

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 3, December 2024

Nanomaterials for Cancer Therapy

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Abstract: Cancer is one of the worst diseases in the world. Nanotechnology, being a novel technology, has recently been widely used in cancer therapy through diagnostics, imaging, and theranostics. Cancer is a disease with a complex pathology. Here are some examples of nanomaterials utilized in cancer therapy, along with their associated properties. Current chemotherapy has issues such as lack of selectivity, cytotoxicity, induction of multidrug resistance, and stem-like cell development. Nanomaterials are materials with optical, magnetic, and electrical properties that are unique to the nanoscale (1-100 nm). Nanomaterials utilized in cancer therapy are categorized into numerous types. Furthermore, as new multidrug resistance pathways are discovered and explored, nanoparticles are being studied more closely. In this thorough review, we have summarized the current understanding and effort in this field to pave the path for physicians to accelerate the implementation of hybrid modes of treatments by leveraging the usage of diverse nanoparticles.

Keywords: Nanoparticles, Nanotechnology, Cancer therapy, Polymeric materials

