

# Chapter 11: The Cell Cycle

## 11.1: Overview of the Cell Cycle

### Objectives

- 1. Describe the stages of the cell cycle.
- 2. Explain the role of checkpoints in the cell cycle.
- 3. Discuss the importance of DNA replication.
- 4. Identify the key proteins involved in cell cycle regulation.
- 5. Compare mitosis and meiosis.
- 6. Describe the role of telomeres in chromosome stability.
- 7. Explain the consequences of cell cycle dysregulation.
- 8. Discuss the role of the cell cycle in tissue homeostasis.
- 9. Identify the key components of the cell cycle machinery.
- 10. Describe the role of cyclins and CDKs in cell cycle regulation.
- 11. Explain the role of the APC/C complex in cell cycle regulation.
- 12. Discuss the role of the p53 pathway in cell cycle regulation.
- 13. Describe the role of the Rb protein in cell cycle regulation.
- 14. Explain the role of the E2F transcription factor in cell cycle regulation.
- 15. Discuss the role of the MDM2 protein in cell cycle regulation.
- 16. Describe the role of the p16 protein in cell cycle regulation.
- 17. Explain the role of the p21 protein in cell cycle regulation.
- 18. Discuss the role of the p27 protein in cell cycle regulation.
- 19. Describe the role of the p57 protein in cell cycle regulation.
- 20. Explain the role of the p14 protein in cell cycle regulation.



### Summary

The cell cycle is a highly regulated process that ensures the accurate division of genetic material.

