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## **Targeted Drug Delivery in Cancer Therapy**

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Abstract: Targeted medication delivery in cancer therapy is a promising method for increasing efficacy while minimizing side effects. This technique uses NANO materials, antibodies, or LIGAND-conjugated medicines to deliver medications directly to cancer cells while limiting damage to healthy organs. Advances in nanotechnology, such as liposomes, DENDRIMERS, and NANO particles, have enabled precise tumor targeting based on specific molecular markers expressed on cancer cells. Furthermore, the emergence of stimuli-responsive drug delivery systems, which release their payload in reaction to environmental changes like pH, temperature, or certain enzymes, provides new opportunities for site-specific treatment. Clinical trials have shown improved therapeutic outcomes, such as increased medication stability, decreased systemic toxicity, and improved tumor targeting. However, issues like immune system evasion, scalability, and tumor heterogeneity remain to be solved. Further research and innovation in tailored drug delivery platforms show significant promise for transforming cancer treatment, enhancing patient quality of life, and potentially overcoming resistance to standard medicines[1].

Keywords: Anticancer drugs, Tumor cells, Bio conjugates, Particles, vascular

