

Osteochondral Transplant System—Week 8-9, Progress Report

Client: Dr. Brian Walczak

Advisor: Dr. Krishanu Saha

Team:	Rodrigo Umanzor (Leader)	umanzor@wisc.edu
	Nicholas Zacharias (BWIG & BSAC)	nazacharias@wisc.edu
	Eduardo Enriquez (Communicator)	eenriquez2@wisc.edu
	Bilin Loi (BPAG)	bloi@wisc.edu

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Problem Statement

Osteochondral allografting is a common procedure performed on patients that require replacement of diseased bone. Current methods of implantation require the application of mechanical forces that have a detrimental effect on the live chondrocytes present on the implant. Maximizing the amount of viable tissue during and after the surgery is a crucial factor for the success of the procedure. Hence, the client requests a delivery system that will reduce the amount of mechanical forces required to securely place the implant into the donor site.

Previous Week's Goals

- Purchase fresh cow femurs on Friday from Underground Butcher ✓
- Extract bone plugs and image using the confocal microscope at the WIMR ✓

Summary of Team Accomplishments

- A new guide tool was fabricated given that the guide tool we had was not compatible with the hole saw we intended to use
- Femurs purchased on Friday (03/17/17) were used to practice extraction with the new guide tool
- D-PBS and D-MEM media were obtained from Dr. Saha
- New femurs were purchased on 03/23/17 and used to extract bone plugs for imaging
- After experimentation, cartilage samples were imaged at the WIMR using a confocal microscope (1 hour and 24 hour periods)

This Week's Goals (Team and Individual)

- Construct a protocol for data processing of images obtained from confocal microscope
- Begin to obtain percent viability values for data samples

Project Difficulties

- The samples imaged after the 24-hour incubating period had little to no viable cells. Upon inspection prior to staining the media was yellow, indicating that the solution was basic.

Expenses

- 3 bovine femoral condyles were purchased from Conscious Carnivore (\$15.79)
- 1 hand saw was purchased from Home Depot (\$7.88)

Individual Activity Log

Member	Task	Time (hr)	Weekly Total (hr)	Semester Total (hr)
Rodrigo (Leader)	Weekly progress report	0.5	26	52
	Adviser meeting	0.5		
	Team meeting	0.5		
	Individual research & team work	24.5		
Eduardo (Communicator)	Team meeting	0.5	23	46
	Adviser meeting	0.5		
	Individual research & team work	22		
Nick (BSAC & BWIG)	Adviser meeting	0.5	1	22
	Team Meeting	0.5		
	Individual research & work	N/A (gone for spring break)		
Bilin (BPAG)	Adviser Meeting	0.5	8	30
	Team Meeting	0.5		
	Individual research & work	7		

