

Chapter 15 - The Metabolism of Glycogen in Animals

15.1 The Structure and Function of Glycogen

- Vertebrate Animals Require a Ready Fuel Source for Brain and Muscle
- Glycogen Granules Have Many Tiers of Branched Chains of D-Glucose

15.2 Breakdown and Synthesis of Glycogen

- Glycogen Breakdown Is Catalyzed by Glycogen Phosphorylase
- Glucose 1-Phosphate Can Enter Glycolysis or, in Liver, Replenish Blood Glucose
- The Sugar Nucleotide UDP-Glucose Donates Glucose for Glycogen Synthesis
- BOX 15-1 Carl and Gerty Cori: Pioneers in Glycogen Metabolism and Disease
- Glycogenin Primes the Initial Sugar Residues in Glycogen

15.3 Coordinated Regulation of Glycogen Breakdown and Synthesis

- Glycogen Phosphorylase Is Regulated by Hormone-Stimulated Phosphorylation and by Allosteric Effectors
- Glycogen Synthase Also Is Subject to Multiple Levels of Regulation