

عنوان مقاله:

Curcumin encapsulated MIL-101(Fe) as a sustained release system

محل انتشار:

بیست و یکمین سمینار شیمی معدنی انجمن شیمی ایران (سال: 1398)

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خلاصه مقاله:

Metal-organic frameworks (MOFs) with unique features of excellent chemical stability, tunable pore size, and high surface area, are appropriate for many applications including gas storage, compound separation, catalysis, and drug delivery [1-3]. In the present study, MIL-101(Fe) was investigated for the load and release of curcumin. This mesoporous MOF is composed of nontoxic components; therefore, it is a suitable candidate for drug delivery field. In the first step, MIL-101(Fe) was synthesized with the reflux method in 110 °C and then activated with the solvent exchange to removing of DMF molecules in the pores. The MOF characterization before and after drug loading was done with some analysis such as X-ray powder diffraction (PXRD), N₂ adsorption/desorption, Fourier-transform infrared spectroscopy (FT-IR), field emission scanning electron microscopy (FE-SEM), and UV-vis spectroscopy. Obtained results for drug loading was done based on UV-vis analysis. The drug release was monitored in phosphate buffer saline (PBS) at pH = 7.4. Results showed that 34.6% of the loaded drug was released over 14 days. This obtained release profile showed this MOF has the potential for sustained release of curcumin

کلمات کلیدی:

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