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Selenium-Rich Products

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Selenium is an essential trace element acting primarily via selenoproteins in antioxidant defense, immune regulation, and thyroid metabolism. Deficiency remains a global concern, yet the narrow window between deficiency and toxicity presents a complex challenge. This Reprint compiles cutting-edge research on the development, health effects, and regulation of selenium-rich products. It explores mechanistic insights into protection against oxidative stress, radiation, and metabolic disorders, alongside innovations in plant-based and nano-selenium formulations. A key theme is precision nutrition: studies highlight erythrocyte selenium as a superior long-term biomarker for guiding personalized supplementation, while also evidencing how excess intake may disrupt metabolism. Together, these contributions advance the safe and effective application of selenium-rich products. This volume serves as a vital resource for researchers, clinicians, and industry professionals in nutrition, food science, and public health, fostering further exploration of selenium for disease prevention and health promotion.

