

Chapter 6 – Proteins: Three-Dimensional Structure

Objective	In-text reading	Pre-class materials/activities	In-class materials/activities	Practice problems from text
1. Identify, analyze and compare the properties of various 2D and 3D protein structures derived from specific amino acid sequences	6.1, 6.2	Ch 6 – Proteins 3D Structure (Hayden Lecture) Protein Structure (video)	S3: Structure of the protein α helix (POGIL)	5 th 1, 3, 9, 23, 25 4 th 1, 3, 9, 23, 25 3 rd 1, 2, 7, 16, 17 S3: Post Activity 1-4 (posted on moodle)
2. Compare and contrast the three representations (stick, ribbon space filling) of the structural features of the protein helix	6.2	Ch 6 – Proteins 3D Structure (Hayden Lecture) Protein Structure (video)	S3: Structure of the protein α helix (POGIL)	See BIOINFORMATICS brief exercises 1 and 2 on the WileyPLUS learning space online
3. Describe and identify the forces that stabilize the different levels of protein structure	6.4	Ch 6 – Proteins 3D Structure (Hayden Lecture) Conformational Stability (video)	S4: 3-D Structure of Proteins (POGIL)	5 th 15, 28, 11, 7 4 th 15, 28, 11, 6 3 rd 19, 5, 4
4. Analyze and describe the thermodynamic forces that direct and stabilize 3D protein structure	6.4, 6.5	Ch 6 – Proteins 3D Structure (Hayden Lecture) Conformational Stability (video) Protein Folding Mechanism (video)	S4: 3-D Structure of Proteins (POGIL)	S4: Post Activity Skills Exercises #1 – 5. (can be found at the end of S4 in workbook)
5. Work in teams to build a model and use it to illustrate principles of protein folding and structure	6.4, 6.5	The Protein Folding Problem (TED talk)	S4: 3-D Structure of Proteins (POGIL)	