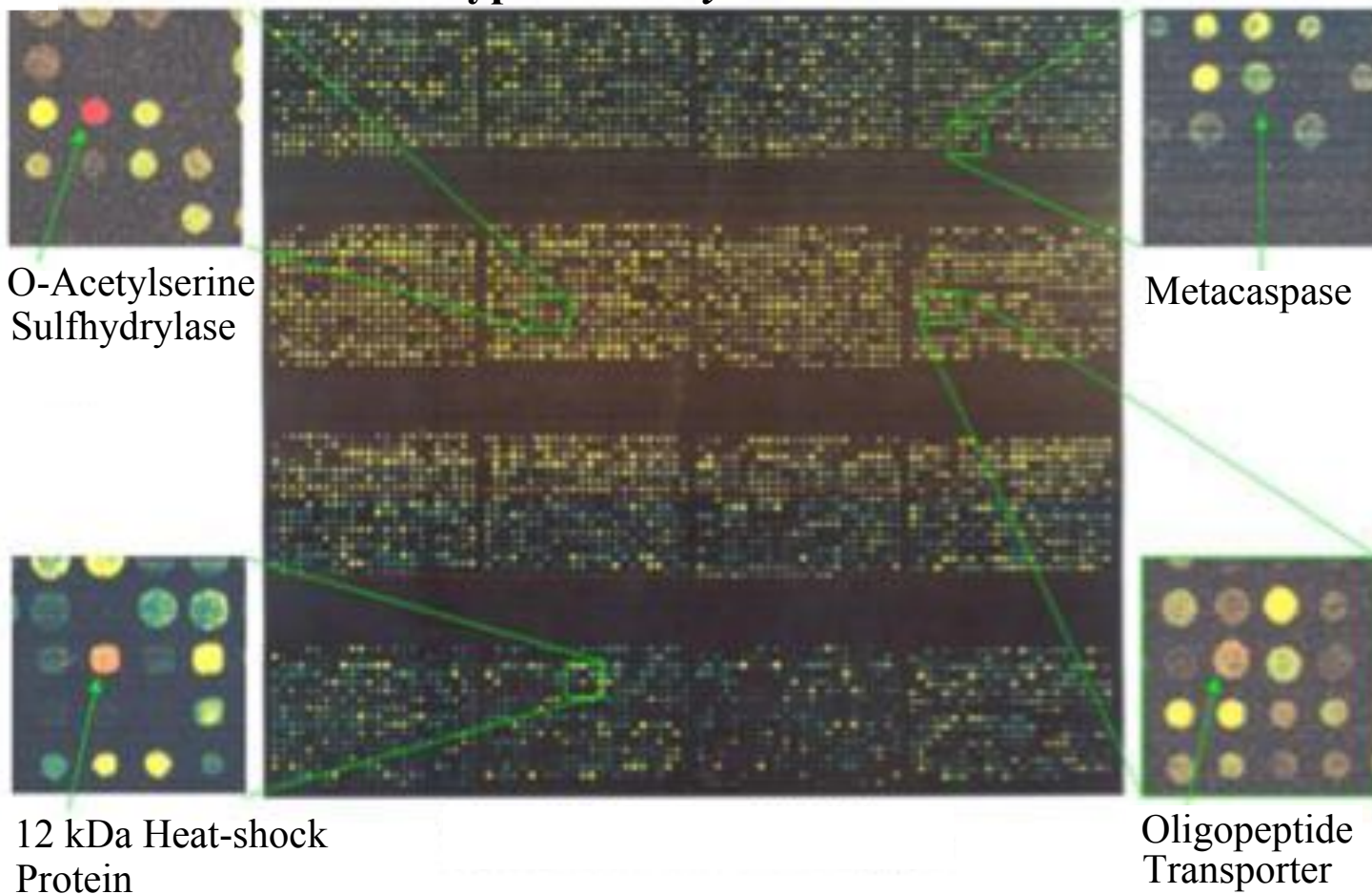




# Science Documents™

## Wild Type *versus* $\Delta yca1$ Mutant Cells



## Yeast Mutant Whole Genome Microarray



## A Cell Compared to a Computer

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### Thought Process

Human and animal bodies are made up of trillions of living cells.<sup>1,2</sup> The objective is to think of how certain aspects of a cell relate to that of a computer.<sup>3</sup> This intriguing correlation prompted a thought process of comparing an animated system to an inanimate hardware. Cells and computers are similar in that they are complex and are made up of many different components, which execute similar functions. There are many similar components as well, as both cells and computers have to store information, for example. Since they have many similar functions, it is easy to compare parts of a cell to those of a computer.

### Derivation

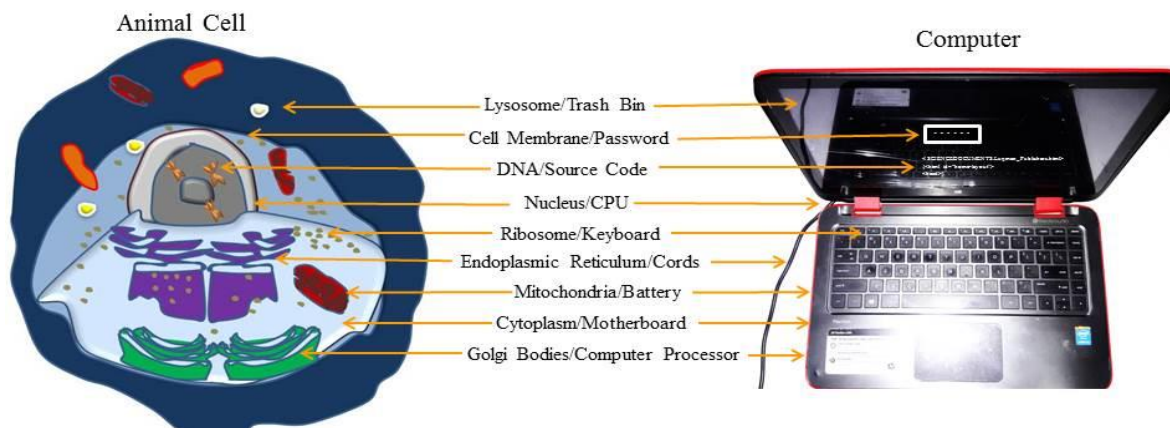
The purpose is to create an analogy to compare a cell to a common object, so it is easier to understand how a cell functions.

**RIBOSOME/KEYBOARD:** The ribosome in a cell creates protein so the cell can work, likewise when you type on the keyboard, the computer creates letters on the screen. The ribosome makes protein and the keyboard makes letters.

**ENDOPLASMIC RETICULUM/CORDS:** The endoplasmic reticulum in a cell transfers energy and proteins throughout places in the cell, while cords/wires transfer electricity throughout the inside of the computer.

**GOLGI BODY/COMPUTER PROCESSOR:** The golgi body in the cell packages protein out for transport for other parts of the cell, as a computer processor processes data and provides it to the other parts of the computer.

**LYSOSOME/RECYCLING BIN:** The lysosome in a cell degrades and gets rid of the extra waste from the cell, like the recycling/trash bin application stores unwanted documents and removes from the computer. Both of these things provide a solution to get rid of waste.



### Justification

**CELL MEMBRANE/PASSWORD:** The cell membrane of a cell is like the password of a computer because the cell membrane controls what enters the computer, like a password that only allows someone to access the computer if have the correct password. Also, the password hint could act as a form of facilitated diffusion, as one can get into the computer with the help of something else.

**CYTOPLASM/MOTHER BOARD:** The cytoplasm in a cell is a gel-like structure that holds every organelle together inside the cell, while the motherboard is one big chip that holds all of the electrical parts together inside.

**NUCLEUS/CPU:** The nucleus is the brain of the cell because it tells every organelle what to do and when to do it, like how the CPU (Central Processing Unit) also assigns certain parts of the computer to carry out different tasks.

### References

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2. Epstein MA: The fine structure of animal cells; A brief introductory survey. *Zoological J Linnean Society* 1958, 153-62.
3. Jesiek BK: The origins and early history of computer engineering in the United States. 2013, *IEEE Annals of the History of Computing* 35:6-18.

### Conflicts of Interest

There is no conflict of interest.

### Acknowledgement

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