

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: 3/16/07~3/22/07, Week 9

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. Perform another diacrylation reaction to produce more PEGdA
2. Contact Amy for more dialysis tubing and information on how to obtain RGD peptides
3. Set up meetings with Dr. Stiles and Dr. Atwood

Summary of Team Accomplishments:

1. Performed diacrylation reaction in Professor Daesung Lee's chemistry lab to generate PEGdA
2. Obtained more dialysis tubing from Amy
3. Met with Dr. Tim Stiles for preliminary meeting. Test measurements of various materials are scheduled for early next week.
4. Client meeting and cell line training scheduled for Friday (3/23/07) at 3:00 and 4:00PM, respectively.

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
- Jacqueline Wong:
Write the imaging section of the outreach report.
- Miguel Benson:

Write the imaging section of the outreach report. Monitor dialysis of our PEGdA product.

- John Harrison:
Write the biomaterials section of the outreach report. Contact Dr. Tim Stiles to confirmation a meeting date for next week.
- Albert Kwansa:
Write the tissue engineering section of the outreach report. Update the website. Monitor the Lyophilization of frozen PEGdA.

Summary of Team Goals:

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