Chapter 1 Genomic DNA isolation (Bacteria, plant, and animal cells/tissues)
Chapter 2 RNA isolation from mammalian cells/tissues, Drosophila, and Caenorhabditis elegans using monophasic lysis reagent
Chapter 3 Reverse-transcription polymerase chain reaction
Chapter 4 Quantitative reverse-transcription polymerase chain reaction: Real-time polymerase chain reaction
Chapter 5 Agarose gel electrophoresis
Chapter 6 3'RACE (random amplification of cDNA end
Chapter 7 5'RACE (Random amplification of cDNA end
Chapter 8 Plasmid isolation and purification (Alkaline lysis method)
Chapter 9 Preparation of competent cells (Bacterial cells) and transformation (Hanahan's method)
Chapter 10 Molecular gene cloning
Chapter 11 End-labeling of DNA (5'end labeling by T4 polynucleotide kinase)
Chapter 12 Sodium dodecyl sulphate-polyacrylamide gel electrophoresis and native polyacrylamide gel electrophoresis
Chapter 13 Western blotting
Chapter 14 Electrophoretic mobility shift assay for DNA-protein interaction
Chapter 15 Silver staining of proteins in acrylamide gel compatible with mass spectrometry: Acidic method (From Shevchenko et al., 1996)
Chapter 16 Animal cell culture (Adherent cells)
Chapter 17 Cell viability by MTT assay
Chapter 18 Lactate dehydrogenase assay
Chapter 19 Luciferase assay
Chapter 20 Co-immunoprecipitation
Chapter 21 Protein purification (His-tagged proteins by immobilized metal affinity chromatography)
Chapter 22 Subcellular fractionation by differential centrifugation (Separating nuclear, membrane, and cytosolic fraction)
Chapter 23 DNase 1 footprinting
Chapter 24 Chromatin immunoprecipitation-qPCR
Chapter 25 Flow cytometry for cell surface markers
Chapter 26 Basics of bioinformatics
Chapter 27 GST pull down assay
Chapter 28 Fluorescence *In Situ* hybridization from paraffin-embedded tissues
Chapter 29 An overview of yeast two-hybrid assay
Chapter 30 Enzyme-linked immunosorbent assay