Title: Microencapsulation of Tissues and Cells

Team Members:

Joe Zechlinski – Team Leader
Bryan Baxter – Communications
Timothy Eng – BWIG Representative
April Zehm – BSAC Representative

Client:

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Date: 09/16/05 – 09/22/05

Problem Statement:

A method of treatment for various diseases incorporates the encapsulation of cells and tissues and the time-released delivery of chemical mediators. Presently, this method encounters a slew of problems, including a lack of biocompatibility, limited immunoprotective properties, and hypoxia. The client desires the development of microcapsules that would permit the successful release of hormones (namely, testosterone and inhibin) by encapsulated cells into animals, while avoiding the aforementioned problems.

Last Week's Goals:

- Meet with Prof. Beebe to discuss micro-fluid device.
- Get MA-10 cells in culture; tentatively plan viability experiments starting in 1.5 wks

This Week's Goals:

- Start PEG synthesis and meet with Prof. Palecek regarding micro-channel device production
- Possibly start viability assay using manually-produced millicapsules

Summary of Accomplishments:

- Met with Prof. Beebe
- MA-10 cells in culture, plenty of healthy cells to begin experiments

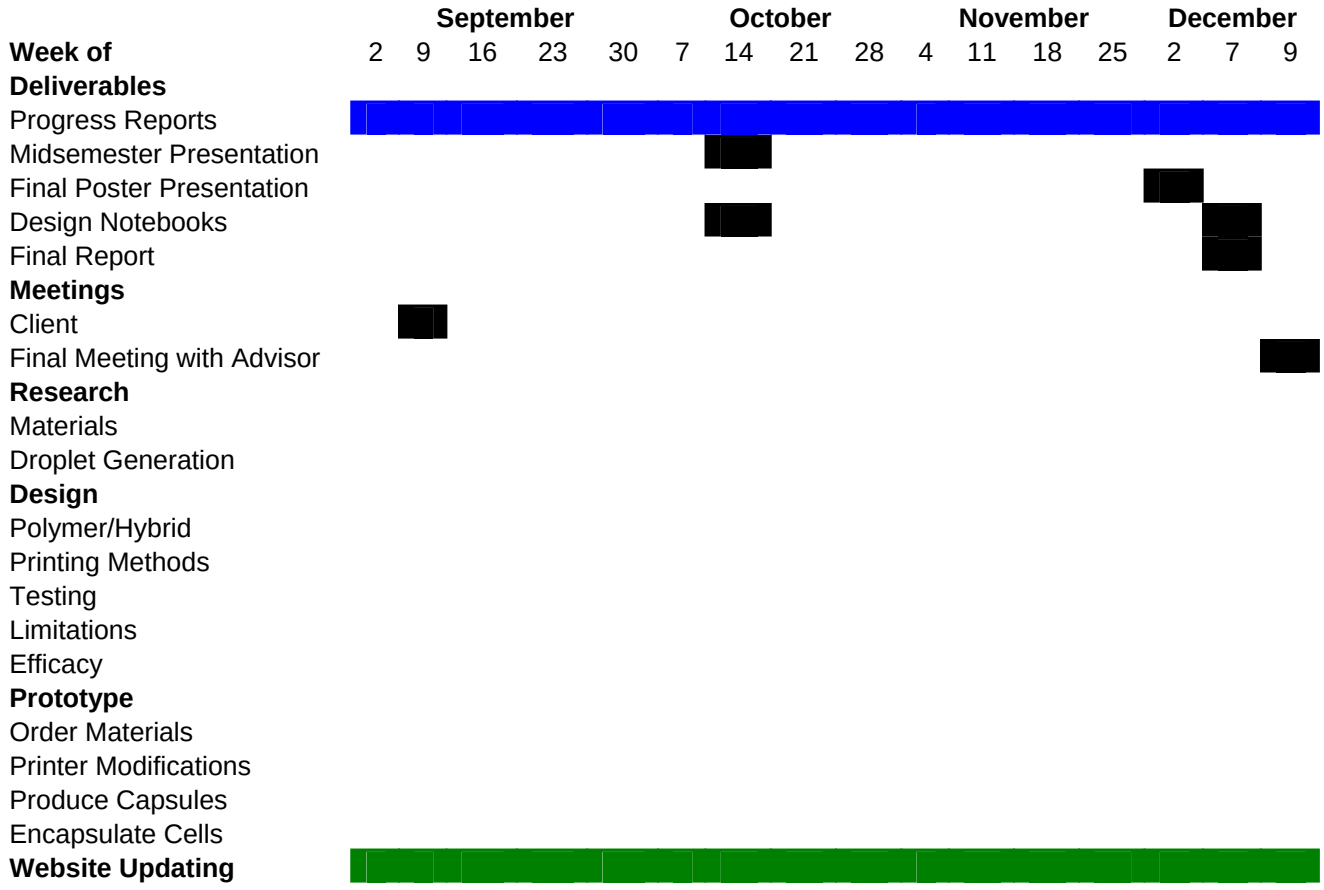
Difficulties: Must learn LIVE/DEAD assay protocol and determine suitable site to conduct assay. May be able to use VA lab LIVE/DEAD resources. Must also transport UV light source to VA to polymerize gels for first experiment, or transport cells to ECB.

Activities:

Team: 2.5 hours – team/advisor meeting (1 hr), and cell culture/lab intro at VA lab (1.5 hr)
Joe Zechlinski: 0.5 hours – microfluidics research
Bryan Baxter: 0.5 hours – microfluidics research
Tim Eng: 1 hours – mtg with Prof. Beebe, microfluidics research
April Zehm: 1 hour – mtg with Prof. Beebe, microfluidics research

Total time this week: 5.5 hours
Cumulative Project time: 13.0 hours

Project Timeline:



Team **Joe Zechlinski** **Bryan Baxter** **Tim Eng** **April Zehm**