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**Synthesis and characterization of cobalt ferrites nanoparticles with cytotoxic and antimicrobial properties. (2017).
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مشترك ومنشور في مجلة دولية

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Abstract

Recently, the application of nanotechnology in food sector and the agriculture attract the attention compared to its biomedical application. The aims of the current study was to synthesize and characterize cobalt ferrites nanoparticles [(CoFe₂O₄) NPs] by combustion method employing glycine as fuels and to evaluate their antimicrobial against pathogenic bacteria and fungi and anti-cancer properties against MCF-7 breast cancer cells line. The results indicated that the particles size of the synthesized (CoFe₂O₄) NPs was 40 nm. These (CoFe₂O₄) NPs showed potential antibacterial properties against Gram-negative bacteria (*Escherichia coli*, *Salmonella typhi*) and Gram-positive bacteria (*Staphylococcus aureus*, *Bacillus cereus*) as well as the pathogenic fungi (*Aspergillus flavus* and *Aspergillus ochraceus*) in a dose dependent manner with maximum concentration of 1.8 mg/ml. (CoFe₂O₄) NPs also showed weak antiradical but have cytotoxic effects against MCF-7 breast cancer cells line and succeeded to decrease the cell viability at a concentration of 2 mg/ml. It could be concluded that (CoFe₂O₄) NPs is a promise candidate as antimicrobial and anticancer agent for food sector and medical application.

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