Week 3: Assignment 2

Due: 2019-01-16, 23:59 IST.

**Week 3 Assignment**

The due date for submitting this assignment is January 16, 2019. Please make sure to submit your assignment before the deadline.

**Section 1: Self-assessment**

You are required to answer the following questions to assess your understanding of the topic:

1. Describe the process of two-dimensional gel electrophoresis (2-DE).
2. Explain the importance of SDS-PAGE in the context of 2-DE.
3. Discuss the role of silver staining in the identification of proteins.
4. Compare and contrast the advantages and disadvantages of using Coomassie blue staining for protein detection.
5. Describe how 2-DE is used in proteomics research.
6. Explain the significance of protein databases in 2-DE studies.
7. Discuss the role of MS/MS in the identification of proteins.
8. Explain the importance of protein function prediction in proteomics.
9. Describe the role of proteomics in disease diagnosis.
10. Discuss the role of 2-DE in drug discovery.

**Section 2: Application**

You are required to answer the following questions to demonstrate your understanding of the application of 2-DE:

1. Describe the process of 2-DE and explain how it is used to separate proteins.
2. Discuss the importance of sample preparation in 2-DE.
3. Explain how 2-DE is used in the study of protein expression in different conditions.
4. Describe the role of 2-DE in the study of protein interactions.
5. Discuss the role of 2-DE in the study of protein modifications.
6. Explain how 2-DE is used in the study of protein folding.
7. Discuss the role of 2-DE in the study of protein phosphorylation.
8. Explain how 2-DE is used in the study of protein degradation.
10. Discuss the role of 2-DE in the study of protein secretion.

**Section 3: Discussion**

You are required to answer the following questions to demonstrate your understanding of the discussion:

1. Discuss the importance of proper sample preparation in 2-DE.
2. Explain how 2-DE is used to study the protein expression in different tissues.
3. Describe the role of 2-DE in the study of protein expression in different ages.
4. Explain how 2-DE is used to study the protein expression in different species.
5. Discuss the role of 2-DE in the study of protein expression in different cell lines.
6. Explain how 2-DE is used to study the protein expression in different diseases.
7. Describe the role of 2-DE in the study of protein expression in different environmental conditions.
8. Explain how 2-DE is used to study the protein expression in different pathological conditions.
9. Discuss the role of 2-DE in the study of protein expression in different physiological conditions.
10. Explain how 2-DE is used to study the protein expression in different pathological conditions.

**Section 4: Assignment**

You are required to answer the following questions to demonstrate your understanding of the assignment:

1. Describe the process of 2-DE and explain how it is used to separate proteins.
2. Discuss the importance of sample preparation in 2-DE.
3. Explain how 2-DE is used in the study of protein expression in different conditions.
4. Describe the role of 2-DE in the study of protein interactions.
5. Discuss the role of 2-DE in the study of protein modifications.
6. Explain how 2-DE is used in the study of protein folding.
7. Discuss the role of 2-DE in the study of protein phosphorylation.
8. Explain how 2-DE is used in the study of protein degradation.
10. Discuss the role of 2-DE in the study of protein secretion.

**Section 5: Assessment**

You are required to answer the following questions to demonstrate your understanding of the assessment:

1. Discuss the importance of proper sample preparation in 2-DE.
2. Explain how 2-DE is used to study the protein expression in different tissues.
3. Describe the role of 2-DE in the study of protein expression in different ages.
4. Explain how 2-DE is used to study the protein expression in different species.
5. Discuss the role of 2-DE in the study of protein expression in different cell lines.
6. Explain how 2-DE is used to study the protein expression in different diseases.
7. Describe the role of 2-DE in the study of protein expression in different environmental conditions.
8. Explain how 2-DE is used to study the protein expression in different pathological conditions.
9. Discuss the role of 2-DE in the study of protein expression in different physiological conditions.
10. Explain how 2-DE is used to study the protein expression in different pathological conditions.