

Supporting information

An ATP-selective, Lanthanide Complex Luminescent Probe

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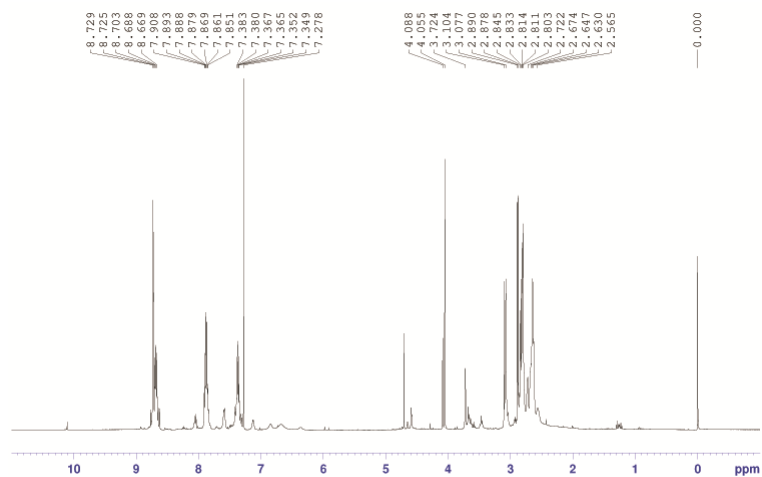


Fig. S1 ^1H NMR spectrum of the ligand **5** (CDCl_3 , 400 MHz).

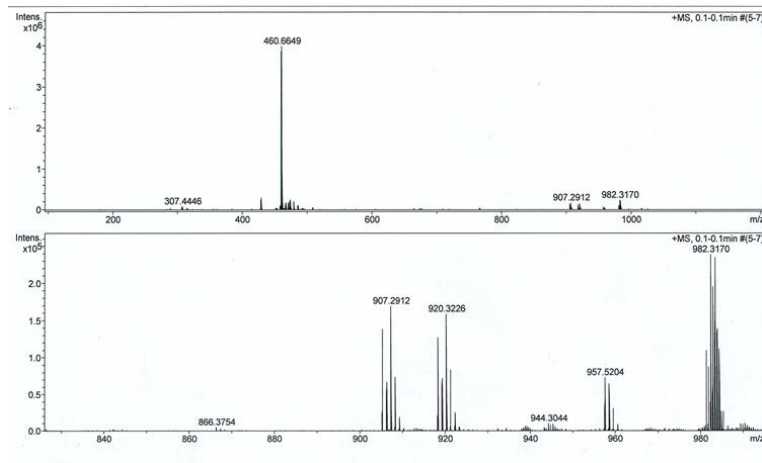


Fig. S2 Mass spectra of probe **1**.

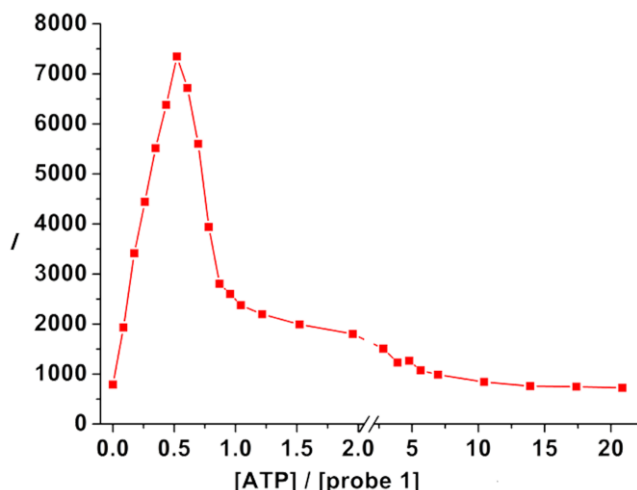


Fig. S3 Luminescence titrations of probe **1** with ATP in pure water at pH 6.8 (30 mM HEPES) with an excitation at 335 nm (excitation slit width = 10 nm and emission slit width = 5 nm).

The association constant was calculated using a modified Benesi-Hildebrand equation [Eq. (1)]^{1a} from the results of fluorescence titration.¹

$$\frac{1}{F - F_0} = \frac{1}{K^{0.5}(F_{\max} - F_0)[M^{n-}]^{0.5}} + \frac{1}{F_{\max} - F_0} \quad (1)$$

where F_0 , F_{\max} , and F represent the luminescence intensity of probe **1**, the maximum luminescence intensity observed in the presence of ATP, and the luminescence intensity at a certain concentration of ATP, respectively. K is the association constant (M^{-2}) and was determined from the slope of the linear plot, and $[M^{n-}]$ is the concentration of ATP added during the luminescence titrations.

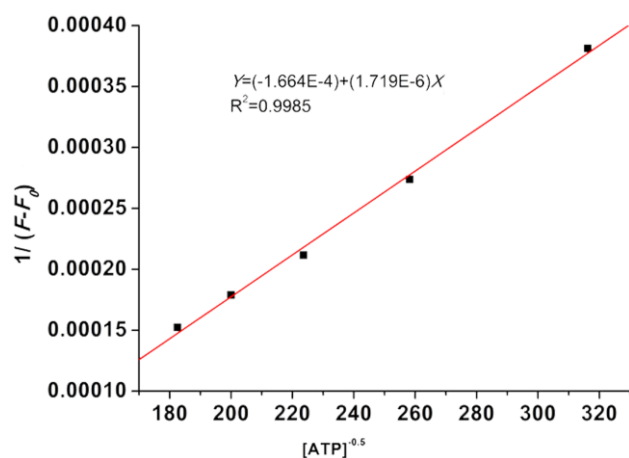


Fig. 3 Corresponding linear regression plot of $1/(F-F_0)$ vs. $[ATP]^{0.5}$.

References for supporting information

- 1 (a) W. Wu, Z. Sun, Y. Zhang, J. Xu, H. Yu, X. Liu, Q. Wang, W. Liu and Y. Tang, *Chem. Commun.*, 2012, **48**, 11017; (b) S. Sukdeb, M. Prasenjit, R. G. Upendar, E. Suresh, C. Arindam, B. Mithu, K. G. Sudip and D. Amitava, *Inorg. Chem.*, 2012, **51**, 336; (c) Y. Hong, Z. Zhou, K. Huang, M. Yu, F. Li, T. Yi and C. Huang, *Org. Lett.*, 2007, **9**, 4729.