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Photoluminescence Light-up Detection of Zinc Ion and Imaging in Living Cells Based on the Aggregation Induced Emission Enhancement of Glutathione-capped Copper Nanoclusters

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Abstract

In this work, we prepared glutathione (GSH)-capped copper nanoclusters (Cu NCs) with red emission by simply adjusting the pH of GSH/Cu²⁺ mixture at room temperature. A photoluminescence light-up method for detecting Zn²⁺ was then developed based on the aggregation induced emission enhancement of GSH-capped Cu NCs. Zn²⁺ could triggered the aggregation of Cu NCs, inducing the enhancement of luminescence and the increase of absolute quantum yield from 1.3% to 6.2%.

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