

Table of Contents

Chapter 2	Chemical Foundations	1
Chapter 3	Protein Structure and Function	3
Chapter 4	Basic Molecular Genetic Mechanisms	7
Chapter 5	Molecular Genetic Techniques	11
Chapter 6	Genes, Genomics, and Chromosomes	15
Chapter 7	Transcriptional Control of Gene Expression	19
Chapter 8	Post-transcriptional Gene Control	23
Chapter 9	Visualizing, Fractionating, and Culturing Cells	26
Chapter 10	Biomembrane Structure	29
Chapter 11	Transmembrane Transport of Ions and Small Molecules	32
Chapter 12	Cellular Energetics	36
Chapter 13	Moving Proteins into Membranes and Organelles	40
Chapter 14	Vesicular Traffic, Secretion, and Endocytosis	45
Chapter 15	Cell Signaling I: Signal Transduction and Short-Term Cellular Responses	49
Chapter 16	Cell Signaling II: Signaling Pathways That Control Gene Activity	53
Chapter 17	Cell Organization and Movement I: Microfilaments	56
Chapter 18	Cell Organization and Movement II: Microtubules and Intermediate Filaments	60
Chapter 19	Integrating Cells into Tissues	63
Chapter 20	Regulating the Eukaryotic Cell Cycle	65
Chapter 21	Cell Birth, Lineage, and Death	69
Chapter 22	The Molecular Cell Biology of Development	72
Chapter 23	Nerve Cells	74
Chapter 24	Immunology	78
Chapter 25	Cancer	81