

3. Mammalian Cell Culture workshop

Course Details

Lecture 1: Introduction to animal cell culture

- Mammalian cell culture- overview and importance
- Cell culture environment & Aseptic conditions
- Cell culture growth medium and components
- Cell culture laboratory and equipment

Lecture 2: Animal cell culture: cell revival

- Cell culture revival methods
- Best practises for reviving cell
- Important considerations
- Detailed methodology with demonstration by video

Lecture 3: Animal cell culture: cell propagation

- Animal cell growth and growth curve
- Trypsinization and cell passaging- overview and concept
- Detailed protocol with demonstration by video

Lecture 4: Animal cell culture: cell freezing

- Animal cell storage requirements
- Cell freezing- overview and concept
- Cell freezing medium and components
- Cell freezing protocol with demonstration by video

Lecture 5: Cell counting

- Cell counting-concept and importance
- Cell counting methods
- Haemocytometer- manual method
 - Principle
 - Methodology with demonstration by video
 - Advantages & disadvantages
- Cell Sceptre- automated cell counter
 - Principle
 - Methodology with demonstration by video
 - Advantages & disadvantages

Lecture 6: Transfection

- Transfection-Concept and overview
- Nucleic acid transfection methods
- Nonrival methods
 - Types
 - Principle
 - Advantages & disadvantages
- Viral methods
 - Types
 - Principle
 - Advantages & disadvantages

Lecture 7: Contaminations in cell culture

- Challenges in animal culture
- Type of contaminations
- Contamination detection methods
- How to avoid contaminations

Lecture 8: 3D cell culture

- 3D cell culture: Overview, and importance
- Types of 3D culture
 - Organoid 3D culture
 - Spheroid 3D culture
- Methodology with demonstration by video
- Advantages and applications