Patent Search

Invention Title	SURFACE FUNCTIONALIZED BIOPOLYMERIC NANOPARTICLES COMPRISING CINNAMOMUM ZEYLANICUM BIOPOLYMER ENCAPSULATING DOXORUBICIN AND GEFITINIB, COMPOSITION AND METHOD OF PREPARATION THEREOF
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Abstract:

The present invention relates to nanoparticles for site specific drug delivery to tumor sites, composition and method of preparation thereof, wherein nanoparticles compr pharmaceutically active component comprising doxorubicin and gefitinib; and a biopolymer, wherein the doxorubicin and geftinib are encapsulated in the biopolymer der form nanoparticle, wherein the biopolymer is obtained from the bark of Cinnamomum Zeylanicum. The biopolymer derived targeted nanoparticle effective against therap mitigation of brain tumor in human or other tumor application in human or animal body. The prepared functional nanoparticles of biopolymeric origin used for site specif targeting of particular abnormal cells, tissue, with sustained release or controlled extended and or prolong release.

Complete Specification

The present invention relates to nanoparticles and a method of producing nanoparticles and specifically, the present invention relates to nanoparticles for site specific d delivery to tumor sites, composition and method of preparation thereof, wherein nanoparticles comprise a pharmaceutically active component comprising doxorubicin a gefitinib; and a biopolymer obtained from the bark of Cinnamomum Zeylanicum

BACKGROUND/PRIOR ART OF THE PRESENT INVENTION

The conventional therapeutic approaches remain doubtful for drug delivery which often results in inadequate drug release, poor cell uptake of therapeutics, and ultimat result in sub-therapeutic effect in cancer treatment. Nanoparticles delivery system retains pharmaceutical in the vicinity of tumor tissue thus resulting in so-called enhan permeation and retention (EPR) effect. This mechanism has been largely been explored in drug delivery design and targeting of solid tumor or cancer therapy. As understood, the tumor tissue differ from normal tissues with respect to possessing cellular disorganization, excellent vascular permeability due to weakly developed blo vessels, poor lymphatic system, and thus nano-scale particle can easily extravsate through these and passively retain and permeate in tumor tissues. Moreover, the surfa tuning or modification of nanoparticle and thereby conjugating ligand for active targeting has added advantage for tissue selective eradication of cancer cells. It essentia improves the targetibility of therapeutics and efficacy in cancer treatments. The functional nanoparticle provides maximum therapeutic effect of pharmaceutical preparation due to specific nano-biointeraction and hence cellular delivery of targeted pharmaceuticals. The functional nanoparticles interact with cell surface receptor (folate receptor) in brain and hence receptor mediated intracellular delivery take place and also limits therapeutic distribution on surrounding tissues. The functional nanoparticles in therapeutic dose would be effective in

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