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| Yeast protein | Biological function | Importance experimentally |
| **YBR160W/CDC28** | **Cell division cycle** | **Protein of interest, key protein in the cell cycle** |
| YNL098C/RAS2 | Regulates nitrogen starvation response | Important for regulating metabolites such as fructose-1, 6-bisphosphate. Possible use for metabolomic analysis |
| YLL039C/ubiquitin | Protein degradation | Constitutively expressed in yeast cells therefore can be used as a control protein for multiple experiments. No involved in the same process and CDC28 and therefore should not be affected by knockouts |
| YDL132W/CDC53 | Cell division cycle | Involved in G1-S cell cycle transition. Of interest because it is involved in the same process as CDC28 |
| YLR113W/HOG1 | Osmoregulation | Stimulates antisense transcription to activate CDC28. Has implications in knockout experiments. If YLR113W is removed does CDC28 get activated still? |
| **YGR232W/NAS6** | **Assembly-chaperone** | **Ortholog of human p28, which interacts with CDK4/6 in humans to inhibit them. Possible inhibitor in cancer. therefore, should asses its effects on CDC28 and yeast growth experimentally** |
| YERO95W/RAD51 | Strand exchange | Phosphorylated by CDC28 in the G2/M phase of the cell cycle to promote DNA binding and strand invasion. Can use this protein to monitor the effects of CDC28 knockout/down or inhibition |
| **YKR089C/TGL4** | **Metabolism** | **Phosphorylated and activated by CDC28. Its role in catalysis of acyl-CoA dependent acylation, means that if CDC28 is removed there should be a change in metabolites. Possible target for metabolomic studies** |
| YPL160W/CDC60 | Cell division cycle | Involved in the cell cycle like CDC28 therefore can looked at how CDC28 effects expression of this protein |
| YOR335C/CDC64 | Protein synthesis | A point mutation in this protein causes cell cycle arrest at G1 phase. Possible inhibitor of cell cycle and thus cancer growth. Could monitor the effects of this this protein on CDC28 and other cell cycle elements |
| YOL058W/ARG1 | Arginine biosynthesis | Involved in metabolite formation and is a potential substrate for CDC28. Can investigate further by seeing how CDC28 effects this protein and therefore how it effects this metabolic pathway |
| YOR195W/SLK19 | Kinetochore-associated protein | Listed as a potential substrate of CDC28 and is required for normal segregation of chromosomes during M phase. Therefore, can look at how CDC28 knockout effects this system |
| YDL047W/SIT4 | Cell cycle | Functions in the G1/S transition of the mitotic cycle. Can look at how experiments effecting CDC28 will affect this protein |
| YGL190C/CDC55 | Cell division cycle | Required for correct nuclear division. Experimentally we can see how CDC28 effects this proteins expression |
| YOR177C/MPC54 | Membrane organising centre | Listed as a potential CDC28 substrate. Therefore, CDC28 may be implicated in membrane formation during meiosis |
| YHL050C | Unknown function | Listed as a potential CDC28 substrate. If we were able to do experiments on this protein, we could potentially find its function through its involvement in CDC28 |
| YLR466W | Helicase | Phosphorylated by CDC28, therefore CDC28 has possible implications in DNA unwinding. Could monitor DNA unwinding to determine how CDC28 effects this function |
| **YPR119W/CLB2** | **Cell division cycle** | **Cyclin B is involved in cell cycle progression and activates CDC28 to promote G2-M phase transition in the cell cycle. Therefore, this protein is extremely important to the function of CDC28 can could be analysed through knockdown or inhibitor experiments to inhibit the cell cycle** |
| YLR229C/CDC42 | Cell division cycle | Essential for maintenance of cellular polarity and is involved in the same system as CDC28. Therefore, can look at how experiments involving CDC28 effect this proteins expression. Also, this protein is homologous to human CDC42 |
| YDL239C/ADY3 | Spore wall formation | This protein is important for spore wall formation and is phosphorylated by CDC28. Therefore, could look at how CDC28 inhibition effects this process along with the cell cycle |
| **YGR108W/CLB1** | **Cell cycle** | **Paralog of CLB2 and preforms the same function as CLB2. Therefore, could look a redundancy of these proteins. If one is knocked out does the other one replace it?** |

Figure X: Protein analysis of two different lists of communities (one pruned, one unpruned) provided by the math students. These proteins were analysed using Saccharomyces genome database. Looked at top 10 proteins in 28 communities for each list and found 23 proteins “of Interest” based on their relationship to CDC28 and use experimentally