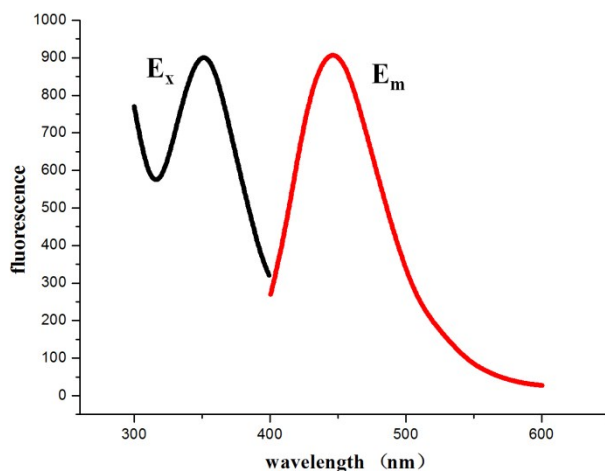
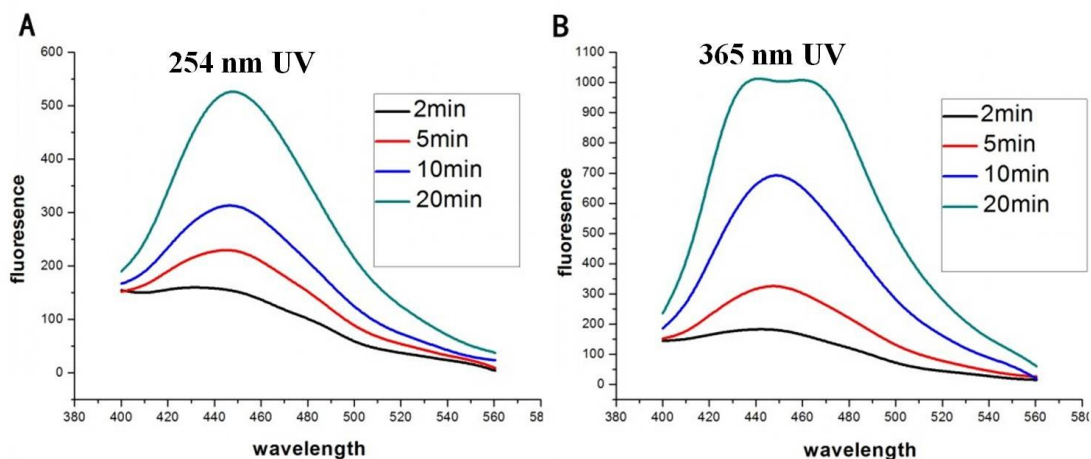


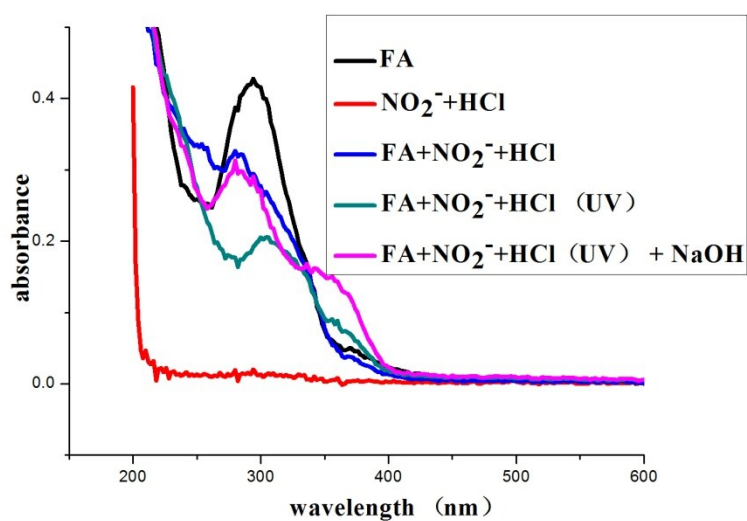
## Electronic Supporting Information (ESI)



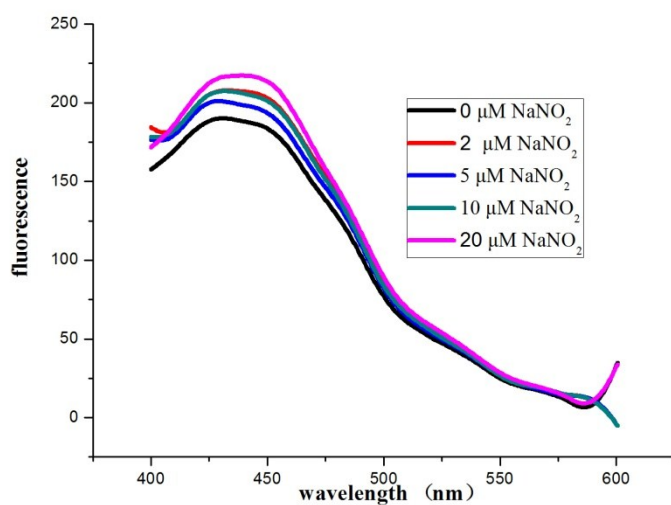
**Fig. S1.** The photoluminescence excitation and emission spectra. FA: 20  $\mu$ M; HCl: 20 mM;  $\text{NaNO}_2$ : 10  $\mu$ M; the volume of 1 M NaOH: 20  $\mu$ L; incubation time: 10 min; UV radiation time: 5 min.



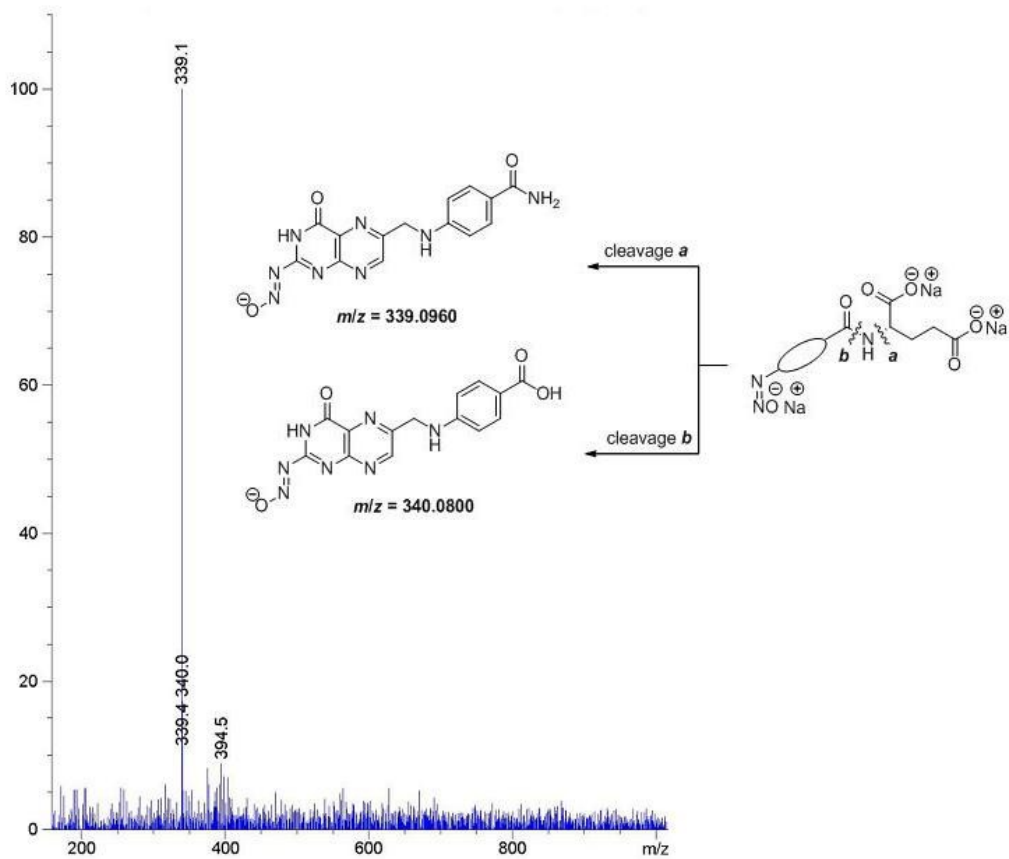
**Fig. S2.** The fluorescence spectra of FA under different UV radiation time with other conditions being fixed. FA: 20  $\mu$ M;  $\text{NaNO}_2$ : 0.5  $\mu$ M; HCl: 10 mM; the volume of 1 M NaOH: 10  $\mu$ L; incubation time: 10 min; the number of UV radiation: (A): 254 nm; (B): 365 nm.



**Fig. S3.** Absorbance spectra of FA with different conditions. Folic acid: 16  $\mu\text{M}$ , HCl: 10 mM; the volume of 1 M NaOH: 10  $\mu\text{L}$ ; incubation time: 10 min; UV radiation time: 3 min.



**Fig. S4.** The fluorescence spectra of FA with the addition of different concentrations of NO<sub>2</sub><sup>-</sup> after UV exposure for 5 min. Folic acid: 16  $\mu\text{M}$ , HCl: 10 mM; the volume of 1 M NaOH: 10  $\mu\text{L}$ ; incubation time: 10 min.



**Fig. S5.** ESI mass spectrum of the products after the reaction in the negative mode.