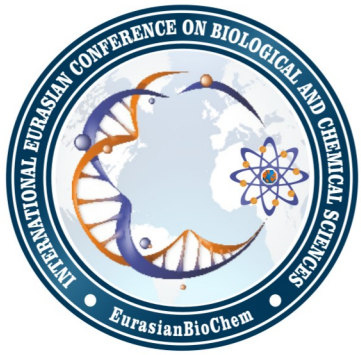


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POSTER PRESENTATION

Box-Behnken Optimization of Beta Glucan Nanoparticles Synthesis Conditions

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Abstract

Cancer is a fatal disease resulting from abnormal cell proliferation and spread. Genetic, environmental and lifestyle factors play a role in the development of cancer. Conventional treatments often cause side effects. In recent years, smart drug delivery systems such as immunotherapy, hormone therapy, angiogenesis inhibitors have made significant progress in cancer treatment. These systems minimise side effects by enabling direct delivery of drugs to tumour cells.The evaluation of the usability of nanoparticles obtained from polysaccharides such as beta glucans as drug delivery systems in cancer treatment may allow the development of a new and effective method. Beta glucans are known to enhance natural immune responses against cancer cells by increasing the activation of immune system cells, induction of apoptosis (programmed cell death) in cancer cells and antiinflammatory effects, emphasising their antitumoural effects. These effects may help fight cancer by controlling the growth and spread of cancer cells. The aim of this study is to synthesise beta glucan nanoparticles to be used as a smart drug carrier in cancer treatment. For this purpose, optimization of three important nanoparticle synthesis parameters (temperature, time, NaOH concentration) using Box-Behnken experimental design was performed. The nanoparticles obtained as a result of the optimization study will be characterised by TEM, DLS and BET analyses and the suitable nanoparticle will be selected as the drug carrier for different cancer treatment drugs.

Keywords: Yeast betaglucan, optimization, nanoparticles,cancer

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