ulp1</i>	SPBC19G7.09	Ubl2p-specific protease	2	FLEX, 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>cdc4</i>	SPAP8A3.08	EF-hand component of actomyosin contractile ring, required for cytokinesis	2	Ace2, Novel 3
<i>cdc10</i>	SPBC336.12c	Component of MBF transcriptional activation complex involved in control of START	2	
<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, Novel 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	FLEX, 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	FLEX
<i>cnp1; sim2</i>	SPBC1105.17	CENP-A-like protein, histone H3 variant specific to inner centromeres and required for chromosome segregation	2	FLEX, MCB 2
<i>esol; ecol</i>	SPBC16A3.11	DNA polymerase eta, involved in sister chromatid cohesion	2	FLEX, MCB 1
	SPBPB21E7.10; SPAPB21E7.10	Unknown function	2	
<i>pob1</i>	SPBC1289.04c	Protein required for cell polarity and cell separation	2	Ace2
	SPCC1795.10c	Unknown function	3	Ace2
	SPBC17G9.06c	Unknown function	3	Ace2
	SPBC19C7.04c	Unknown function	3	
	SPCC338.12	Unknown function	3	Ace2, MCB 1, Novel 3
<i>hht1</i>	SPAC1834.04	Histone H3.1	3	Histone, MCB 1
<i>hht2</i>	SPBC8D2.04	Histone H3.2	3	Histone
<i>hht3; clo5</i>	SPBC1105.11c	Histone H3.3	3	Histone
<i>hhf1; ams1</i>	SPAC1834.03c	Histone H4.1	3	Histone, MCB 1

<i>hhf2; ams3</i>	SPBC8D2.03c	Protein similar to histone H4.1, contains a core histone domain	3	Histone
<i>hhf3; ams4</i>	SPBC1105.12	Histone 4.3	3	Histone
<i>hta1</i>	SPCC622.08c	Histone H2A-alpha	3	Histone, MCB 1
<i>hta2</i>	SPAC19G12.06c	Histone H2A-beta	3	Histone
<i>htb1</i>	SPCC622.09	Histone H2B-alpha	3	Histone, MCB 1
<i>pht1</i>	SPBC11B10.10c	Histone H2A variant	3	
	SPBPJ4664.02	Unknown function, possible cell surface glycoprotein	3	
<i>prl36</i>		Non coding RNA	3	
<i>sap1</i>	SPCC1672.02c	DNA-binding protein required for growth and mating type switching	3	
<i>sod2</i>	SPAC977.10	Sodium/proton antiporter	3	
	SPAC1F7.03	Unknown function	3	
	SPCC306.08c	Malate dehydrogenase, mitochondrial precursor	3	
	SPAC1142.02c; SPAC17G6.19c	Unknown function, contains three TPR domains	3	FLEX
	SPBC1105.14	Protein containing two zinc finger DNA binding domains, possible role in proteasome regulation	3	
	SPAC12G12.07c	Unknown function, domain similar to integrin-a 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 in transcription regulation and transcription elongation	3	Novel 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	3	

		recombination		
	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	
<i>spd1</i>	SPAC29B12.03	Negative regulator of S phase	4	
<i>rds1</i>	SPAC343.12	Stress response protein	4	
<i>psu1</i>	SPAC1002.13c	Protein required for cell wall integrity, member of SUN protein family	4	
	SPAC13G6.10c	Unknown function	4	MCB 1
	SPAP7G5.06	Protein similar to amino acid permease, a proton symport transporter for all naturally-occurring L-amino acids	4	
	SPAC5H10.06c	Protein similar to alcohol dehydrogenase IV, which is involved in carbohydrate metabolism	4	

SPAC1039.02	Unknown function, possible membrane protein	4		
SPAC1039.01	Member of amino acid permease family of membrane transporters	4		
SPBC119.10	Asparagine synthetase	4	Novel 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	FLEX	
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	FLEX	
SPBC17D1.06; SPCC17D1.06	Member of the DEAD or DEAH box ATP-dependent RNA helicase	4	FLEX	
<i>pof6</i>	SPCC18.04	Protein involved in cell division, contains F-box domain	4	Novel 3
	SPCC18.05c	Protein containing nine WD domains (WD-40 repeat), possible membrane receptor	4	Novel 3
	SPCC1827.06c	Aspartate semialdehyde dehydrogenase	4	FLEX
<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	FLEX

	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	Novel 3
	SPBC365.16	Unknown function	4	
	SPBC3B8.06	Unknown function	4	
	SPCC548.06c	Protein similar to putative H ⁺ -glucose symporter involved in glucose transport	4	Novel 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	Novel 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	FLEX, 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	Novel 3
<i>gpd2</i>	SPAC23D3.04c	Glycerol-3-phosphate dehydrogenase	4	Novel 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	4	

		required for mRNA cleavage and polyadenylation		
<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	FLEX
	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	FLEX
	SPCC1494.07	Unknown function	4	Novel 3
	SPCC1494.08c	Unknown function	4	Novel 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	Novel 3
SPBC17I1.07	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	FLEX, Novel 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	FLEX
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	Novel 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 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	FLEX
<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	FLEX
	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	Novel 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	FLEX, 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	FLEX
	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	FLEX

<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	FLEX
	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	FLEX, 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 nucleocytoplasmic 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	FLEX
<i>uvi15</i>	SPBC649.04	Protein essential for stationary phase survival, induced by stress	4	Novel 2

<i>vip1</i>	SPAC10F6.06	Protein containing an RNA recognition motif	4	
	SPCC320.02c; SPCC1235.01	Unknown function	N(1)	FLEX, Histone
<i>prl3</i>		Non-coding RNA	N(1)	
<i>hsk1</i>	SPBC776.12c	Protein kinase of the Hsk1p-Dfp1p complex involved in S phase initiation	N(1,2)	
	SPCC338.08	Unknown function	N(1,2)	
<i>mfm2</i>	SPAC513.03	Precursor polypeptide for mating pheromone M factor produced by h- cells	N(1,2)	
<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)	FLEX, 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)	Novel 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)	FLEX
	SPCC965.06	Protein similar to potassium voltage-gated channel	N(1,2,3)	Novel 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)	
	SPAC869.05c	Member of sulfate transporter family, similar to sulfate permease	N(1,4)	
	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)	Novel 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)	
	SPCC553.07c	Member of impB, mucB or samB family, possible role as translesion DNA repair polymerase	N(2,3)	
	SPBC800.11	Protein with inosine-uridine preferring nucleoside hydrolase domain	N(2,3)	
	SPAC750.05c	Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC1348.02 and SPBPB2B2.19c	N(2,3)	
	SPBC1348.02; SPAC1348.02	Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC750.05C and SPBPB2B2.19c	N(2,3)	
	SPBPB2B2.19c	Telomeric protein of unknown function, highly similar to S. pombe SPAC977.01, SPAC1348.02 and SPAC750.05C	N(2,3)	Histone
	SPAC977.01	Telomeric protein of unknown function, highly similar to S. pombe SPAC1348.02, SPAC750.05C and SPBPB2B2.19c	N(2,3)	FLEX
	SPBC409.22c; SPBC1306.01c	Protein with elongation factor Tu GTP binding domain, similar to mitochondrial translation elongation factor G	N(2,3)	
	SPAC17G6.03	Protein with calcineurin-like phosphoesterase domain	N(2,3)	
	SPBC18E5.07	Unknown function	N(2,3)	Novel 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, Novel 3
	SPAC29A4.05	Protein similar to calmodulin 1, which regulates the calcium-dependent activity of enzymes including phosphatases	N(2,4)	
	SPAC631.02	Protein with two bromodomains, which interact with acetylated lysine	N(3,4)	
	SPBC1271.09	Member of sugar (and other) transporter family, possible role in inositol metabolism	N(3,4)	Novel 3

	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, FLEX
<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)	
	SPBFPB21E7.09; SPAPB21E7.09	Protein similar to L-asparaginase II	N(4)	FLEX, MCB 1, Novel 3

^a Gene descriptions are based on the information in PombePD (www.incyte.com/control/tools/proteome) and *S. pombe* GeneDB (www.genedb.org/genedb/pombe/index.jsp) databases.

Genes are sorted according to the cluster they belong to; genes in bold are of 'high amplitude' and the unclassified genes (N) are listed at the bottom of the list.