

## Supporting information

# Nonlinear optical response and biological applications of a series pyrimidine-based molecule for copper (II) ion probe

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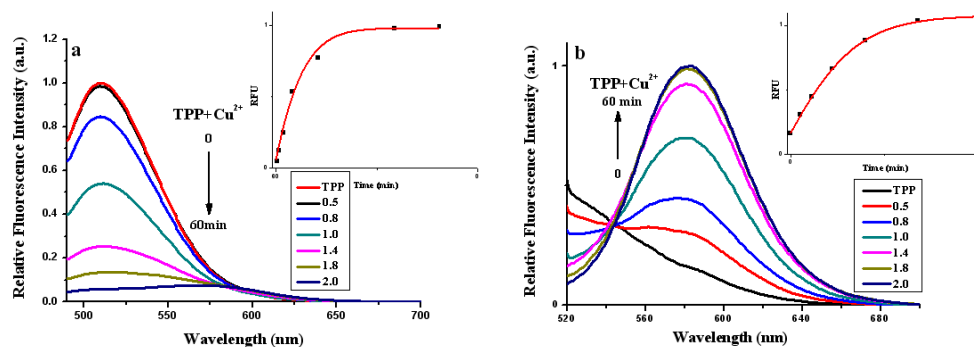
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**Figure S1** Time-dependent one-photon excited fluorescence emission spectra of TPP for various observation wavelengths .....2

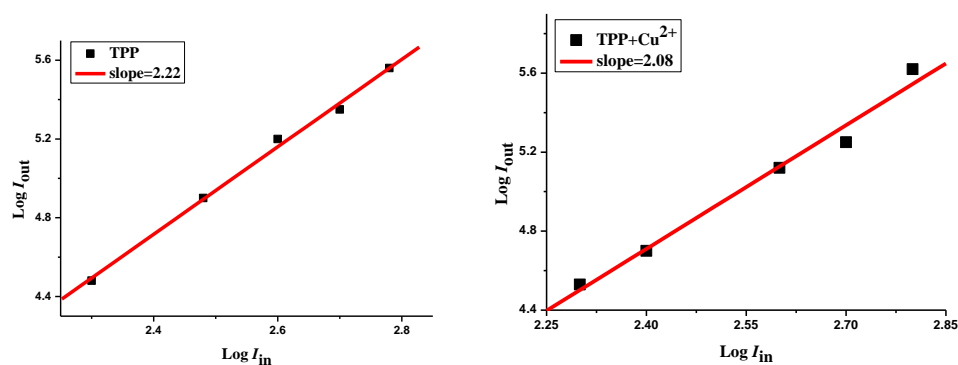
**Figure S2.** Log–Log linear of squared dependence of induced fluorescence signal and incident irradiance intensity of two ligands and complexes **TPP** and **TPP +Cu<sup>2+</sup>** .....2

**Figure S3.** Cytotoxicity data results obtained from the MTT assay.....2

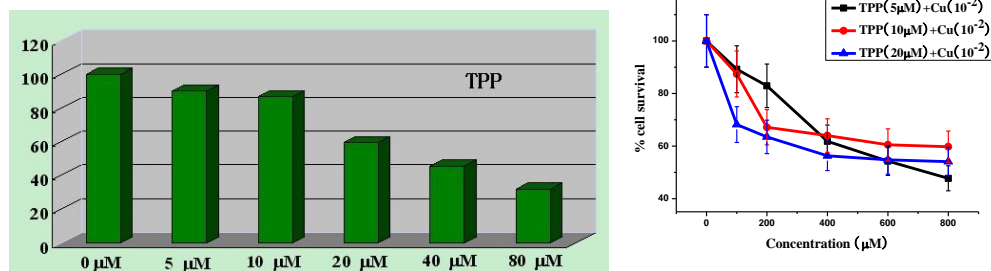
**Table S1** The oscillator strength  $\delta$  (a. u.), excitation energy **E** (eV) and wavelength  $\lambda$  (nm) of the eight lowest excited states of TPP (left) and **TPP** combine with Cu<sup>2+</sup> (right) in gas phase.....3



**Figure S1** Time-dependent one-photon excited fluorescence emission spectra of TPP for various observation wavelengths (a)  $\lambda_{ex}=400$  nm (b)  $\lambda_{ex}=504$  nm, respectively, over the course of 60 min.



**Figure S2.** Log-Log linear of squared dependence of induced fluorescence signal and incident irradiance intensity of two ligands and complexes TPP and TPP+Cu<sup>2+</sup>.



**Figure S3.** Cytotoxicity data results obtained from the MTT assay.

TPP			TPP combine with Cu <sup>2+</sup>		
E	$\lambda$	$\delta$	E	$\lambda$	$\delta$
3.1962	387.32	1.0686	1.7363	709.98	0.0165
3.6539	339.32	0.0041	1.9420	638.45	0.1500
3.7389	331.61	0.0028	2.1964	564.48	0.0019
4.2353	292.74	0.0501	2.5733	481.81	0.0005
4.3082	287.79	0.0168	2.6469	468.41	0.0000
4.6891	264.41	0.2941	2.9112	425.89	0.0519
4.7542	260.79	0.0005	2.9242	423.99	0.6396
4.8084	257.85	0.0395	3.0508	406.39	0.0008

**Table S1** The oscillator strength  $\delta$  (a. u.), excitation energy **E** (eV) and wavelength  $\lambda$  (nm) of the eight lowest excited states of TPP (left) and **TPP** combine with Cu<sup>2+</sup> (right) in gas phase