عنوان مقاله:

Capacity of Novel Nanosensors κC - CdTe/ZnS Quantum Dots for detection of anthracyclic drugs

محل انتشار:

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

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خلاصه مقاله:

Epirubicin (Ep) is one of anthracyclic drugs that approved in treatment of breast, ovarian, gastrointestinal, lung, liver, colon, lymphoma, leukemia, and multiple myeloma and soft tissue cancers. However, measuring low concentrations of this drug in environmental and body samples requires sensitive, rapid, and accurate analysis methods. Mass spectrometry and gas and liquid chromatography are commonly two time consuming and high- cost methods measurement methods. Here we reports synthesis route for CdTe/ZnS QDs and κC - CdTe/ZnS QDs. With this in mind, we discuss thermal stability curves of commercial κC, and the prepared fluorescence nanosensors κCCdTe/ ZnS QDs, and TEM images of CdTe/ZnS QDs and κC-CdTe/ZnS QDs. The TGA curve of κC showed a first weight loss of 16% in the range of 0–250 °C due to the removal of the moisture. A second weight loss of 10% in therange of 250–350 °C corresponds to the elimination of a OSO3 and the fragmentation of carbohydrate backbone, and the final last weight loss observed around 50% in the range of 350–800 °C. The TGA curve of κC-CdTe/ZnS QDs showed negligible difference in the degradation pattern up to 250 °C and it followed by significant degradation stepin the range of 250–550 °C. Indeed 34% weight loss observed in this rage. In final step, 550- 700 °C, 6% weight loss of κC-CdTe/ZnS QDs illustrated. Furthermore, we discuss detection capability of κC-CdTe/ZnS QDs nanosensor in (Ep) as one of anthracyclic drugs

کلمات کلیدی:

Nanosensores, Quantum Dots, Kappa (κ)-carrageenan, Drug determination