**Cell Biology Laboratory**

**Project Description**

The overall purpose of this laboratory is to gain experience in mammalian cell culture techniques. Now is the time for you and your group to take care of your own cells and to obtain data while exposing them to varying conditions (“treatments”).

* Your group will be given your own cells to maintain
  + You will have to work together, determine who is available to come into the lab to feed the cells (this must be done M-F during operating hours for the STEM building, when lab manager and lab assistants are present to let you in the lab)
* Each group will have its own stock supply of media (one bottle for control group, and one bottle to add treatment), PBS, trypsin – make sure group name is on the labels, do not share reagents!
* Each group will have a “treatment” for the cells
  + You will have a control group (no treatment) and a treatment group(s)
  + Research the treatment, find the latest literature
    - You will need background information (references)
* You will need to determine the amount of treatment to add to your stock media for your test cells
* Getting the experiment started
  + Day 1 - Week 1
    - Observe your cells, make notes
    - If cells are ready, they will need to be split (you need at least 4 dishes of cells per test group)
      * Split cells, all dishes will get regular media
      * Label dishes appropriately
      * Put in incubator and wait 3 days
  + Week 1 – Day 3
    - Observe cells, make notes
    - Remove media and feed with the treatment media
      * Place in incubator and wait for 3 days
  + Week 2 – Day 1
    - Observe cells, make notes
      * Take pictures, do you see differences?
    - If confluency is reached, you will have to split the cells
      * If this is the case, trypsinize, do cell count (take detailed notes), split and then add test media
    - If this is not the case, just remove media and add more test median
      * Note % confluency in the control and the test plates
    - Place in incubator and wait for 3 days
  + Week 2 – Day 3
    - Repeat above
* Make your PowerPoint presentation
  + Include pictures
  + At least 1 slide background information (include citations)
  + Couple slides on procedure
  + Slide or 2 on results
  + Slide on implications
    - What would you like to do if you had more time, resources?

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| **Available Treatments** | **Concentration** |
| Epinephrine | 100 µM and 400 µM |
| Roundup | 2% and 40% |
| Reishi mushroom |  |
| Juul Vape Pods | Drops? |
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