

Title: Microencapsulation of tissues and cells for treatment of hormone-related diseases.
(microencapsulation), Project #4

Client: Dr. Craig Atwood

Faculty Advisor: Professor William Murphy

Team Members: Eric Lee (Team Leader)
Yik Nong Wong (Jacqueline) (Communicator)
Miguel Benson (Communicator)
John Harrison (BSAC)
Albert Kwansa (BWIG)

Dates: 4/19/07~4/26/07, Week 13

Project Design Statement: To investigate the effects of thickness, UV radiation exposure, and RGD adhesion molecules on the viability and testosterone production of human prostate cancer cells embedded within polyethylene glycol diacrylate hydrogel. The overall goal of this project is to design an encapsulation system that offers efficient immunoprotection and effective diffusion of oxygen, nutrients, hormones, and metabolic wastes. Conceptually, the stated encapsulation system, along with embedded human prostate cancer cells, will enable the restoration of un-regulated testosterone levels commonly observed in elders, and retard the symptoms of aging.

Restatement of Previous Team Goals:

1. Split the cell lines and start testing for cell viability and testosterone production in our system.
2. Confirm the pre/post swell thickness of our hydrogel using ultrasound
3. Finish editing the out-reach report.
4. Start writing various portions of the final report

Summary of Team Accomplishments:

1. Submitted three samples of 100 μ m thick hydrogel to Dr. Tim Stiles for ultrasound measurement
2. Created PEGdA hydrogel containing progesterone. The progesterone diffusion out of PEGdA hydrogel experiment is underway. Samples of the surrounding media will be tested this Friday via a Eliza kit
3. Attempted to create hydrogels of various thickness containing cells at the Client's laboratory but was not successful and had exhausted all the cell on hand.

Current Individual Goals:

- Eric Lee:
Work on final report and presentation
- Jacqueline Wong:
Work on final report and presentation
- Miguel Benson:
Work on final report and presentation

- John Harrison:
Work on final report and presentation. Contact Dr. Tim Stile for the data from the ultrasound measurement
- Albert Kwansa:
Work on final report and presentation

Summary of Team Goals:

1. Work on final report and presentation