

## Supporting Information

*for*

### Selective recognition of luteolin and quercetin based on the specific interaction of ortho-dihydroxy substituents with a Zinc(II) complex

Bowen Xiao,<sup>a</sup> Huijuan Wang,<sup>a</sup> Xijuan Zhao,<sup>\*b</sup> Yuanfang Li<sup>\*a</sup>

<sup>a</sup>Key Laboratory of Luminescence and Real-Time Analytical Chemistry (Southwest University), Ministry of Education, College of Chemistry and Chemical Engineering, Southwest University, Chongqing, 400715, PR China. Fax: (+86) 23 68367257; Tel: (+86) 23 68254659; E-mail: [liyf@swu.edu.cn](mailto:liyf@swu.edu.cn)

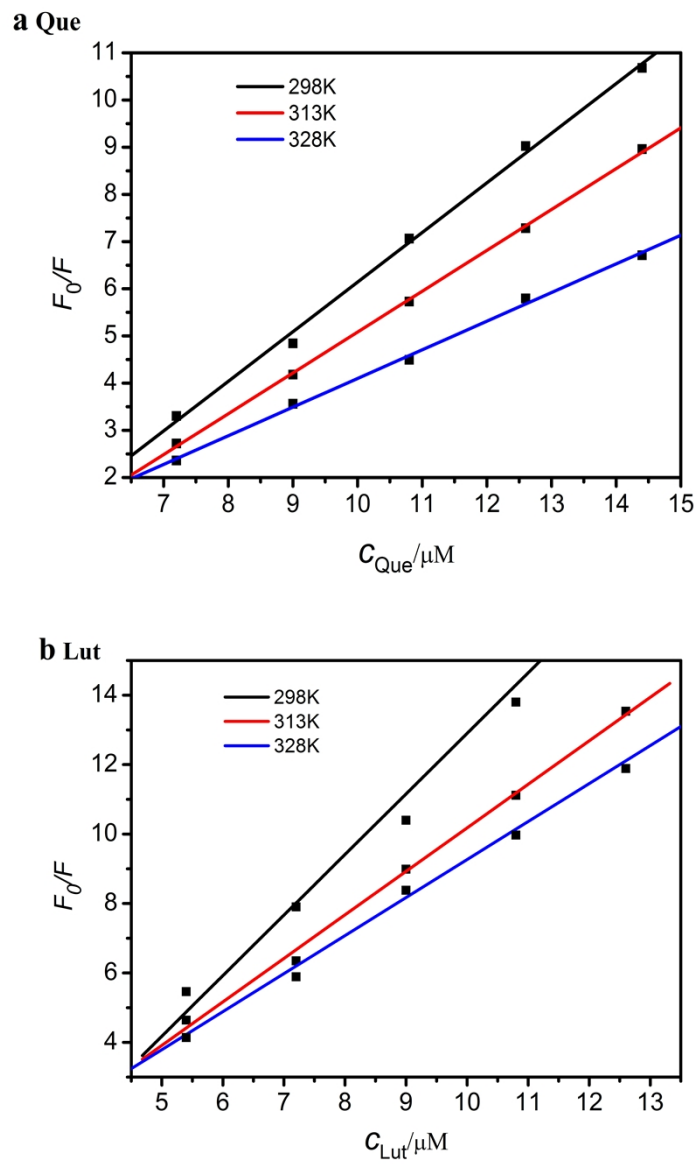
<sup>b</sup>College of Horticulture and Landscape Architecture, Southwest University, Chongqing 400716, PR China. E-mail: [xijuanzh@swu.edu.cn](mailto:xijuanzh@swu.edu.cn)

#### HPLC Analysis

The chromatographic separation was carried out on a Hitachi L-2000 HPLC system consisting of an auto-sampler and binary pump system coupled with a UV-Vis detector. 20  $\mu\text{L}$  of each sample solution was injected and analyzed by a Eclipse XBD-C18 column ( $4.6 \times 150$  mm,  $3.5 \mu\text{m}$ ) and the chromatogram was acquired at 350 nm for luteolin. The solvent system was a binary mobile phase: solution A was Milli-Q water containing 0.2% (*V:V*) phosphoric acid, solution B was methanol, and all the reagents were HPLC grade. The column temperature was kept at  $25^\circ\text{C}$  and the flow rate was  $1\text{ mL} \cdot \text{min}^{-1}$ .

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\* Corresponding author. Tel.: +86-23-68254659; Fax: +86-23-68367257;  
E-mail address: [xijuanzh@swu.edu.cn](mailto:xijuanzh@swu.edu.cn), [liyf@swu.edu.cn](mailto:liyf@swu.edu.cn)



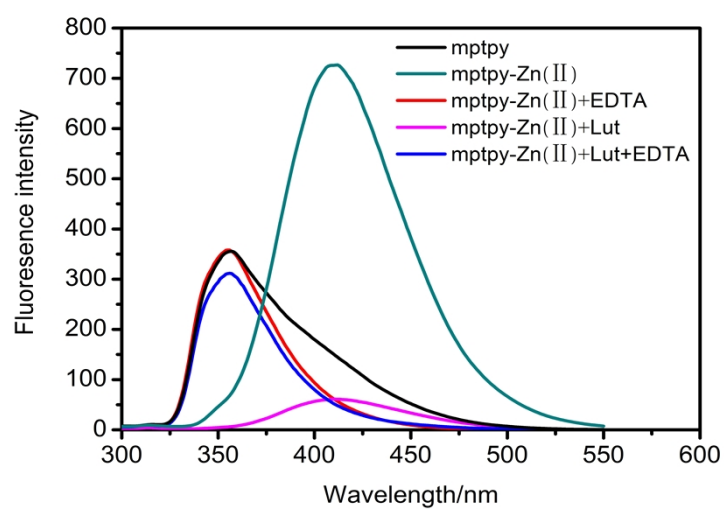
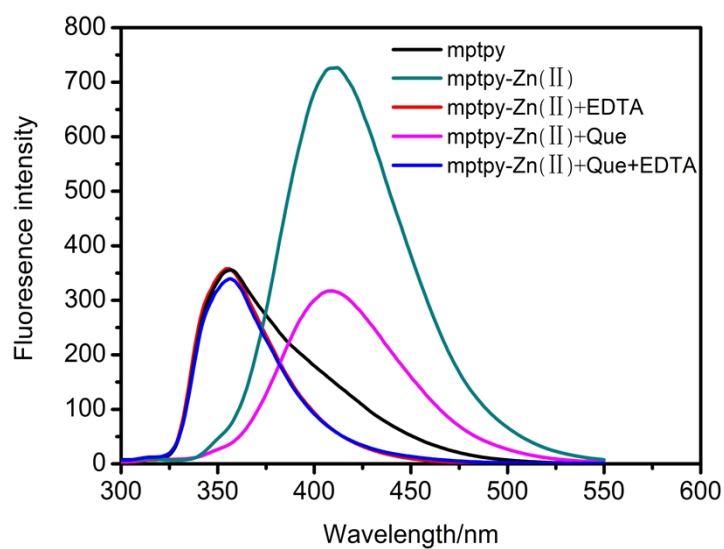
**Fig. S1** Plots of  $F_0/F$  versus concentrations of quercetin and luteolin.  $c_{\text{mptpy-Zn(II)}}$ , 2.1

$\mu\text{M}$ ;

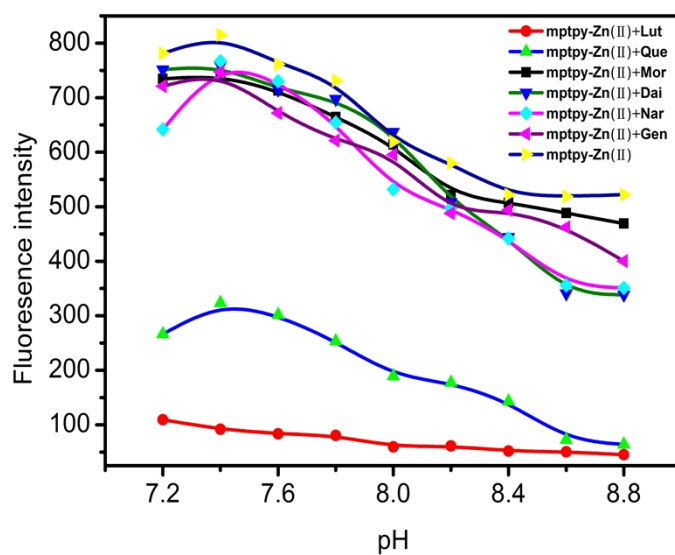
**Table S1** Stern-Volmer quenching constants of the Que and Lut at different temperatures

T/K	Que				Lut			
	$K_{SV}$ [10 <sup>6</sup> L·M <sup>-1</sup> ]	$K_q$ [10 <sup>14</sup> L·M <sup>-1</sup> ·S <sup>-1</sup> ]	R <sup>a</sup>	SD <sup>b</sup>	$K_{SV}$ [10 <sup>6</sup> L·M <sup>-1</sup> ]	$K_q$ [10 <sup>14</sup> L·M <sup>-1</sup> ·S <sup>-1</sup> ]	R <sup>a</sup>	SD <sup>b</sup>
298	1.052	3.987	0.9985	0.02	1.744	6.606	0.9911	0.04
313	0.8658	3.290	0.9997	0.03	1.253	4.746	0.9983	0.02
328	0.5852	2.217	0.9919	0.02	1.095	4.148	0.9976	0.03

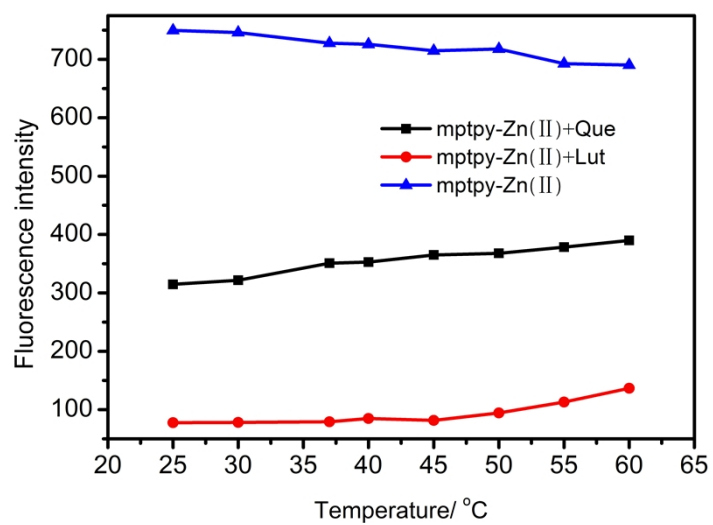
a is the correlation coefficient, b is the standard deviation.  $c_{\text{mpipy-Zn(II)}}$ , 2.1  $\mu\text{M}$ ;



**Fig. S2** Changes of the fluorescence emission of mptpy when added to  $Zn^{2+}$ , luteolin, quercetin and EDTA in succession.  $c_{mptpy}$ , 2.1  $\mu M$ ;  $c_{Zn^{2+}}$ , 2.1  $\mu M$ ;  $c_{Lut}=c_{Que}$ , 9.0  $\mu M$ ;  $c_{EDTA}$ , 1 mM;  $\lambda_{ex}$ , 280 nm;



**Fig. S3** Effect of various pH on fluorescence of mptpy-Zn(II) in the absence and presence of various flavonoids.  $c_{\text{mptpy-Zn(II)}}$ , 2.1  $\mu\text{M}$ ;  $c_{\text{Gen}} = c_{\text{Nar}} = c_{\text{Dai}} = c_{\text{Que}} = c_{\text{Lut}}$ , 9.0  $\mu\text{M}$ ;  $\lambda_{\text{ex}}$ , 280 nm;  $\lambda_{\text{em}}$ , 409 nm.



**Fig. S4** Effect of the temperature on fluorescence of mptpy-Zn(II) in the absence and presence of luteolin/queracetin.  $c_{\text{mptpy-Zn(II)}}$ , 2.1  $\mu\text{M}$ ;  $c_{\text{Que}}=c_{\text{Lut}}$ , 9.0  $\mu\text{M}$ ;  $\lambda_{\text{ex}}$ , 280 nm;  $\lambda_{\text{em}}$ , 409 nm; Tris-HCl, pH 7.4.

**Table S2** Effects of the coexisting substances

substance	$c_s/c_{Lut}$	$(F-F_0)/F_0 \times 100(\%)$	substance	$c_s/c_{Lut}$	$(F-F_0)/F_0 \times 100(\%)$
Na <sup>+</sup> , CO <sub>3</sub> <sup>2-</sup>	100	7.2	Na <sup>+</sup> , NO <sub>3</sub> <sup>-</sup>	80	-1.6
Na <sup>+</sup> , HCO <sub>3</sub> <sup>-</sup>	50	-1.7	Na <sup>+</sup> , SO <sub>4</sub> <sup>2-</sup>	60	-0.3
Na <sup>+</sup> , Cl <sup>-</sup>	80	2.6	glucose	100	4.8
K <sup>+</sup> , Cl <sup>-</sup>	80	3.0	fructose	80	1.3
Ca <sup>2+</sup> , Cl <sup>-</sup>	60	4.2	sucrose	100	8.3
Mg <sup>2+</sup> , Cl <sup>-</sup>	80	3.8			

$c_{mptpy-Zn(II)}$ , 2.1  $\mu$ M;  $c_{luteolin}$ , 9.0  $\mu$ M;  $\lambda_{ex}$ , 280 nm;  $\lambda_{em}$ , 409 nm; Tris-HCl, pH 7.4.  
 $c_s$  is the concentration of substance,  $c_{Lut}$  is the concentration of luteolin.

$F_0$  and  $F$  are the fluorescence intensity of luteolin interacting with mptpy-Zn(II) in the absence and presence of the interfering substances, respectively.