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Bright carbon dots via inner filter effect for the sensitive determination of the purine metabolic disorder in human fluids

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Abstract: In this paper, the high performance fluorescent carbon dots was synthesized with maleic acid, tris and benzoic acid as raw materials by one-step hydrothermal method. The obtained carbon dots with uniform size emitted strong blue fluorescence, which the maximum excitation and emission wavelengths at 250 nm and 415 nm, respectively. Under the optimum condition, it was meaningfully founded that the reaction between the carbon dots and uric acid resulting in the fluorescence quenching of the carbon dots at the emission spectrum of 415 nm. The reason was that they had a synergistic effect between the fluorescence internal filtering effect and the static quenching effect. The fluorescence internal filter effect sensing system was constructed

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