Unit 11 - Week 9: Cell Biology (Part 2)

Course outline

How does an NPTEL online course work?

Week 0: Prerequisites

Week 1: Basics of Laboratory Research

Week 2: Electrophoresis (Part 1)

Week 3: Electrophoresis (Part 2)

Week 4: Chromatography (Part 1)

Week 5: Chromatography (Part 2)

Week 6: Chromatography (Part 3)

Week 7: Immunological Techniques

Week 8: Cell Biology (Part 1)

Week 9: Cell Biology (Part 2)

- Lec 1: Microscopy (Part 1)
- Lec 2: Microscopy (Part 2)
- Lec 3: Cell Biology Experiments
- Lec 4: Flow cytometry
- Quiz : Assignment 9
- Week 9: Feedback form

Week 10: Molecular Biology (Part 1)

Week 11: Molecular Biology (Part 2)

Week 12: Summary and conclusions

Live Session

Text Transcripts

Assignment 9

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-11-18, 23:59 IST.

1) How man dichoric mirrors are present in an epifluorescence microscope? *1 point*

- 1
- 2
- 3
- 4

No, the answer is incorrect.
Score: 0
Accepted Answers:
1

2) Kuffer cells are present in *1 point*

- Liver
- Kidney
- Heart
- Lungs

No, the answer is incorrect.
Score: 0
Accepted Answers:
Liver

3) In flow cytometry, the side scattered channel captures data related to the *1 point*

- Refractive index of cell
- Cell shape
- Cell granularity
- Cell Size

No, the answer is incorrect.
Score: 0
Accepted Answers:
Cell granularity

4) In a cell cycle analysis by flow cytometry, the cells are stained with *1 point*

- DNA binding dye
- Membrane specific dye
- Protein binding dye
- RNA specific dye

No, the answer is incorrect.
Score: 0
Accepted Answers:
DNA binding dye

5) In apoptotic cells, annexin V binds to phosphatidyl serine (PS) as *1 point*

- In dead cells annexin V internalize and binds to phospatidyl serine
- PS in apoptotic cells translocate to extracellular side of plasma membrane
- PS moves to cytoplasm in dead cells and thus accesible to annexin V
- PS in live cells moves to cytoplasmic side of plasmamembrane

No, the answer is incorrect.
Score: 0
Accepted Answers:
PS in apoptotic cells translocate to extracellular side of plasma membrane

6) Compensation is required in flow cytometry because *1 point*

- Quenching of fluorescence by the other fluorophore
- Spectral overlap between the two fluorophores
- low intensity of fluorophore signal
- FRET occur between two fluorophores

No, the answer is incorrect.
Score: 0
Accepted Answers:
Spectral overlap between the two fluorophores

7) In flow cytometry, selection of data acquisition from a distinct fraction of cells from a cell population can be achieved by *1 point*

- Counter staining
- Flourescence compensation
- Gating
- Double staining

No, the answer is incorrect.
Score: 0
Accepted Answers:
Gating

8) Fixation of a biological sample can be done by treating with *1 point*

- 5% BSA
- Methanol
- 1x PBS
- Triton-X100

No, the answer is incorrect.
Score: 0
Accepted Answers:
Methanol

9) Permeabilization of fixed RBCs on a slide can be done by treating with 1% Triton-X100. What is the purpose of this step? *1 point*

- To lyse the RBCs
- To preserve the internal structure of the cells
- To make the membrane porous
- To dehydrate the sample

No, the answer is incorrect.
Score: 0
Accepted Answers:
To make the membrane porous

10) What would be the maximum resolution that can be achieved if a sample is illuminated by green light (514nm) and observed through an oil immersion objective with numerical aperture of 1.5? *1 point*

- 171nm
- 166nm
- 170nm
- 177nm

No, the answer is incorrect.
Score: 0
Accepted Answers:
171nm

11) Filipin staining can be used to study the phagocytosis of latex beads by J774A.1 cells. Filipin stains the *1 point*

- Periplasm
- Cell membrane
- Cytoskeletal proteins
- Integral proteins of the membranes

No, the answer is incorrect.
Score: 0
Accepted Answers:
Cell membrane

12) Water in biological samples diffract electron rays and create noise in SEM or TEM images. Water is removed by treating the sample with *1 point*

- Air dried in a desiccated environment
- Overnight with 1% Osmium tetraoxide
- Graded series of ethanol
- 2-5% Glutaraldehyde

No, the answer is incorrect.
Score: 0
Accepted Answers:
Graded series of ethanol

13) The coating of specimen with gold palladium is performed to *1 point*

- increase sample charging on electron bombardment
- make the specimen more conductive
- decrease emission of secondary electrons
- increase penetration of Primary electrons

No, the answer is incorrect.
Score: 0
Accepted Answers:
make the specimen more conductive

14) In TEM, the electron beam is focused on the specimen with the help of *1 point*

- Column
- Stage
- Condenser lens
- Projection lens

No, the answer is incorrect.
Score: 0
Accepted Answers:
Condenser lens

15) Malaria parasite culture is synchronized with the help of *1 point*

- 5% DMSO
- 0.1% Paraformaldehyde
- 1% Glutaraldehyde
- 5% Sorbitol

No, the answer is incorrect.
Score: 0
Accepted Answers:
5% Sorbitol