## **Supporting Information**

## Insights from multi-spectroscopic analysis and molecular modeling to understand the structure-affinity relationship and interaction mechanism of flavonoids with gliadin



Figure S1 Fluorescence quenching spectra of gliadin with flavonoids (curves  $a \rightarrow i$  denote the concentration of flavonoids at 0, 2.28, 4.57, 6.85, 9.12, 11.39, 13.67, 15.94, 18.2  $\mu$ M, and curve m denotes the fluorescence emission spectrum of flavonoid only).



Figure S2 The fluorescence excitation quenching spectra of gliadin with flavonoids (curves  $a \rightarrow i$  denote the concentration of flavonoids at 0, 2.28, 4.57, 6.85, 9.12, 11.39, 13.67, 15.94, 18.2  $\mu$ M).



**Figure S3** Synchronous fluorescence spectra of gliadin with flavonoids at  $\Delta \lambda = 15$  nm (curves a $\rightarrow$ i denote the concentration of flavonoids at 0, 2.28, 4.57, 6.85, 9.12, 11.39, 13.67, 15.94, 18.2 µM).



**Figure S4** Synchronous fluorescence spectra of gliadin with flavonoids at  $\Delta \lambda = 60$  nm (curves a $\rightarrow$ i denote the concentration of flavonoids at 0, 2.28, 4.57, 6.85, 9.12, 11.39, 13.67, 15.94, 18.2 µM).



Figure S5 The RSFQ values of Tyr and Trp residues of gliadin at different concentrations of flavonoids.