

Determining the functions of proteins

You will have a list of yeast genes. You need to determine their functions, and then to make sense of the results.

1. Go to <http://www.pubmed.gov>. This is the PubMed Entrez site.
2. Type in the name of the protein that is coded for by the gene. If you have just a yeast number (Yxx###x), enter that and then select “Protein” from the Search list (on the left).
3. In some cases, the function of the protein is unknown. For the others, try to determine something about its function.”
4. Most proteins are involved in particular processes (sugar metabolism, DNA replication, translation, etc). Try to find out if the protein is part of a particular process. The can be done on the PubMed site, or at

OMIM (<http://www.ncbi.nlm.nih.gov/sites/entrez?db=OMIM>)

[Note that OMIM only has genes that are also in humans (many of which are in yeast).]

or at KEGG (<http://www.genome.jp/kegg/>).

For KEGG, type in the name and click on “Search BRITE”.

5. After you have determined the function(s) of each gene that is in your set, try to make sense of how and why these genes responded to the change in oxygen (aerobic vs. anaerobic).
6. For your presentation and your microarray report, you need to present the gene expression patterns of the genes, the functions of the genes you are analyzing, and then try to explain if the results make sense to you (scientifically).