***Supporting Information***

**A new carbazole-based colorimetric and fluorescence probe for the detection of sulfur dioxide**

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**Fig. S1** 1H NMR of probe **CBB**

**Fig. S2** 13C NMR of probe **CBB**

**Fig. S3** ESI-MS of probe **CBB**

**Fig. S4** The linear curve established by the fluorescence intensity (593 nm) versus the concentrations of HSO3-.

**Fig. S5** The time-dependent FL spectrum of probe **CBB** toward HSO3-.

**Fig. S6** The FL intensity of **CBB** (20 μM) in different pH (1.0-14.0) in the absence and presence of HSO3- (λex = 454 nm).

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