

عنوان مقاله:

Selenium as a Mineral with Anti-Cancer Properties

محل انتشار:

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خلاصه مقاله:

Selenium (Se) is a trace element necessary for the proper functioning of organisms that have recently gained substantial attention due to its promising chemotherapeutic potential in cancer prevention and treatment. Besides providing routine anticancer treatments, Se supplementation has been shown to enhance the suitability of standard chemotherapeutic approaches with limited side effects and without reducing the treatment effectiveness, thus improving the patients' general conditions. The smallest changes in the Se content may cause its deficiency or excess. Therefore, a supplementation has to be carefully and cautiously administered. Nevertheless, Se mechanisms of potentially anticancer properties are not fully understood. The relevant research has shown that its properties may correlate with its antioxidant protection, enhanced immune surveillance, augmented carcinogen detoxification, modulation of cell proliferation (cell cycle and apoptosis), and inhibitions of angiogenesis and tumor cell invasion and migration. It is worthy to mention that Se biological activity, potential anticancer properties, and compounds are highly dependent on its speciation, chemical form, and specific metabolic pathways of the target cells and tissues. Elucidating and deepening our knowledge of Se and its properties will help in designing and optimizing its compounds with more specific antitumor properties for their possible future applications in the treatment of cancer. This review surveys the global cancer status and provides progress in the current understanding of the molecular mechanisms that clarify the potential anticancer effects of Se and its compounds.

کلمات کلیدی:

selenium, Trace element, neoplasm

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