Electronic Supplementary Information (ESI) for New Journal of Chemistry.

Supporting Information for

Design of a β-diketonate–Eu^{3+} complex-based time-gated luminescence probe for visualizing mitochondrial singlet oxygen

Jing Wu,*[a] Yue Xing,[a] Huan Wang,[a] Hongjing Liu,[a] Mei Yang[a] and Jingli Yuan[b]

[a] School of Chemistry and Chemical Engineering, Liaoning Normal University, Dalian 116029, P. R. China. [b] State Key Laboratory of Fine Chemicals, School of Chemistry, Dalian University of Technology, Dalian 116024, P. R. China.

*Corresponding authors. Tel: +86-411-82158329

E-mail: wujing@lnnu.edu.cn

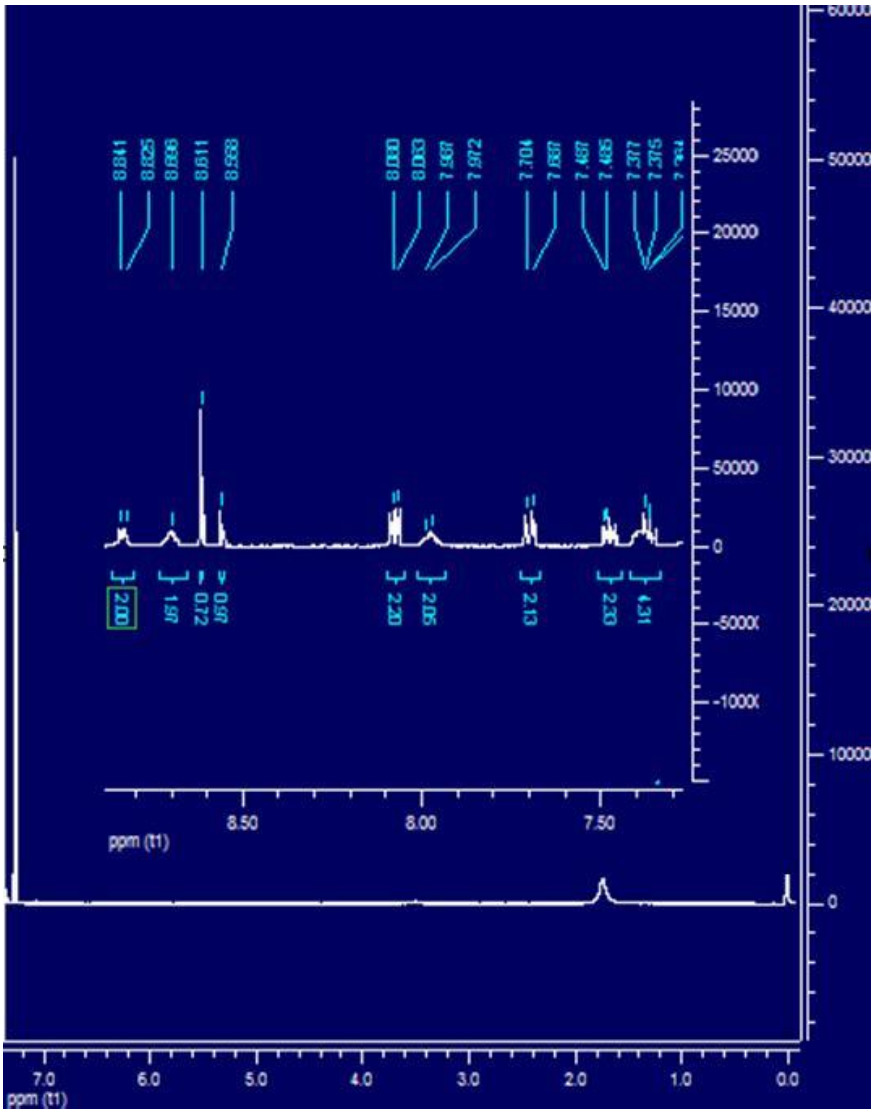

Fig. S1 ^{1}H NMR spectrum of ATPY.

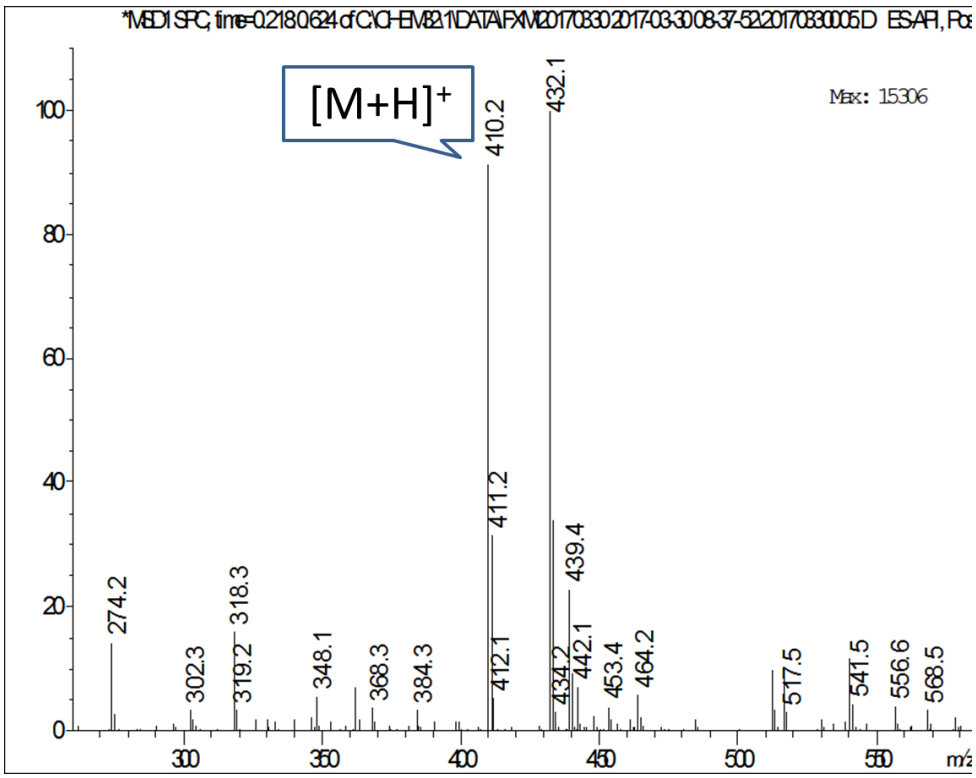

Fig. S2 ESI-mass spectrum of ATPY.

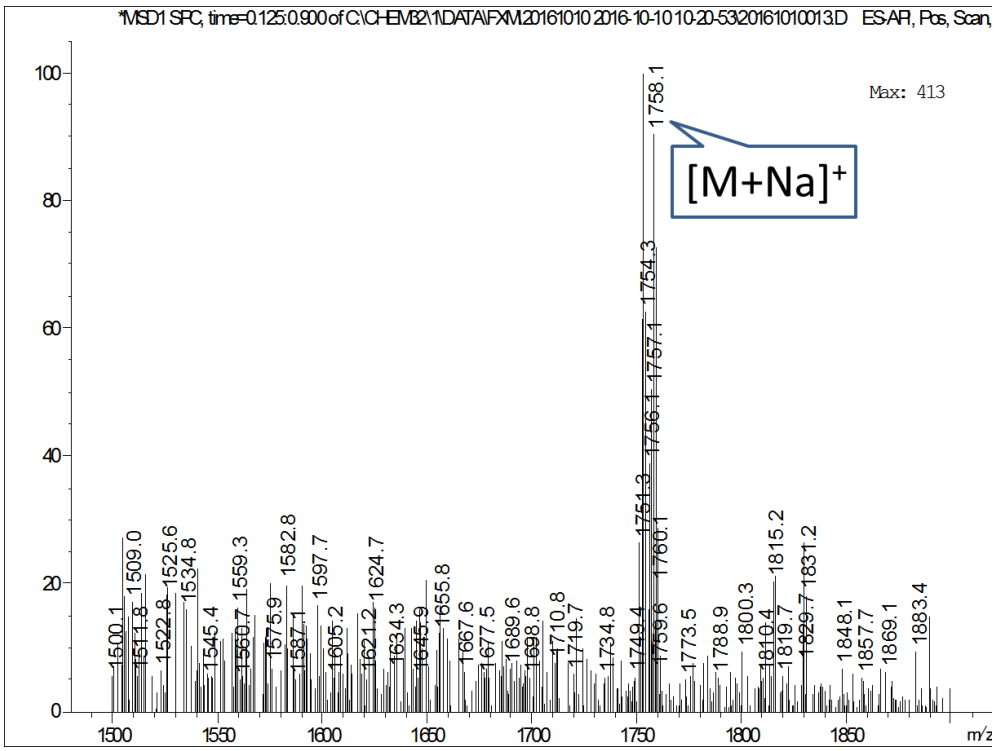

Fig. S3 ESI-mass spectrum of $Eu(DHH)_3(ATPY)$.

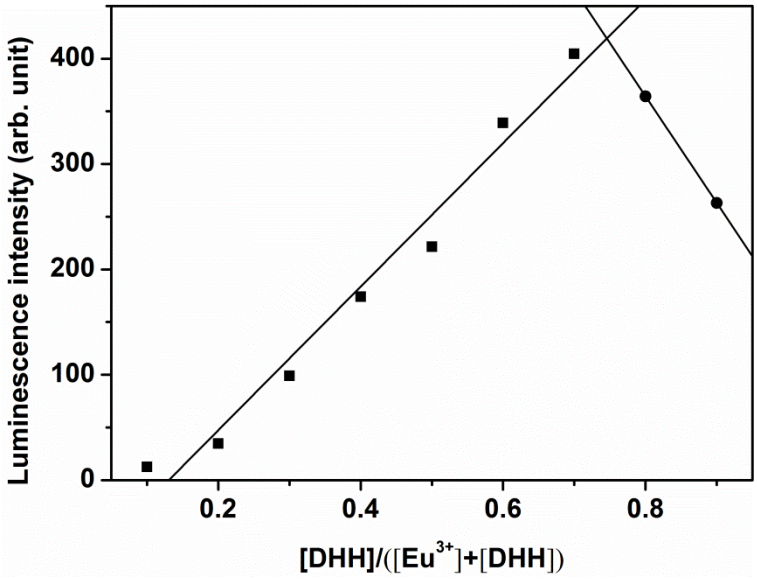

Fig. S4 Job's plot of the reaction between Eu^{3+} and DHH in 0.05 M borate buffer of pH 7.4 (the total concentration of Eu^{3+} and DHH was kept at 10 μM).

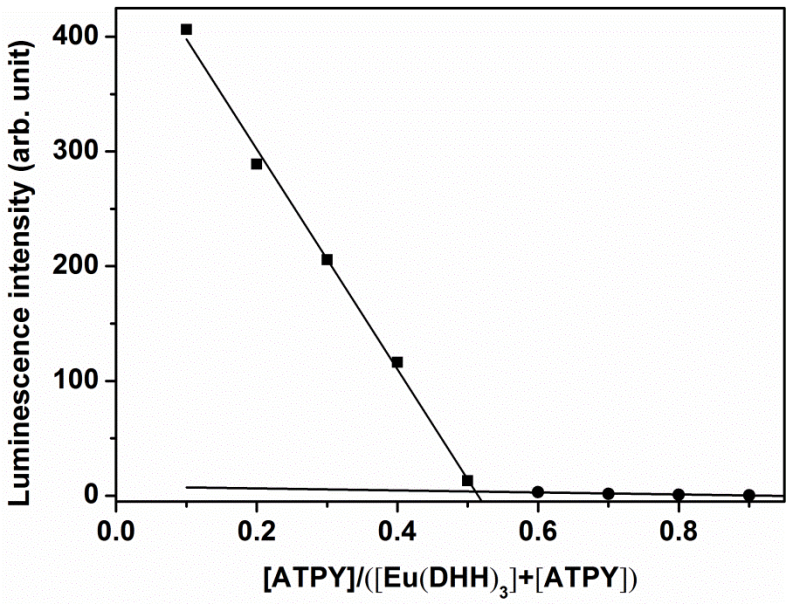

Fig. S5 Job's plot of the reaction between $Eu(DHH)_3$ and ATPY in 0.05 M borate buffer of pH 7.4 (the total concentration of $Eu(DHH)_3$ and ATPY was kept at 2 μM).

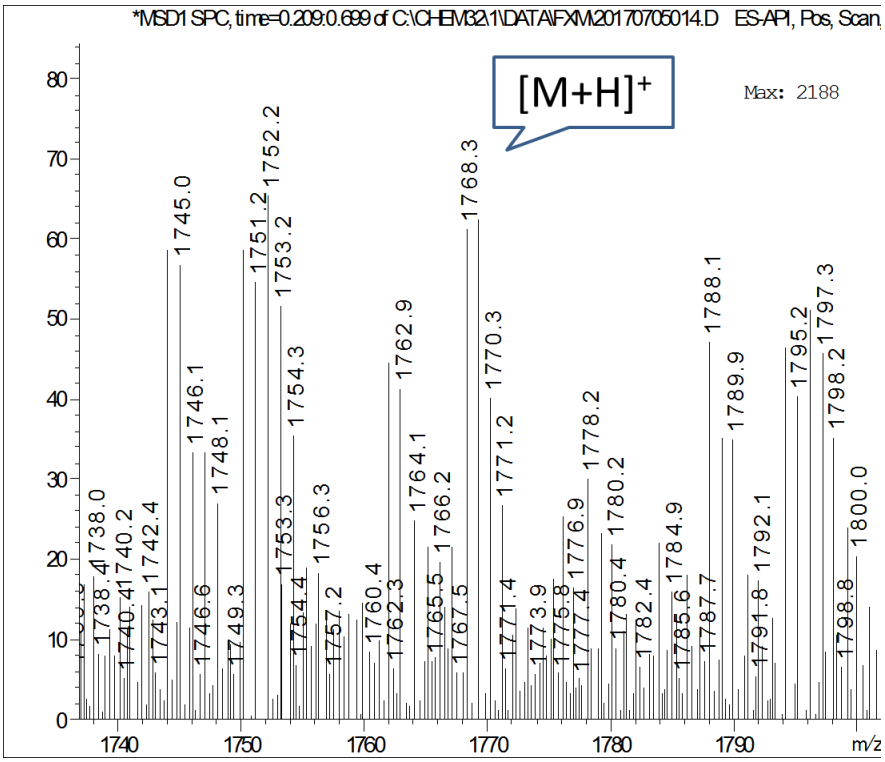

Fig. S6 ESI-mass spectrum of $Eu(DHH)_3(EP\text{-}ATPY)$.

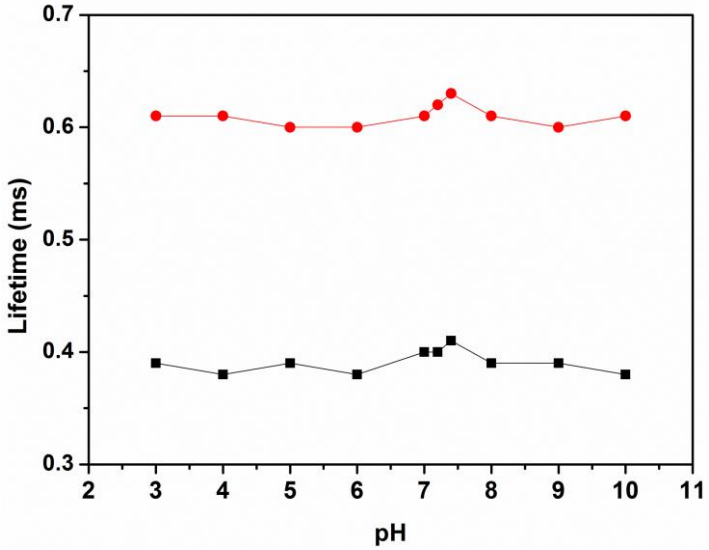

Fig. S7 Effects of pH on the luminescence lifetimes of $Eu(DHH)_3(ATPY)$ (1 μM, black line) and $Eu(DHH)_3(EP\text{-}ATPY)$ (1 μM, red line) in 0.05 M borate buffer.

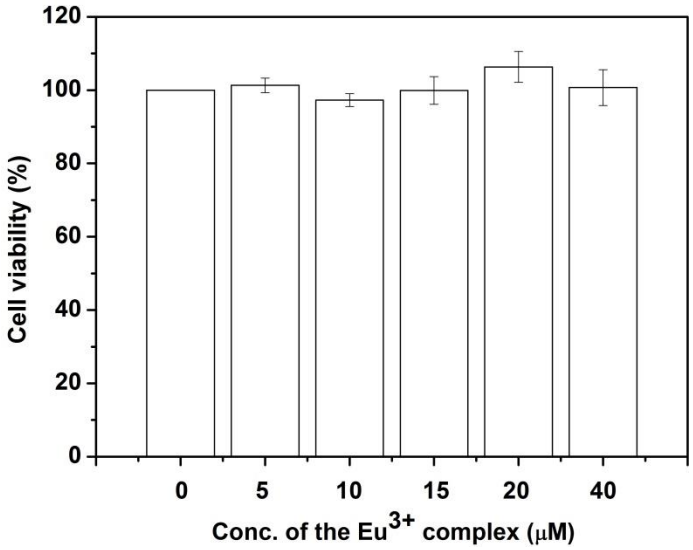

Fig. S8 Viabilities of the HepG2 cells after incubating with different concentrations of $Eu(DHH)_3(ATPY)$ for 24 h.

Table S1 Luminescence properties of $Eu(DHH)_3(ATPY)$ and $Eu(DHH)_3(EP\text{-}ATPY)$ in 0.05 M borate buffer of pH 7.4

Complex	$\lambda_{ex,max}$ (nm)	$\varepsilon_{334\ nm}$ ($cm^{-1}\ M^{-1}$)	$\lambda_{em,max}$ (nm)	Φ (%)	τ (ms)
$Eu(DHH)_3(ATPY)$	334	6.4×10^4	610	17	0.41
$Eu(DHH)_3(EP\text{-}ATPY)$	334	9.6×10^4	610	53	0.63