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Nota di contenuto	Part I - Overview: 1. Selenium in Human Health and Disease: an Overview -- Part II - Bioaccessibility and Dietary Aspects of Selenium: 2. Selenium in Soils and Crops -- 3. Dietary Aspects for Selenium and/or Selenium Compounds -- Part III - Genes, Proteins, Pathways, and Metabolism Related to Selenium: 4. Contribution of the Yeast <i>Saccharomyces Cerevisiae</i> Model to Understand the Mechanisms of Selenium Toxicity -- 5. Selenium Metabolism, Regulation And Sex Differences In Mammals -- Part IV - The Role of Selenium within Redox System, Inflammation, and Thyroid Interaction: 6. Oxidative Stress, Selenium Redox Systems Including GPX / TXNRD Families -- 7. Selenium and Inflammatory Mediators -- 8. Selenium and Thyroid Function -- Part V - The Role of Selenium in Neurodevelopment and Neurological Disorders: 9. Selenium and Neurodevelopment -- 10. Selenium and Autism Spectrum Disorder -- 11. Selenium in Ischemic Stroke -- 12. Selenium neurotoxicity and Amyotrophic Lateral Sclerosis: An Epidemiologic Perspective -- Part VI - The Role of Selenium in Cancer: 13. Therapeutic Potential of Selenium Compounds in the Treatment of Cancer -- 14. Selenocystine and Cancer -- 15. Selenium

in Radiation Oncology -- Part VII - The Role of Selenium in Various Diseases and Health Issues: 16. Selenium and Cardiovascular Disease: Epidemiological Evidence of a Possible U-Shaped Relationship -- 17. Selenium and Diabetes -- 18. Uncovering the Importance of Selenium in Muscle Disease -- 19. Selenium in Immune Response and Intensive Care -- 20. Selenium and Toxicological Aspects: Cytotoxicity, Cellular Bioavailability and Biotransformation of Se-Species -- 21. Selenium Nanoparticles - Biomedical Application -- 22. Selenium Interactions with Other Trace Elements, with Nutrients (and Drugs) in Humans -- Part VIII - Selenium Analytics, Speciation and Biomonitoring: 23. Biomarkers of Selenium Status -- 24. Human Biomonitoring of Selenium Exposure -- 25. Bioanalytical Chemistry of Selenium.

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### Sommario/riassunto

This book summarizes the fast-growing and current knowledge about selenium interaction with cancer, diabetes, neuro-degeneration, heart disease, muscle disorders, HIV and several more. A special focus will be placed on in-depth knowledge about gene expression, selenoprotein biosynthesis, seleno-metabolism--as well as the molecular pathways, physiological roles, and the molecular action of selenium including interaction with other elements and vitamins or as Se-nanoparticles. The reader will receive the newest information regarding redox status and redox regulatory systems, specifically in relation to different glutathione peroxidases and thioredoxin-reductases as well as about cellular bioavailability and cytotoxicity, de-balanced immune response, inflammation or dietary aspects.

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