

## عنوان مقاله:

Biosynthesis of magnetic core-shell magnetic MOF/Ag nanocomposites for drug delivery in cancer therapy

## محل انتشار:

سومین کنگره ملی شیمی و نانوشیمی از پژوهش تا فناوری (سال: 1399)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

Porous metal organic frameworks (MOFs) with greater tunability and high surface area may be more suitable for the drug delivery applications. A facile and efficient strategy is proposed to prepare Ag-nanoparticle-embedded magnetic metal-organic frameworks [Fe<sub>3</sub>O<sub>4</sub>@MIL-100 (Fe)/Ag]. Facile synthesis of core-shell magnetic MOFs for drug delivery is of significance due to the advantages of high drug load and easy separation. For synthesis of Fe<sub>3</sub>O<sub>4</sub> nanoparticle and Ag nanoparticle were used by natural reagents, as one reducing and capping agent. The as-prepared nanocomposites are regular spherical and contain a Fe<sub>3</sub>O<sub>4</sub> core with an average diameter of 25 nm, which make them exhibit good magnetic properties and can be conveniently separated. A 40 nm MIL-100(Fe) MOF shell is uniformly coated on the Fe<sub>3</sub>O<sub>4</sub> core and loads well-dispersed 12 nm Ag nanoparticles in their pores, which make the nanocomposites have excellent potential drug delivery for cancer therapy. The composite were characterized by technique like FT-IR, XRD and FE-SEM to understand the effect of the nanoparticle in MOF structure. The cytotoxicity of Fe<sub>3</sub>O<sub>4</sub>@MIL-100 (Fe)/Ag NPs was verified against K562 cells lines. The cytotoxicity assay showed that the magnetic MOFs have low cytotoxicity and good biocompatibility. The resulted bio-nanocomposite showed that this carrier system could be potentially used in anticancer drug delivery systems

## کلمات کلیدی:

biosynthesis, magnetic core-shell, Ag nanoparticles, Fe<sub>3</sub>O<sub>4</sub> nanoparticles, drug delivery, magnetic MOF

## لینک ثابت مقاله در پایگاه سیویلیکا:

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