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Sommario/riassunto	Extracellular ATP is currently recognized as one of the most widely distributed neurotransmitters and neuromodulators in the peripheral and central nervous system. ATP-gated P2X receptors are expressed by neurons, glial and many other non-neuronal cells and represent an attractive target for therapeutic interventions. Diverse molecular and cellular mechanisms have been identified for P2X receptor functioning, including the ability to enlarge the size of the ion pore associated with the release of several key immune molecules. A major recent breakthrough was the determination of the X-ray crystal structures of zebrafish P2X4 receptor in ATP-bound and ATP-free states. The P2X receptor research field is rapidly growing, as evidenced by the almost 2000 papers published in the last 5 years. However, despite the fundamental signalling function of extracellular ATP in the nervous system, the widespread roles of P2X receptors have not been widely elucidated and presented in textbooks. In this volume of papers we aim to gather a collection of high quality papers, detailing the latest

insights from the most accomplished international P2X receptor researchers. Importantly, basic research into P2X receptors has a strong translational impact and our collection of articles could be a valuable guide for the development of new pharmacological and biotechnological tools addressing the function of P2X receptors. Within this collection we plan to cover receptor structure-function relationships, receptors trafficking, to highlight the special properties of P2X receptors and their pharmacological profiles, and to describe the translational aspects of cellular ATP signaling in pain and in other neurological and vascular diseases.