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Mitochondria1 respiration rate and metabolic control analysis; 4.8 Overall parameters of energy transduction; 4.9 Reversed electron transfer and the proton circuit driven by ATP hydrolysis; 4.10 ATP synthesis driven by an artificial protonmotive force; 4.11 Kinetic competence of p in the proton circuit; 4.12 Light-dependent ATP synthesis by bovine heart ATP synthase; CHAPTER 5. RESPIRATORY CHAINS; 5.1 Introduction
5.2 Components of the mitochondria1 respiratory chain5.3 The sequence of redox carriers in the respiratory chain; 5.4 The mechanism of electron transfer; 5.5 Proton translocation by the respiratory chain: 'loops', ' conformational pumps' or both?; 5.6 Complex I (NADH-UQ oxidoreductase); 5.7 Delivering electrons to ubiquinone without proton translocation; 5.8 Ubiquinone and complex III (bc1 or UQ-CYT c oxidoreductase); 5.9 Cytochrome c and complex IV (cytochrome c oxidase; ferrocyanochrome c: O₂ oxidoreductase)
5.10 Overall proton and charge movements catalysed by the respiratory chain: correlation with the P/O ratio5.11 Superoxide production by complexes I and III; 5.12 Oxidative stress; 5.13 The nicotinamide nucleotide transhydrogenase; 5.14 Electron transport in mitochondria of non-mammalian cells; 5.15 Bacterial respiratory chains; CHAPTER 6. PHOTOSYNTHETIC GENERATORS OF PROTONMOTIVE FORCE; 6.1 Introduction; 6.2 The light reaction of photosynthesis in Rhodospirillum rubrum and related organisms; 6.3 The generation by illumination or respiration of p in photosynthetic bacteria
6.4 The electron-transfer and light-capture pathway in green plants and algae

Sommario/riassunto

This new edition of Bioenergetics presents a clear and up-to-date explanation of the chemiosmotic theory and covers mitochondria, bacteria, and chloroplasts. It takes account of the many newly determined structures, such as ATP synthase and the two photosystems of photosynthesis, that provide molecular insight into chemiosmotic energy transduction. This edition includes additional color figures of protein structures and many newly drawn illustrations designed to enable the reader to grasp the fundamental insights that are derived from knowing the structure. Every chapter has been extens
