

عنوان مقاله:

Synthesis of Amine-Functionalized Graphene Quantum Dots for Curcumin Delivery to Cancer Cells

محل انتشار:

کنفرانس و کارگاه بین المللی نانوفناوری و نانو پزشکی NTNM 2017 (سال: 1396)

تعداد صفحات اصل مقاله: 3

نویسندگان:

n Ghanbari - Department of Chemical Engineering, College of Engineering, University of Tehran, P.O. Box 11155-4563, Tehran, Iran

z Salehia - Department of Chemical Engineering, College of Engineering, University of Tehran, P.O. Box 11155-4563, Tehran, Iran

a Khodadadi - Department of Chemical Engineering, College of Engineering, University of Tehran, P.O. Box 11155-4563, Tehran, Iran

y Mortazavi - Department of Chemical Engineering, College of Engineering, University of Tehran, P.O. Box 11155-4563, Tehran, Iran

خلاصه مقاله:

Graphene quantum dots (GQDs) are new efficient nanomaterials used in bioimaging, biosensing and therapeutic applications. In this study, green fluorescent amine-functionalized GQDs was synthesized from graphene oxide, ammonia and hydrogen peroxide as precursors. The amine functionalization of GQDs was confirmed by FTIR characterization. The average size of the obtained GQDs was 10 nm through DLS analysis and it showed green photoluminescence under UV excitation. The GQDs were then loaded with the hydrophobic anticancer drug, curcumin (Cur), to prepare Cur/GQDs as an efficient drug delivery system. The successful loading of Cur on GQDs through π - π stacking and hydrophobic interactions was confirmed by UV-vis analysis and FTIR characterization. The in-vitro cytotoxicity investigation of GQDs on human breast cancer cells showed that the drug-free GQDs nanocarriers are highly biocompatible.

کلمات کلیدی:

Graphene quantum dots, Curcumin, Nanocarriers, Drug delivery

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/702272>

