

## Supporting Information

# Fluorescence Quenching Determination of Iron(III) Using Rhodamine 6G Hydrazide Derivative

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## Supplementary Results

### Figure Captions

**Fig. S1** Dependence of fluorescence intensity on the excitation time for R6GD ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ )

**Fig. S2** (a) Fluorescence intensity change of R6GD of different concentrations in HAc-NaAc solution of pH 3.2; Insert: fluorescence intensity of R6GD of different concentrations. (b) Fluorescence intensity change (552 nm) of R6GD of different concentrations with the addition of 2  $\mu\text{M}$  Fe(III). ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ )

**Fig. S3** (a) Effect of the KI concentration on the fluorescence response of 1  $\mu\text{M}$  R6GD in HAc-NaAc buffer solution of pH 3.2; (b) Fluorescence intensity change (575 nm) of R6GD-KI of different KI concentrations with the addition of 2  $\mu\text{M}$  Fe(III). ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ ; R6GD concentration: 1  $\mu\text{M}$ )

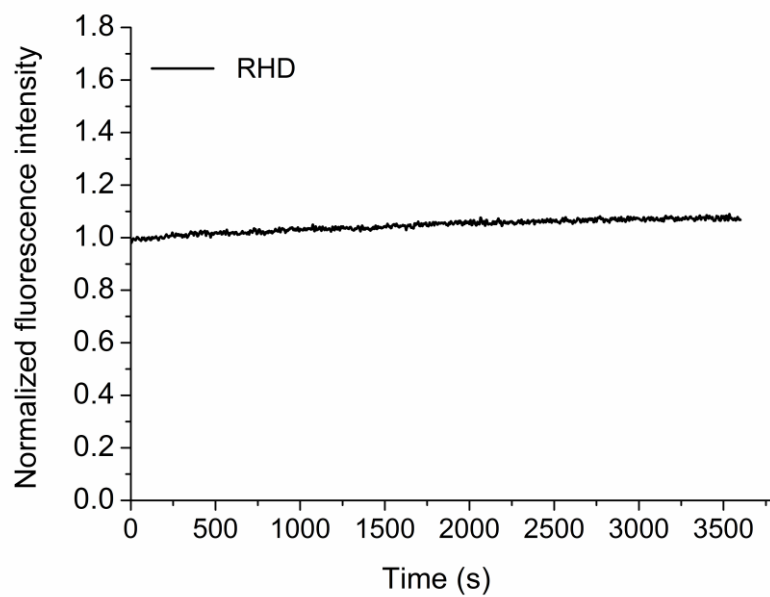
**Fig. S4** Fluorescence spectra of R6GD without (a) and with (b) the addition of Fe(III) (2 eq) in HAc-NaAc solution of different pH values (insert: fluorescence intensity (552 nm) of R6GD in different pH values) ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ )

**Fig. S5** (a) Fluorescence spectra of R6GD at different temperatures in HAc-NaAc buffer solution of pH 3.2, (insert: the fluorescence intensity of R6GD (552 nm) in different temperatures); (b) Relationship between the relative fluorescence intensity of R6GD and temperature in the present of 2  $\mu\text{M}$  Fe(III). ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ ; R6GD concentration: 1  $\mu\text{M}$ )

**Fig. S6** Fluorescence intensity of R6GD in HAc-NaAc buffer solution of pH 3.2 for different times (1: R6GD, 2: R6GD-KI, 3~7: R6GD-KI-Fe(III), curves 3~7 represented the time reaction between KI and  $\text{Fe}^{3+}$  were 1, 3, 5, 10, 15 min, respectively (R6GD concentration: 1  $\mu\text{M}$ ; KI concentration: 0.001 M; Fe(III) concentration: 10  $\mu\text{M}$ ;  $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ )

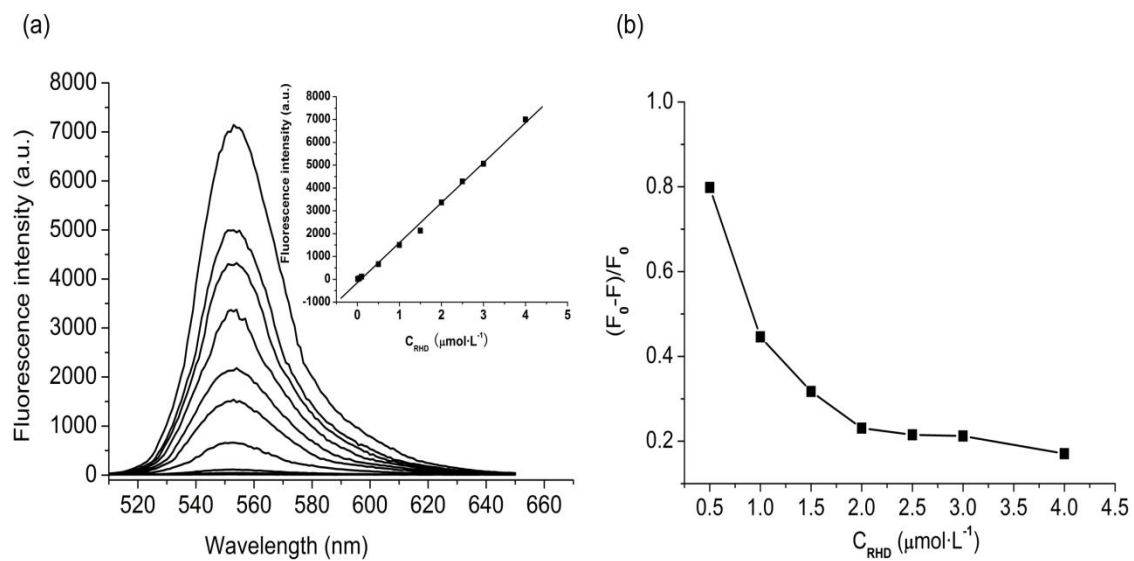
**Fig. S7** Fluorescence spectra of R6GD (1  $\mu\text{M}$ )-KI- $\text{Fe}^{3+}$  in HAc-NaAc buffer solution of pH 3.2 (insert: relationship of  $(F_0-F)/F_0$  and  $\text{Fe}^{3+}$ ); ( $\lambda_{\text{ex}}/\lambda_{\text{em}} = 500 \text{ nm}/552 \text{ nm}$ )

**Fig. S8** A curve of linearity between  $(F_0-F)/F_0$  and  $\text{Fe}^{3+}$  at different concentrations in the range of 0.5~6.0  $\mu\text{M}$

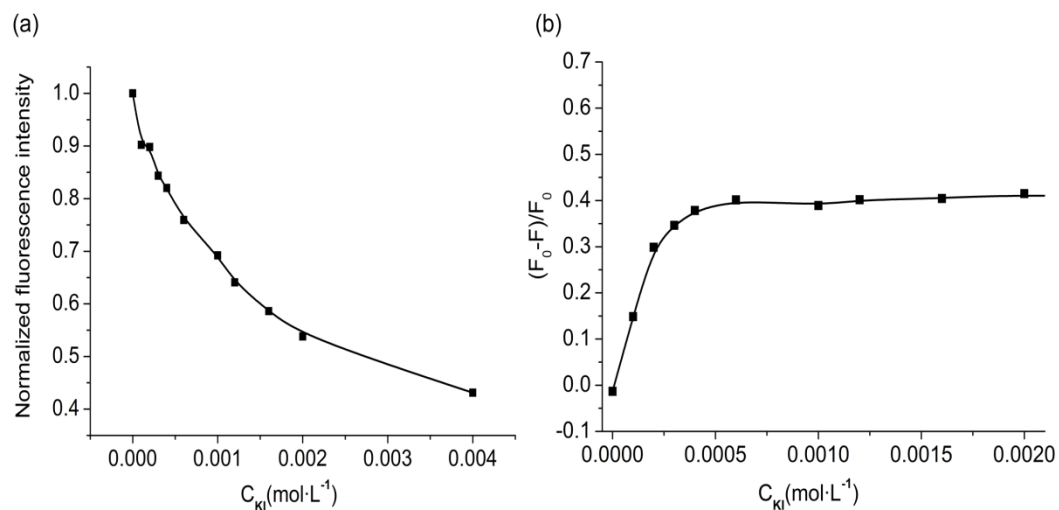


**Fig. S1** Dependence of fluorescence intensity on the excitation time for R6GD

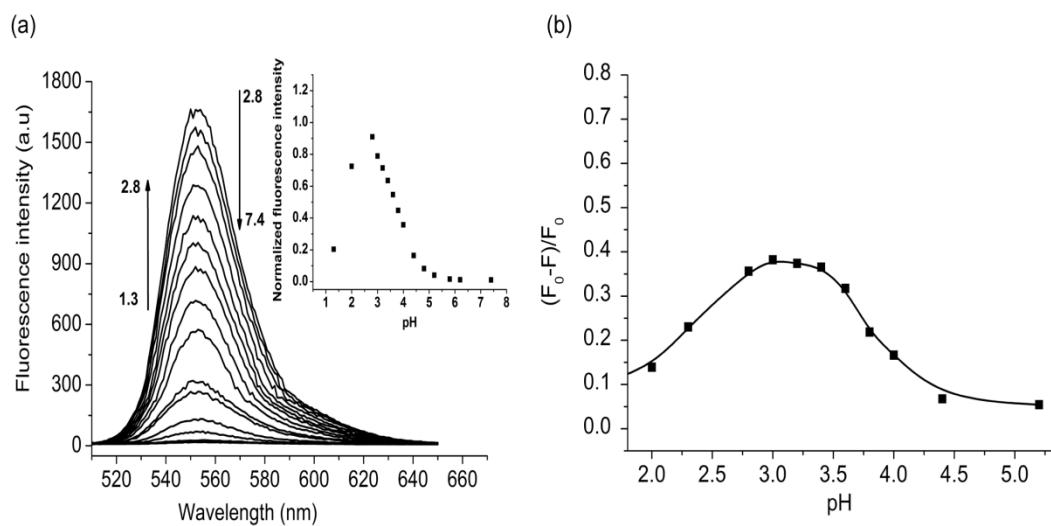
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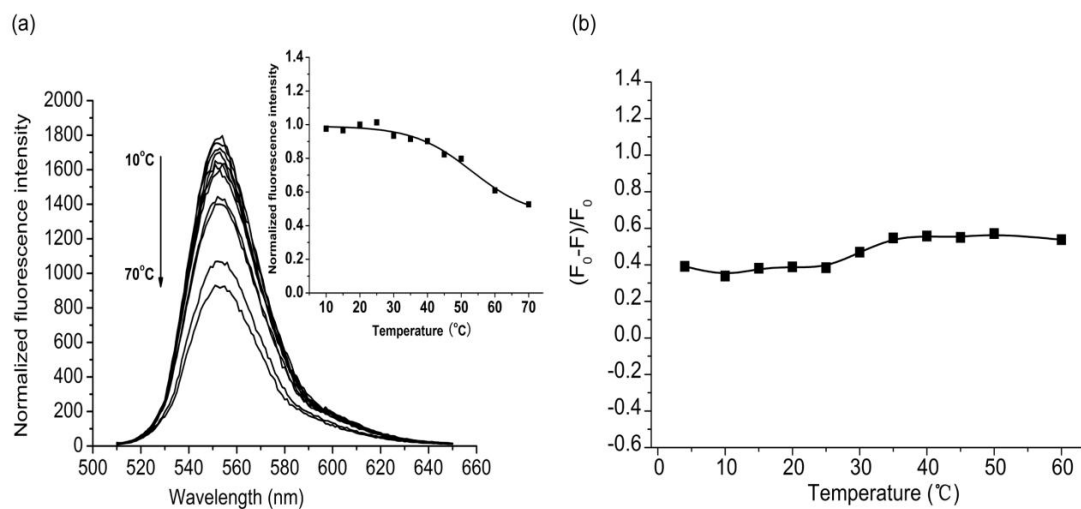
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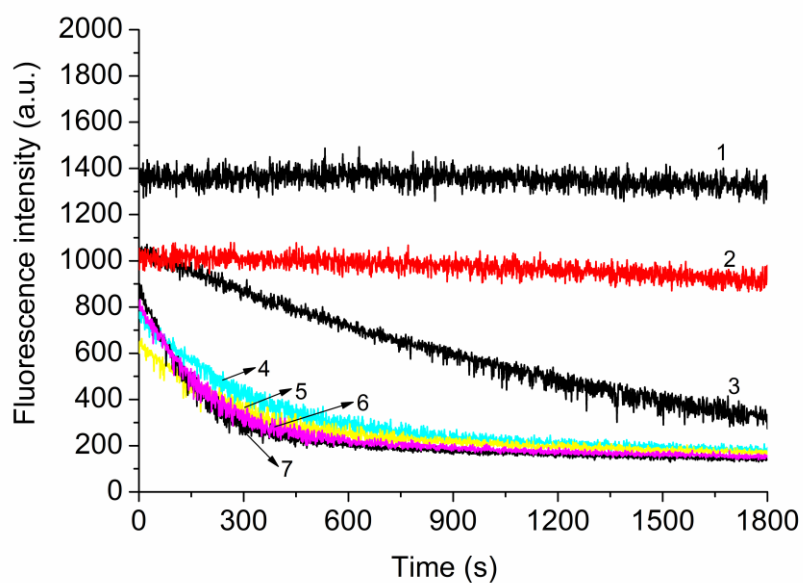
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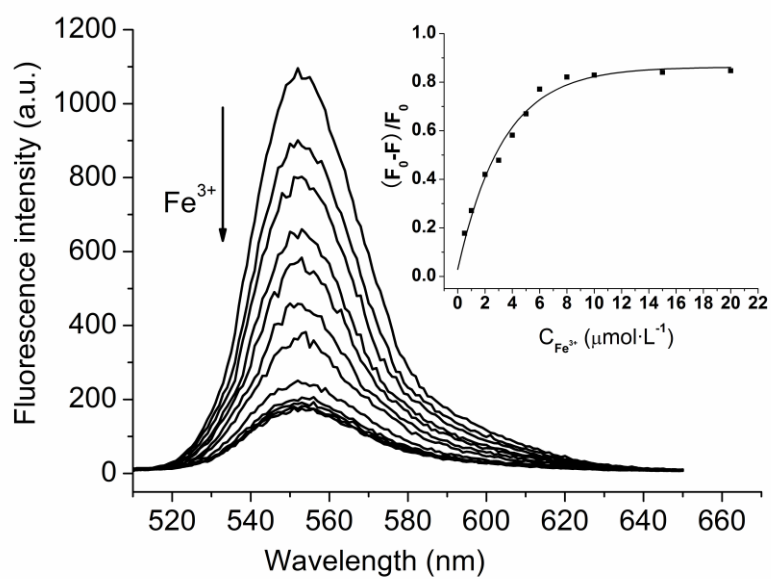


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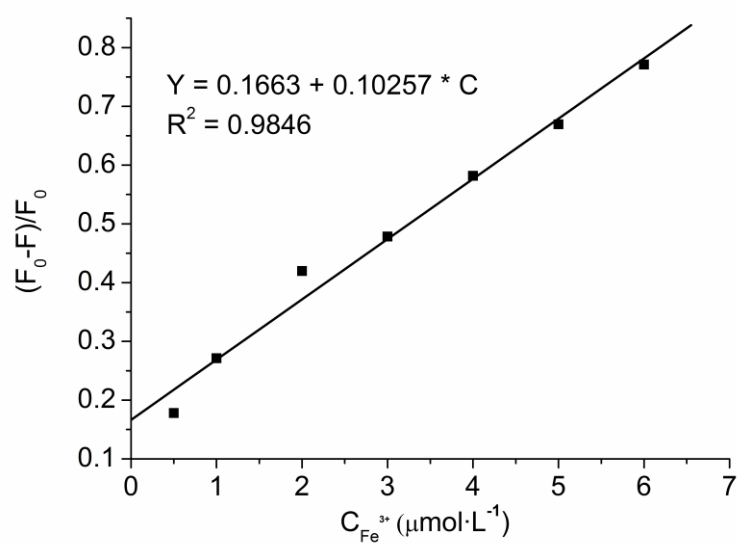


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