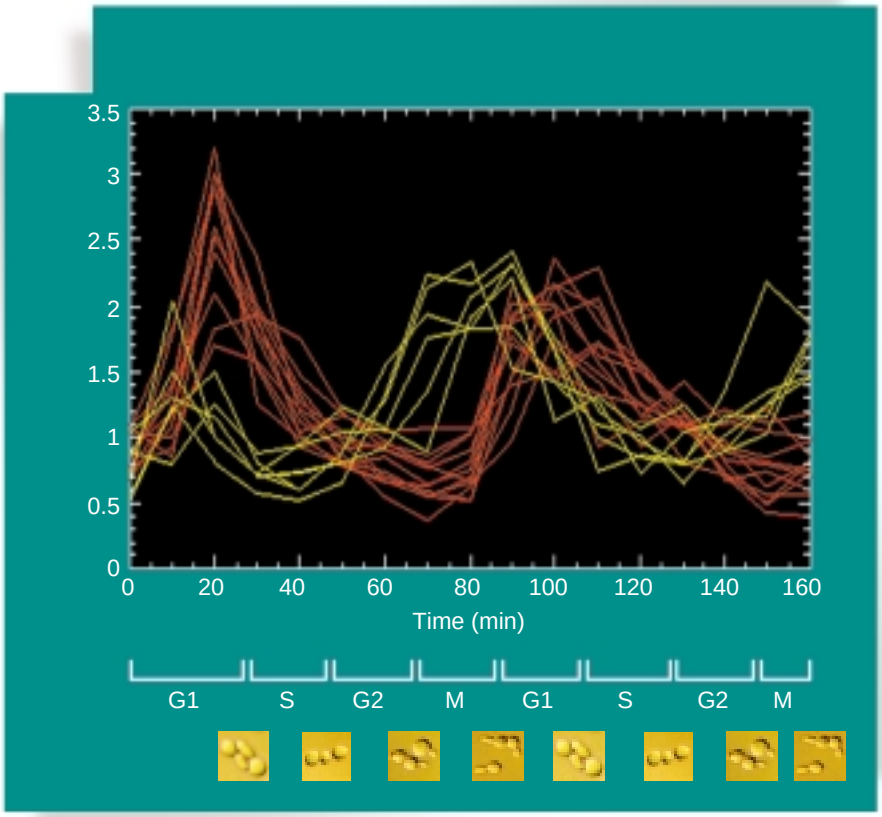
# GeneChip®
# Yeast Genome S98 Array

## Comprehensive Yeast Expression Analysis

The Yeast Genome S98 Array offers complete gene expression monitoring capability for the entire yeast genome on a single array. Approximately 6,400 well-recognized Open Reading Frames of the yeast *Saccharomyces cerevisiae* are represented.

Since the release of Affymetrix' first product for yeast gene expression monitoring, the number of Open Reading Frames described in authoritative public databases has increased by several hundred. Yeast Genome S98 represents a complete updating of the yeast genome to include these new sequences.




**Simultaneous monitoring of expressed yeast genes.** The resolution of expression monitoring using GeneChip® Probe Arrays is sufficient to distinguish genes expressed in early (yellow) versus late (red) G1 phase. From Cho, R.J. *et al.*, Mol. Cell **2** pp 65-73. Results shown were obtained using the Ye6100 Set.

## Applications

### Determine Gene Function and Define Pathways

Monitor expression patterns under the experimental conditions of your choosing to determine the function of the thousands of yeast genes. Common expression patterns can be used to identify genes that are members of the same pathway.

### Explore Expression of Candidate ORFs

In addition to approximately 6,400 probe sets for well-recognized Open Reading Frames, Yeast Genome S98 contains probes for candidate ORFs that have been tentatively identified by Serial Analysis of Gene Expression (SAGE). These sequences may be expressed at low levels or under specific conditions. Researchers can employ the reliability of GeneChip Probe Arrays to explore the expression of these poorly-characterized sequences.

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# Benefits

## Sensitivity and Selectivity

Probes for Yeast Genome S98 have been completely reselected for uniqueness against newly-discovered Open Reading Frames and other RNA species. Affymetrix' state-of-the-art probe selection algorithms have been applied to maximize probe sensitivity and avoid cross-hybridization with other RNAs.

## Smaller Sample Requirements

A single array for the entire yeast genome permits researchers to reduce by a factor of four the sample volume requirement for parallel analysis of all genes. Sample preps are more economical and less cumbersome. Array hybridization and scanning requires less labor.

## More Convenient Data Analysis

Expression of the entire yeast genome is recorded in a single file. Researchers can more easily compare and relate the expression of all sequences.

# Array content

The Yeast Genome S98 Array contains probes for all known yeast genes and is based primarily upon the December 1998 version of the Saccharomyces Genome Database (SGD). This sequence corresponds to the S288C strain of *Saccharomyces cerevisiae*.

## Relationship to the Ye6100 Set

Affymetrix' earlier four-array set, Ye6100, was based upon the September 1996 release of the Saccharomyces Genome Database (SGD) and contained probes for the approximately 6,100 ORFs identified at that time. The Yeast Genome S98 Array contains probes corresponding to new ORFs identified by SGD up to December 1998. In addition, Yeast Genome S98 contains probe sets for sequences identified as ORFs by the Munich Information Center for Protein Sequences (MIPS), but not regarded as such by SGD. The total number of ORFs recognized by either of these authoritative databases is 6,430.

## Additional Sequences

In addition to ORFs recognized by SGD or MIPS, Yeast Genome S98 also contains probes for several types of sequence of special interest. These include putative ORFs suggested by Serial Analysis of Gene Expression (Velculescu, et al., Cell **88**, p243), Mitochondrial proteins, TY proteins, ORFs from 2 micron plasmids and a small number of ORFs from strains other than S288C. In total, approximately 7,000 sequences are represented. A more detailed description of all sequences represented on the array is contained on the Expression Analysis Sequence Information (EASI) database, version 2.1.

# Selected GeneChip® Yeast Expression References


Wyrick, J.J. *et al.*, Chromosomal landscape of nucleosome-dependent gene expression and silencing in yeast. Nature **402** pp418-21.

Winzeler, E.A., *et al.*, Direct allelic variation scanning of the yeast genome. Science **281** pp1194-7

Holstege, F.C., *et al.*, Dissecting the regulatory circuitry of a eukaryotic genome. Cell **95** pp717-28.

Cho, R.J. *et al.*, A genome-wide transcriptional analysis of the mitotic cell cycle. Mol Cell **2** pp65-73.

Wodicka, L. *et al.*, Genome-wide expression monitoring in Saccharomyces cerevisiae. Nat Biotechnol. **15** pp1359-67.


# Specifications

| | |
|---|---|
| **Feature size** | 24 micron |
| **Array size** | Standard format |
| **Oligo length** | 25mers |
| **Probe pairs/gene** | ~16 |
| **Detection Sensitivity** | 1:100,000* |
| **Control sequences included** | |
| Hybridization controls | bioB, bioC, BioD, cre |
| Poly A controls | dap, lys, phe, thr, trp |
| Yeast controls | Actin, TATA binding factor, RNA polymerase II, 18s rRNA, 25s rRNA |

*As measured by detection in a comparative analysis between a complex target containing spiked control transcripts, and a complex target with no spikes.

## Ordering Information:

| | |
|---|---|
| **Part No.** | 900256 |
| **Name** | Yeast Genome S98 Array |
| **Description** | Contains 5 Yeast Genome S98 Arrays |
| **Part No.** | 900285 |
| **Name** | Yeast Genome S98 Array |
| **Description** | Contains 30 Yeast Genome S98 Arrays |


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