

Nanotechnology Developed for Tumor Precision Treatment

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Abstract: Multidrug resistance is one of the main obstacles in the chemotherapeutic failure of malignant metastasis cancer treatments in clinic. Several factors involving in drug resistance include enhanced repair mechanisms of drug induced DNA damage, lowered tumor extracellular pH, alteration of cell cycle check points, blockage of apoptosis pathway, poor tumor vasculature and over expression of drug efflux pumps. Many research studies highlight that tumor intracellular environment plays a predominant role in tumor cell proliferation and metastasis. Hence, targeting the characteristics of tumor itself provides a novel strategy for the evolution of cancer nanomedicine. The blooming knowledge about the tumor intracellular environment merging with the design of environment-based smart nanoparticles can provide an effective and promising platform to address the multidrug resistant tumor cells. This presentation describes the characteristic features of tumor resistance to chemotherapy and their targeting mechanisms with the aid of nanoparticles for the development of newer drug delivery systems to precisely treat cancer cells.

Keywords: Tumor therapy, Environment-sensitive nanoparticles

References

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