

Foundations of Biomedical Research 2021

Week 5: The Birth and Destruction of Proteins – Catherine Denicourt

Time	Monday September 27	Tuesday September 28	Wednesday September 29	Thursday September 30	Friday October 1
8:30	Lecture 1: Ribosome Biogenesis and basic translation. (CD)	Lecture 3 Mechanism and Regulation of Protein folding. (KM)	Biostats/ Bioinformatics Exercise	Lecture 6: Protein degradation mechanisms:- Lysosomal and autophagy. (KV)	Lecture 8: Pathologies associated with defective protein degradation mechanisms. (KV)
9:00					
9:30	Lecture 2: Translational Control Mechanisms. (GD)	Lecture 4: Pathologies Associated with Protein Misfolding (Neurodegenerative disorders, Prions). (SZ)	Break	Lecture 7: Mitochondrial stress, protein homeostasis and aging (HK)	Breakout: Journal Club (CD, SC, GD, SZ, HK and KV)
10:00	Break	Break	Lecture 5: Protein degradation mechanisms:-Ubiquitin- proteasome. (SC)	Break	Break
10:30	Breakout: Discussion on translational regulation. (CD and GD)	Breakout: Time for Journal Club Preparation		Time for Journal Club Preparation	Breakout: Journal Club (CD, SC, GD, SZ, HK and KV)

CD – Catherine Denicourt

GD – Guangwei Du

KM – Kevin Morano

SZ – Sheng Zhang

SC – Shane Cunha

KV – Kartik Venkatachalam

HK- Hyun-Eui Kim

Learning Objectives

Week 5: The Birth and Destruction of Proteins

- Describe the basic components of the translation machinery
- Discuss the different mechanisms and signaling pathways regulating mRNA translation
- Recognize that defects in translation and protein degradation can result in disease
- Explain the mechanisms of protein folding and the cellular consequences of protein misfolding
- Describe the different mechanisms governing cellular protein degradation