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(54) Title of the invention : ENCAPSULATION OF GEMCITABINE IN CHITOSAN NANOPARTICLES FOR ENHANCED DRUG DELIVERY

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(57) Abstract :  
The invention relates to a gemcitabine-loaded chitosan nanoparticle formulation designed for breast cancer treatment. This formulation includes chitosan nanoparticles encapsulating gemcitabine, a hydrophilic anticancer drug, to enhance its bioavailability and enable controlled release. The process involves preparing a chitosan solution, dissolving gemcitabine, and forming nanoparticles through a specific method, resulting in a dry powdered form. The formulation is suitable for injectable administration, demonstrating controlled release and increased cellular uptake in studies. Additionally, a pharmaceutical composition comprising this formulation and a method for treating breast cancer through injection are disclosed.

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