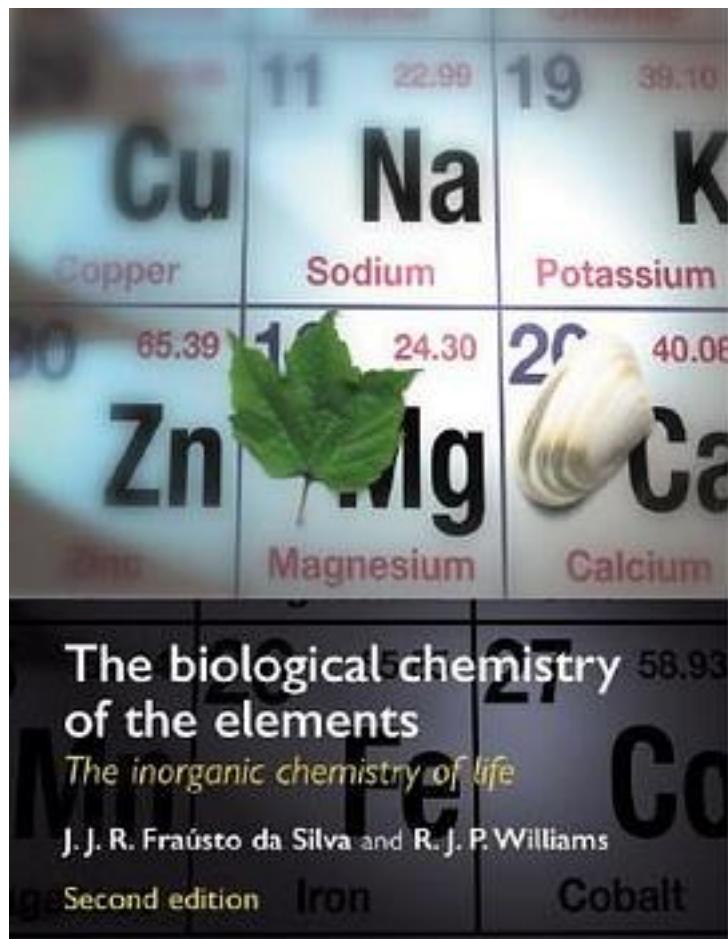


The Biological Chemistry of the Elements



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Twenty inorganic elements, mostly metal ions, are consistently found in living systems and are essential for living systems to function correctly. The aim of this text is to discuss, describe, and explain the functional relevance of those elements: the reasons

for their selection; the processes of their uptake, transport and final localization in cells; the regulation of these processes; and the interactive network of their reactions that connects the *in vivo* inorganic elements to the environment and to the genome. The first seven chapters describe the physical, chemical, and biological principles of the involvement of the elements in cellular activity, stressing how inorganic and organic chemicals react differently together in different compartments. The next twelve chapters describe the uses of the individual essential inorganic elements and a section on the genetic control of each element is included. The final chapter discusses how the interaction of genes, proteins, small molecules, and inorganic elements plays an important role in evolution and the speciation of organisms. The second edition of 'The Biological Chemistry of The Elements' has been thoroughly revised in content and style. The main additions to the first edition concern the discussion of the links to the genome of the uptake and transfer of inorganic elements and the regulation of homeostasis, the functional co-operative activities of the elements, the interaction with the environment, and the evolution of usage. Recent structural and mechanistic knowledge of many biomolecules and organelles are also included. Like the highly praised first edition, this text will be the bible of bioinorganic chemistry.

作者介绍:

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