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Nota di contenuto	1. Classification and Gene Structure of Aquaporins -- 2. Protein Structure and Modification of Aquaporins -- 3. Expression Regulation and Trafficking of Aquaporins -- 4. Transport Characteristics of Aquaporins -- 5. Non-transport Functions of Aquaporins -- 6. The Evolutionary Aspects of Aquaporin Superfamily -- 7. Aquaporins in Nervous System -- 8. Aquaporins in Cardiovascular System -- 9. Aquaporins in Respiratory System -- 10. Aquaporins in Digestive System -- 11. Aquaporins in Urinary System -- 12. Aquaporins in Reproductive System -- 13. Aquaporins in Immune System.-14. Aquaporins in Eye -- 15. Aquaporins in Skin -- 16. Aquaporins in Glandular Secretion -- 17. Aquaporins in Fetal Development -- 18. Aquaporins in Diabetes Insipidus -- 19. Aquaporins in Edema -- 20.

Aquaporins in Obesity.-21. Aquaporins in Tumor -- 22. Aquaporin Inhibitors -- 23. Non-aquaporin Water Channels.-24. Methods to Measure Water Permeability.

Sommario/riassunto

This book provides a state-of-the-art report on our current understanding of aquaporins and the future direction of the field. Aquaporins (AQPs) are a group of water-channel proteins that are specifically permeable to water and other small molecules, such as glycerol and urea. To date thirteen water-channel proteins (AQP0 – AQP12) have been cloned and the mechanisms and physiological functions of water transport across biological membranes have long been the subject of interest. Recent advances in the molecular biology and physiology of water transport have yielded new insights into how and why water moves across cell membranes, and studies on aquaporin knockout mouse models suggest that aquaporins are involved in the development of some diseases and they may be useful targets of research into selective-inhibitor drugs. By focusing on the advances made over the last 30 years in the biophysics, genetics, protein structure, molecular biology, physiology, pathophysiology and pharmacology of aquaporins in mammalian cell membranes, this book provides novel insights into further mechanisms and the physiological significance of water and some small molecule transport in mammals in order to stimulate further research in new directions. In the second version, fourteen chapters will be updated base on the most recent research articles. Ten new chapters will be added.