**Metabolic Pathway Comparison**

**Comparing Glycolysis/Gluconeogenesis between Different Species**

**Group Project Instructions**

* You have been assigned to work together in groups of 3 or 4 students (see list on following page).
* You have been assigned two organisms (human and another species from the list)

1. Prepare a species mini-biography (What is it? Where does it live? What does it eat?)
   * Describe the taxonomic relationship between the two species.
   * Include the taxonomic hierarchy of classification for the 2 species.
   * Bonus: How long ago did these species share a common ancestor? (TimeTree Website)
   * Include a phylogenetic tree depicting the relationship between the two species.
2. Compare the cellular location of metabolism in the two species.
   * Include image(s) of cell structure
3. Compare the two species’ glycolytic metabolic pathways.
   * Study and identify the enzymes that are involved in glucose metabolic (glycolysis) pathways in the two selected organisms.
   * Molecular structure of metabolites
   * Bonus: molecular model of glycolytic enzymes (comparison?)
   * Include map of metabolic pathway

**Due Dates**

1. Draft/outline of project due **xxx**.
   1. Follow project instructions listed above regarding content.
   2. Have relevant information about each organism.
2. Presentation slides due **xxx.**
3. Presentation will be given on **xxx**
   1. 15 minutes (10 minutes presentation, 5 min. questions)

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| **Glycolysis Group Assignment** | | | |
| **Group** | **Prof. Smith’s BI107 Students** | **Prof. Teklai’s CH103 Students** | **Organisms** |
| 1 |  |  | Mouse (*Mus musculus*) |
| 2 |  |  | African Clawed Frog (*Xenopus laevi*) |
| 3 |  |  | Zebrafish (*Danio rerio*) |
| 4 |  |  | Fruitfly (*Drosophila melanogaster*) |
| 5 |  |  | Roundworm (*Caeonrhabditis elegans)* |
| 6 |  |  | Poplar Tree (*Populus tremuloides*) |
| 7 |  |  | Herbaceous Plant (*Arabidopsis thaliana*) |
| 8 |  |  | Malaria parasite (*Plasmodium falciparum*) |
| 9 |  |  | Brewer’s Yeast (*Saccharomyces cerevisiae*) |
| 10 |  |  | Green Alga (*Chlamydomonas reinhardtii*) |
| 11 |  |  | Gut Bacterium (*Escherichia coli*) |
| 12 |  |  | Thermophilic Archaean (*Methanococcus jannaschii*) |