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Aggregation-induced ratiometric emission active monocarbazone: Ratiometric fluorescent probe for Cu²⁺ in either solution or aggregation states

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Abstract: A simple monocarbazone **1** derived from 2*H*-benzo[*h*]chromene-3-carbaldehyde and carbazide exhibited aggregation-induced ratiometric emission upon the addition of water to CH₃OH solution ($\Delta\lambda_{em}$ = 30 nm). Upon Cu²⁺ treatment, the fluorescence emission of **1** displayed a significant red shift in both CH₃OH and H₂O solutions. In addition, **1** can detect Hg²⁺ through the fluorescence quenching in H₂O solution. The response mechanism to Cu²⁺ involved an intermolecular charge transfer coupled with a metal-induced assembly, whereas that to Hg²⁺ was probably due to a photo-induced electron transfer coupled with metal-induced assembly, which were thoroughly

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