

# yeastCC

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orf800	<i>Cell cycle regulated genes from Spellman et al. (1998)</i>
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## Description

Vector of ORF names for the 800 cell cycle regulated genes identified by the analysis of Spellman et al. (1998). The expression measures and sample descriptions are stored in the `exprSet` instance `yeastCC`.

## Usage

```
data(orf800)
```

## Format

The format is: chr [1:800] "YAL022C" "YAL040C" "YAL053W" "YAL067C" "YAR003W" "YAR007C"  
...

## Source

The 800 ORF names were obtained from the file "CellCycle98.xls" on the Yeast Cell Cycle Analysis Project website (<http://genome-www.stanford.edu/cellcycle/>). The raw data (images, TIFF) and processed data "combine.txt" used to create the `exprSet` instance `yeastCC` are also available on the website. Gene annotation information is available from the Saccharomyces Genome Database (SGD, [http://genome-www.stanford.edu/Saccharomyces/gene\\_list.shtml](http://genome-www.stanford.edu/Saccharomyces/gene_list.shtml)). The script "createYeastCC.R" for generating the `yeastCC` package is available in `../doc`.

## References

Spellman et al. (1998). Comprehensive Identification of Cell Cycle-regulated Genes of the Yeast *Saccharomyces cerevisiae* by Microarray Hybridization. *Molecular Biology of the Cell*, 9: 3273-3297 ([./doc](#)).

## Examples

```
data(orf800)
```

---

```
spYCCmeta
```

```
metadata on yeast cell cycle microarray experiment
```

---

## Description

data.frame instance with metadata on 800 genes

## Usage

```
data(spYCCmeta)
```

## Format

A data frame with 800 observations on the following 75 variables.

**Process** a factor with levels 4-nitroquinoline-N-oxide resistance ATP synthesis ...

**Function** a factor with levels (1->6)-beta-glucan synthase subunit (putative) Glc7p regulatory subunit ...

**X** a logical vector

**Peak** a factor with levels G1 G2/MM/G1 S S/G2

**Phase.Order** a numeric vector

**Cluster.Order** a numeric vector

**ORF** a factor with levels YAL022C YAL040C YAL053W YAL067C YAR003W YAR007C ...

**YPD** a factor with levels AAD10 ACE2 ADA2 ADK2 AFR1 AGA1 AGA2 AGP1 ...

**SGD** a factor with levels AAD10 ACE2 ADA2 ADK2 AFR1 AGA1 AGA2 ...

**YPD.1** a factor with levels YPD

**SGD.1** a factor with levels SGD

**MIPS** a factor with levels MIPS

**n1** a numeric vector

**n2** a numeric vector

**Geomean** a numeric vector

**Absolute** a numeric vector

**g1** a numeric vector

**g2** a numeric vector

**Geomean.1** a numeric vector

**Absolute.1** a numeric vector

**Deletion** a factor with levels irrelevant lethal undocumented viable

**Known.** a factor with levels Known New New

**Description** a factor with levels Inhibitor of Cdc28p/Cln1p and Cdc28p/Cln2p complexes involved in cell cycle arrest for mating1,3-beta-D-glucan synthase3\'-Phosphoadenylylsulfate reductase; part of the sulfate assimilation pathway ...

**Aggregate.Score** a numeric vector

**Phase** a numeric vector

**No..Elements** a numeric vector

**Most.Relevant.Promoter.Elements** a factor with levels AATAGATGACCCGATTTGGAAAAAGGTAAACAACA  
ATTTGATTGCCGAAAGAGGCCAAAAC GTAAATAGGTTGT C 156 TCTGCCAGCCAA C 253  
AAAGCCAGCCAT C 256 TATGCCAGCCAA C 276 AAGGCCAGCCTC C 293 TTGACCAGCTAA  
...

**X.1** a factor with levels ATATAGCGACCGAATCAGGAAAAG GTCAACAACGAAG C 102 CGAGCCAGCATT  
C 252 AAGACCAGCATG C 301 AGTGCCAGCAAA C 496 GAAGCCAGCACAC 550 GCGGCCAGCAAC  
c 106 attACGCGaaaat c 112 aaaACGCGagaaaa c 121 ggaACGCGacgc ...

**X.2** a factor with levels C 125 GCAACCAGCTCT C 146 CAAGCCAGCCAT C 195 CGCACCAGCAAC  
C 212 TATACCAGCGTT C 245 TAAACCAGCGCAC 402 TATGCCAGCAAA c 112 ttaACGCGatcga  
c 115 agtACGCGaaagg c 123 acaACGCGaacac c 127 gtgACGCGaaaa ...

**X.3** a factor with levels C 307 AAGACCAGCATT c 163 ctgACGCGcgaaa c 190 aatACGCGagaaa  
c 220 tagACGCGcctta c 241 cgaACGCGgaaact c 275 aaaACGCGaccgt c 282  
aagACGCGatttt c 289 attACGCGcatta c 290 aggACGCGgaaact ...

**X.4** a factor with levels C 200 CAAACCAGCATC c 117 gtcACGCGaaaaa c 314 cctACGCGaaagt  
c 338 caaACGCGaaaaa c 359 acgACGCGccttc c 382 gttACGCGaaagt c 384  
tcaACGCGaattt c 397 aaaACGCGaaaaa c 440 gtgACGCGcggtt ...

**X.5** a factor with levels C 306 GGAGCCAGCGCG c 467 accACGCGaaaag c 588 gaaACGCGccttaa  
w 266 ATAACCAGCAAA w 383 cagACGCGgagaac w 478 GGAGCCAGCGCG w401 tatCGCGAAAatt

**X.6** a factor with levels C 337 AGAGCCAGCAAG C 417 TCGGCCAGCAAT c 501 acaACGCGaaaaa  
w 370 gcgACGCGaaaaa w 447 AGAGCCAGCAAG

**X.7** a factor with levels C 388 GGAACCAGCAGA w 396 GGAACCAGCAGA

**Number** a numeric vector

**SCB** a factor with levels c 103 gacCACGAAAttt c 105 atgCACGAAAaag c 106 ctaCACGAAAac  
c 108 tacCACGAAAgta c 110 ccaCACGAAAaga c 123 agaCACGAAAtgt c 127  
acaCACGAAAacg c 181 cagCACGAAAtgg ...

**SCB.1** a factor with levels c178 tgaCACGAAAaac c232 gaaCACGAAAtgc c539 gtaCACGAAAttc  
w269 agcCACGAAAtgc w347 tgaCACGAAAtgt w541 agtCACGAAAacg w601 tgtCACGAAAggt

**SCB.2** a factor with levels c330 aacCACGAAAaaa c582 agtCACGAAAacg w467 attCACGAAAtaa

**SCB.3** a factor with levels w435 atcCACGAAAatc

**X.8** a factor with levels w252 aacCACGAAAagt

**Number.1** a numeric vector

**SCB\_d** a factor with levels c 156 gatCGCGAAAttt c 184 cgaCGCGAAAatgc 218 cagCGCGAAAagt  
c 222 tatCGCGAAAaaa c 229 tgaCGCGAAAacgc c 237 tatCGCGAAAacgac c 238  
atcCGCGAAAagga c 283 aagCGCGAAAaaa ...

**SCB\_d.1** a factor with levels c 126 tttCGCGAAAActg c 415 tttCGCGAAAAtct c 566  
 ttcCGCGAAAaaa c 592 aggCGCGAAAAtac c 633 aaaCGCGAAAAtgt c242 gaaCGCGAAAActt  
 c297 ctCGCGAAAaat c306 tcgCGCGAAAaga ...

**SCB\_d.2** a factor with levels c468 ccaCGCGAAAaga c508 tttCGCGAAAAtct

**SCB\_d.3** a factor with levels c502 caaCGCGAAAaat

**Number.2** a numeric vector

**MCB** a factor with levels w 126 gcaACGCGTcgw 187 caaACGCGTaca w 207 ctCGCGTcgg  
 w 209 attACGCGTttaw 226 cagACGCGTtgc w 228 acaACGCGTctt w 23 acaACGCGTgct  
 w 267 cccACGCGTagg ...

**MCB.1** a factor with levels w111 gaaACGCGTtct w124 ttgACGCGTttc w128 gtgACGCGTtat  
 w130 agaACGCGTtct w131 gcgACGCGTaac w138 aagACGCGTgaa w139 attACGCGTtta  
 w153 ctaACGCGTttt ...

**MCB.2** a factor with levels w374 taaACGCGTcat

**MCB.3** a factor with levels w309 aggACGCGTaaa

**Number.3** a numeric vector

**MCB\_d** a factor with levels c 106 attACGCGaaaat c 109 acaACGCGactgg c 112 aaaACGCGagaaa  
 c 115 agtACGCGaaagg c 117 gtcACGCGaaaaa c 121 ggaACGCGacgc c 127  
 gtgACGCGaaaaa c 129 acaACGCGccccga ...

**MCB\_d.1** a factor with levels c 123 acaACGCGaacac c 136 aatACGCGattgg c 147  
 gcaACGCGagaga c 158 tctACGCGcgaag c 163 ctgACGCGcgaac 176 gcgACGCGgttgt  
 c 187 agtACGCGatttg c 189 gaaACGCGggcac ...

**MCB\_d.2** a factor with levels c 112 ttaACGCGatcga c 220 tagACGCGcctta c 294  
 ttcACGCGcttaa c 382 gttACGCGaagtc c 477 gcaACGCGcctgg c 501 acaACGCGaaaaa  
 c 549 attACGCGcacg c 557 tgtACGCGcgaac ...

**MCB\_d.3** a factor with levels c 617 gaaACGCGcagta w 50 gtaACGCGctttt

**X.9** a factor with levels c 359 acgACGCGccttc

**Number.4** a numeric vector

**SFF** a factor with levels AATAGATGACCCGATTTGGAAAAAGGTAAACAACAATG ATTTGATTGCCGAAAGAGGCCAAAAAC  
 GTAAATAGTTGT CAAAACAAACCCAATAAAGAAAATCCAAAATATAGAAC GTACTTTAACCTGTTTAGGAAAAAC  
 GTAAACAATAACA TCGAACAAATTCTAAAAAGGTAAAT AAAAAACAATGGTA ...

**Number.5** a factor with levels 1 2 3 4 ATATAGCGACCGAATCAGGAAAAGGTCAACAACGAAG

**Swi5** a factor with levels C 102 CGAGCCAGCATT C 156 TCTGCCAGCCAA C 200 CAAACCAGCATC  
 C 252 AAGACCAGCATG C 253 AAAGCCAGCCAT C 256 TATGCCAGCCAA C 276 AAGGCCAGCCTC  
 C 293 TTGACCAGCTAA ...

**Swi5.1** a factor with levels C 125 GCAACCAGCTCT C 146 CAAGCCAGCCAT C 195 CGCACCAGCAAC  
 C 245 TAAACCAGCGCA C 301 AGTGCCAGCAAA C 306 GGAGCCAGCGCG C 307 AAGACCAGCATT  
 C 402 TATGCCAGCAAA ...

**Swi5.2** a factor with levels C 212 TATACCAGCGTT C 337 AGAGCCAGCAAG c 19 AGAACCAGCTGA  
 c 320 ACCACCAGCTTA c 545 ACCACCAGCGTA c 569 TTCACCAGCGGC c 642 GAGACCAGCGGA  
 c 651 ATCACCAGCAAA ...

**Swi5.3** a factor with levels C 388 GGAACCAGCAGA C 417 TCGGCCAGCAAT c 336 TTTACCAGCTCA  
 c 363 TGCACCAGCATT c 494 CTGGCCAGCAAG w 396 GGAACCAGCAGA

**Number.6** a numeric vector

**Swi5e** a factor with levels c 102 CGAGCCAGCATT c 137 TAGGCCAGCAAA c 155 ACAACCAGCAGT  
 c 156 CTAACCAGCAAG c 16 AGAGCCAGCAGA c 174 TAAACCAGCATT c 184 ATGGCCAGCATA  
 c 200 CAAACCAGCATC ...

**Swi5e.1** a factor with levels c 222 TTGACCAGCGCC c 256 TAAACCAGCAAA c 306 GGAGCCAGCGCG  
c 307 AAGACCAGCATT c 637 GGAGCCAGCGAT w 265 TAAACCAGCAAT w 266 ATAACCAGCAAA  
w 467 TGAGCCAGCAAT w 478 GGAGCCAGCGCG w 536 GAAACCAGCAAC w 554 ATGGCCAGCACC

**Swi5e.2** a factor with levels c 337 AGAGCCAGCAAG c 417 TCGGCCAGCAAT c 642 GAGACCAGCGGA  
w 447 AGAGCCAGCAAG

**Swi5e.3** a factor with levels c 388 GGAACCAGCAGA w 396 GGAACCAGCAGA

**Number.7** a numeric vector

**ECB** a factor with levels c 185 TTACCCATTTAGGAAA c 221 TTACCCAATTAGGAAA c 251  
TTTCCCTTTAAGGAAA c 258 TTTCCCAAAAAGGAAA c 387 TTTCCCTTTTAGGAAA c  
394 TTACCCACTTAGGAAA w 154 TTTCCCTTTTAGGAAA w 177 TTACCCACTTAGGAAA  
w 229 TTACCCAGAAAAGGAAA w 378 TTTCCCTAATAGGAAA w 453 TTTCCCGTTTAGGAAA  
w 595 TTTCCCACTAAGGAAA

**Number.8** a numeric vector

**STE12** a factor with levels c 243 CCTTTTTTCAGTTTCTATTTTTTAACACTGAAACT w 112 CCCTATTTGGTTGCAA  
w 119 CCCAATGTAGAAAAGTACATCATATGAAACA w 218 CCTAATTGGGTAAGTACATGATGAAACA  
w 224 CCCAAAAAGGAAATTTACATGTTAAATGAAACC ...

**MIG1.sites** a factor with levels c 114 AATAGACTGGGG c 137 TCTATCCTGGGG c 147  
TGAATGCTGGGG c 165 AATAAAGTGGGG c 215 TATAATGCGGGG c 304 AAATCGCCGGGG  
c 332 AAATAICTGGGG c 368 AATTGCGCGGGG ...

**X.10** a factor with levels c 161 AGTTTGGTGGGG c 262 AAGATGGTGGGG c 498 AAAAAACCGGGG  
c 499 AAAAATGCGGGG w 296 TATTGCGCGGGG w 578 CTTTGGCCGGGG

**X.11** a logical vector

## Details

taken from the Spellman support web site.

## Source

[cellcycle-www.stanford.edu](http://cellcycle-www.stanford.edu)

## References

PMID 9843569

## Examples

```
data(spYCCmeta)
spYCCmeta[1:5,1:6]
```

---

yeastCC

*Data from the Spellman et al. (1998) yeast cell cycle microarray experiment*

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## Description

This data package contains an `exprSet` instance for the yeast cell cycle microarray experiment. The dataset contains gene expression measures (log-ratios, with Cy3-labeled common reference) for 6,178 yeast genes in 77 conditions.

## Usage

```
data(yeastCC)
```

## Details

There are four main timecourses: alpha (alpha factor arrest), cdc15, cdc28, and elu (elutriation), corresponding to different synchronization methods. For details on experimental procedures and analysis, refer to Spellman et al. (1998) (in `../doc`) and the Yeast Cell Cycle Analysis Project website (<http://genome-www.stanford.edu/cellcycle/>). The `exprSet` instance `yeastCC` was derived from the file "combined.txt" on the website. The ORF names for the 800 cell cycle regulated genes are stored in `orf800`.

## Source

The raw data (images, TIFF) and processed data "combine.txt" used to create the `exprSet` instance `yeastCC` are available from the Yeast Cell Cycle Analysis Project website (<http://genome-www.stanford.edu/cellcycle/>). Gene annotation information is available from the Saccharomyces Genome Database (SGD, [http://genome-www.stanford.edu/Saccharomyces/gene\\_list.shtml](http://genome-www.stanford.edu/Saccharomyces/gene_list.shtml)). The script "createYeastCC.R" for generating the `yeastCC` package is available in `../doc`.

Note that `spYCCES` is an `ExpressionSet` instance with the same data and slightly different phenodata annotation.

## References

Spellman et al. (1998). Comprehensive Identification of Cell Cycle-regulated Genes of the Yeast *Saccharomyces cerevisiae* by Microarray Hybridization. *Molecular Biology of the Cell*, 9: 3273-3297.

## Examples

```
data(yeastCC)
yeastCC
varLabels(yeastCC)
pData(yeastCC)
description(yeastCC)
abstract(yeastCC)
featureNames(yeastCC)[1:10]
dim(exprs(yeastCC))
```

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