

New Nano Selenium Model for Cancer Management

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This study aims to develop a simple method for synthesis of novel form vitamin c-coated selenium nanoparticles labeled with technetium-99m as a potential protective agent against breast cancer and a radiopharmaceutical for imaging of solid tumors. SeNPs are considered as a novel form of selenium that possesses strong antioxidant properties that increase the bioavailability and effects of selenium in addition to decreasing its toxicity. Also, owing to the Nano-size, SeNPs can cross intracellular and extracellular barriers of cancer tissues, so, increasing their sensitivity and selectivity to the cancer cells avoiding the surrounding healthy tissues. Vitamin C inhibits tumor growth by disrupting Phase G1 in the cell cycle and inducing apoptosis in abnormal cells. Technetium-99m radioactive isotopes emit gamma rays, which are picked up by a gamma camera and used for imaging. [^{99m}Tc-Vit-C (SeNPs)] complex is considered as strong antioxidant which makes it an excellent candidate for protection against cancer.

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