

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: 3/22/07~3/29/07, Week 10

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. Purify PEGdA
2. Perform test measurement of thickness using ultrasound
3. Get trained to maintain cell line

Summary of Team Accomplishments:

1. Met with client to discuss project progression, project biological detail, and access into the laboratory.
2. Met with Dr. Tim Stile on Monday to test using Ultrasound as a measurement method for hydrogel thickness; was not able to distinguish signals from hydrogel from signals from glass slides. Dr. Stile emailed the team stating he was able to get a signal, and we will need to reschedule.
3. Carried out UV exposure experiment for 13~15min with 15sec intervals.

Current Individual Goals:

- Eric Lee:
Edit the K~12 outreach report. Obtain a car to transport the team to the VA hospital for client meeting on Friday. Obtain Keycard.
- Jacqueline Wong:
Obtain keycard.
- Miguel Benson:
Monitor dialysis and lyophilization of our PEGdA product. Obtain keycard.

- John Harrison:
Write the biomaterials section of the outreach report. Contact Dr. Tim Stiles to confirm a meeting date for next week. Obtain keycard.
- Albert Kwansa:
Write the tissue engineering section of the outreach report. Update the website.

Summary of Team Goals:

1. Split the cell lines and start testing for cell viability in our system.
2. Meet with Dr. Tim Stile to confirm hydrogel thickness
3. Obtain keycard to Dr. Atwood's laboratory