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Nota di contenuto	Part A -- 1 Na+/K+-ATPase: A Perspective -- 2 Na+/K+-ATPase and Its Role in Signal Transduction -- 3 Na+ K+-ATPase Cell Signaling Pathways and Cancer -- 4 Calcium Controls the P2-ATPase Mediated Homeostasis: Essential Role of NaAF -- 5 Na+/K+-ATPase 4: An Isoform Dedicated to Sperm Function -- 6 The Role of the 2nd Na+ Pump in Mammals and Parasites -- 7 Myocardial Na+/K+-ATPase and SERCA: Clinical and Pathological Significance from a Cytological perspective -- 8 Understanding the Dysfunction of Na+/K+-ATPase in Rapid-Onset Dystonia- Parkinsonism and Amyotrophic Lateral Sclerosis -- 9 Activity of Membrane ATPases in Human Erythrocytes Under the Influence of Highly Hydroxylated Fullerenol -- 10 Xenobiotics-

mediated Modulation of ATPases and Biomedical Implications -- 11 Emerging Role of Dysadherin in Metastasis -- 12 The Astrocytic Na+/K+-ATPase - Stimulation by Increased Extracellular K+, -Adrenergic Activation, Ouabain-mediated Signaling, and Interaction with the Transporter NKCC1 -- 13 Uncoupling of P-type ATPases -- 14 Phospholemman: A Brief Overview -- 15 Regulation of the Cardiac Na+/K+-ATPase by Phospholemman -- 16 Regulation of Brain Na+/K+- ATPase Activity by Noradrenaline with Particular Reference to Normal and Altered Rapid Eye Movement Sleep -- 17 Regulation Na+/K+-ATPase Activity in the Nervous System -- 18 Regulation of Membrane Na+/K+ ATPase in Health and Disease -- 19 Redox Regulation of the Na+/K+ ATPase in the Cardiovascular System -- 20 Regulation of Na+/K+-ATPase in Pulmonary Vasculature -- 21 Exercise-induced Regulation of the Na, K-pump in Skeletal Muscles -- 22 Advances in the Understanding of Renal Proximal Tubular Na+/K+-ATPase Regulation by Parathyroid Hormone and Dopamine -- 23 Regulation of Na+/ K+-ATPase in Epithelial-Mesenchymal Transition and Cancer -- 24 Metal Based Compounds, Modulators of Na+/K+-ATPase with Anticancer Activity.

Sommario/riassunto

Na+-K+ ATPase or Na-pump ATPase, a member of “P”-type ATPase superfamily, is characterized by association of multiple isoforms mainly of it’s - and - subunits. At present four different - (-1,-2,-3 and -4) and three - (-1, -2, and -3) isoforms have been identified in mammalian cells and their differential expressions are tissue specific. Regulation of Na+-K+ ATPase activity is an important but a complex process, which involves short-term and long-term mechanisms. Short-term regulation of Na+-K+ ATPase is either mediated by changes in intracellular Na+ concentrations that directly affect the Na+-pump activity or by phosphorylation/dephosphorylation-mediated by some stimulants leading to changes in its expression and transport properties. On the other hand, long-term regulation of Na+-K+ ATPase is mediated by hormones, such as mineralocorticoids and thyroid hormones, which cause changes in the transcription of genes of - and - subunits leading to an increased expression in the level of Na+-pump. Several studies have revealed a relatively new type of regulation that involves the association of small, single span membrane proteins with this enzyme. These proteins belong to the FXYD family, the members of which share a common signature sequence encompassing the transmembrane domain adjacent to the isoform(s) of - subunits of Na+-K+ ATPase. Considering the extraordinary importance of Na+-K+ ATPase in cellular function, several internationally established investigators have contributed their articles in the monograph entitled “Regulation of Membrane Na+-K+ ATPase” for inspiring young scientists and graduate students to enrich their knowledge on the enzyme, and we are sure that this book will soon be considered as a comprehensive scientific literature in the area of Na+-K+ ATPase regulation in health and disease.