



# Stem Cells Training Program

**Lecture: 9:00 – 10:00 AM**

**Training Program: 10:00AM – 11:45AM**

**Break: 12:00 – 1:00 PM**

**Brief Discussion: 1:30 – 2:30 PM**

**Scheduled time can be adjusted according to the lectures and laboratory works. The students will be in 3 groups, each group has four trainees**

## 1<sup>st</sup> Week

Day	Lectures	Group 1		Group 2		Group 3	
		SCU Member	Tasks	SCU Member	Tasks	SCU Member	Tasks
Saturday	Stem Cells and Principles of Cell Culture <b>By: Hessa Al Shammari</b>	Hessa Al Shammari	- Orientations	Hessa Al Shammari	- Orientations	Hessa Al Shammari	- Orientations
Sunday	Brief Intro. Histology and Techniques <b>By: Mani</b>	Thajudeen & Mani	- Animal Dissection - Sample collection - Gross examination - Fixation (10:00AM – 11:45AM)	Hessa Al Shammari	- Cell culture techniques (Thawing, passage, count and Freezing) (10:00AM-11:45AM)	Vishnu	- Immunocytochemistry (10:00AM-11:45AM)
		<b>Good Laboratory Practice with Dos and Don'ts ( General Introduction - Dr. Amer) 1:30 PM – 2:30PM</b>					
Monday	FACS Basics, Principle, Applications <b>By:Thajudeen</b>	Mani	- Tissue processing and Staining (Manual/Automated) - Staining (10:00AM – 2:30PM)	Thajudeen	- FACS (Sample preparation, Acquisition and Analysis) (10:00AM – 2:30PM)	Vishnu	- Cell harvesting - RNA isolation Manual/Automated - Quantification (10:00AM – 2:30PM)
Tuesday	Strategies of Embryonic Stem Cells Culture <b>By: Dr. Amer</b>	Hessa Al Shammari	- Cell culture techniques (Thawing, passage, count and Freezing) (10:00AM-11:45AM)	Vishnu	- Immunocytochemistry (10:00AM-11:45AM)	Thajudeen & Mani	- Animal Dissection - Sample collection - Gross examination - Fixation (10:00 AM – 11:45AM)
		<b>Brief about Phenotype and Genotype analysis Dr. Amer ( 1:30 PM – 2:30PM)</b>					
Wednesday	IPS <b>By: Dr.Amer</b>	Thajudeen	- FACS (Sample preparation, Acquisition and Analysis) (10:00AM – 2:30PM)	Vishnu	- Cell harvesting - RNA isolation Manual/Automated - Quantification (10:00AM – 2:30PM)	Mani	- Tissue processing and Staining (Manual/Automated) - Staining (10:00AM – 2:30PM)

## 2<sup>nd</sup> Week

Day	Lectures	Group 1		Group 2		Group 3	
		<i>SCU Member</i>	<i>Tasks</i>	<i>SCU Member</i>	<i>Tasks</i>	<i>SCU Member</i>	<i>Tasks</i>
Saturday	PCR <b>By: Vishnu</b>	Vishnu	- Real-Time PCR (10:00AM – 11:45AM)	Thajudeen & Mani	- Animal Dissection - Sample collection - Gross examination - Fixation (10:00AM – 11.45AM)	Hessa Al Shammari	- Cell culture techniques (Thawing, passage, count and Freezing) (10:00AM-11:45AM)
		<b>Brief about Adult Vs Embryonic Stem cells – Dr.Amer (1:30PM – 2:30PM)</b>					
Sunday	Strategies of Stem Cells Differentiation and Differentiation Analysis <b>By: Dr. Amer</b>	Hessa Al Shammari	- cDNA Synthesis - PCR - Gel Electrophoresis (10:00AM – 2:30PM)	Mani	- Tissue processing and Staining (Manual/Automated) - Staining (10:00AM – 2.30PM)	Vishnu	- Real-Time PCR (10:00AM-11:45AM)
Monday	Stem Cell's Application <b>By: Dr.Amer</b>	Vishnu	- Cell harvesting - RNA isolation Manual/Automated - Quantification (10:00AM – 2:30PM)	Hessa Al Shammari	- cDNA Synthesis - PCR - Gel Electrophoresis (10:00AM – 2:30PM)	Thajudeen	- FACS (Sample preparation, Acquisition and Analysis) (10:00AM – 2:30PM)
Tuesday	Stem Cell in Tissue Engineering <b>by: Hessa Al Shammari</b>	Mani	- Immunocytochemistry (10:00AM-11:45AM)	Vishnu	- Real-Time PCR (10:30AM – 11:45AM)	Hessa Al Shammari	- cDNA Synthesis - PCR - Gel Electrophoresis (10:00AM – 2:30PM)
Wednesday	Students Presentation	<b>Group Discussion with all SCU members</b>					