



Hydrothermal synthesis of carbon nanodots from millets for cancer cells imaging

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Abstract

We presented a green, simple and economical method to synthesize carbon nanodots (C-dots) from millets using hydrothermal synthesis route. The obtained C-dots have average diameter ranging from 6 to 8 nm. Optical measurements showed the formation of hydroxyl, carbonyl/carboxyl, amino functional groups on the particle surfaces, resulting in their high hydrophilicity and bioconjugation. After treatment with C-dots, human cervical and lung cancer cells became bright and exhibited multicolor fluorescence under different excitation wavelength. The achievement demonstrated potential applications of fluorescent C-dots in the field of biomedical application, especially in diagnostic disease techniques.

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Keywords

Carbon nanodots, Photoluminescence, Natural biomass, Millets, Hydrothermal method, Biomedical application, human cervical cancer cells, lung cancer cells.

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