

Electronic Supporting Information

**Metal ion Induced Fluorescence Resonance Energy Transfer  
between Crown Ether Functionalized Quantum dots and  
Rhodamine B: Selectivity of K<sup>+</sup> ion**

Hsin-Lung Lee,<sup>a</sup> Namasivayam Dhenadhayalan<sup>a</sup> and King-Chuen Lin\*

Department of Chemistry, National Taiwan University, Taipei 106, and  
Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei 106, Taiwan.

Email: [kclin@ntu.edu.tw](mailto:kclin@ntu.edu.tw)

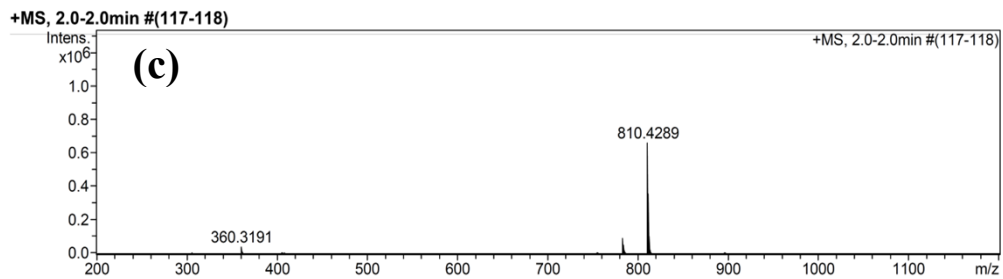
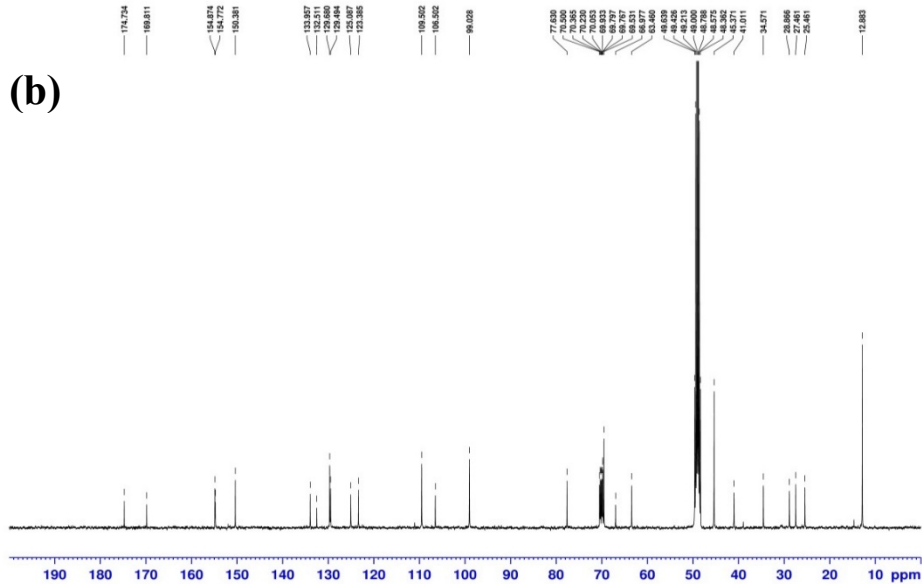
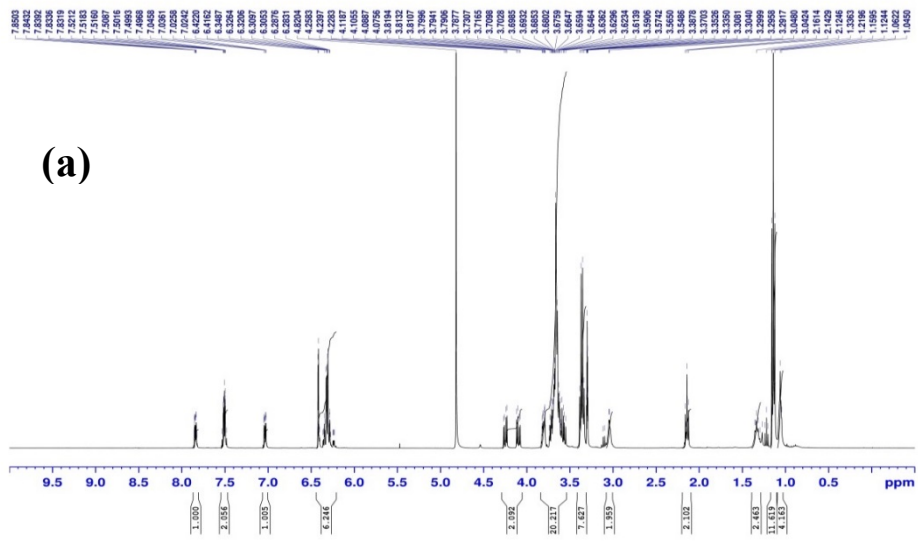
Fax: +886-2-2362-1483; Tel: +886-2-3366-1162.

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**Fig. S1**  $^1\text{H}$  NMR (a) and  $^{13}\text{C}$  NMR (b) of Boc-6-Ahx-15-Crown-5.



**Fig.**  
S2  
<sup>1</sup>H

NMR (a), <sup>13</sup>C NMR (b) and ESI-MS (c) of RBCE.

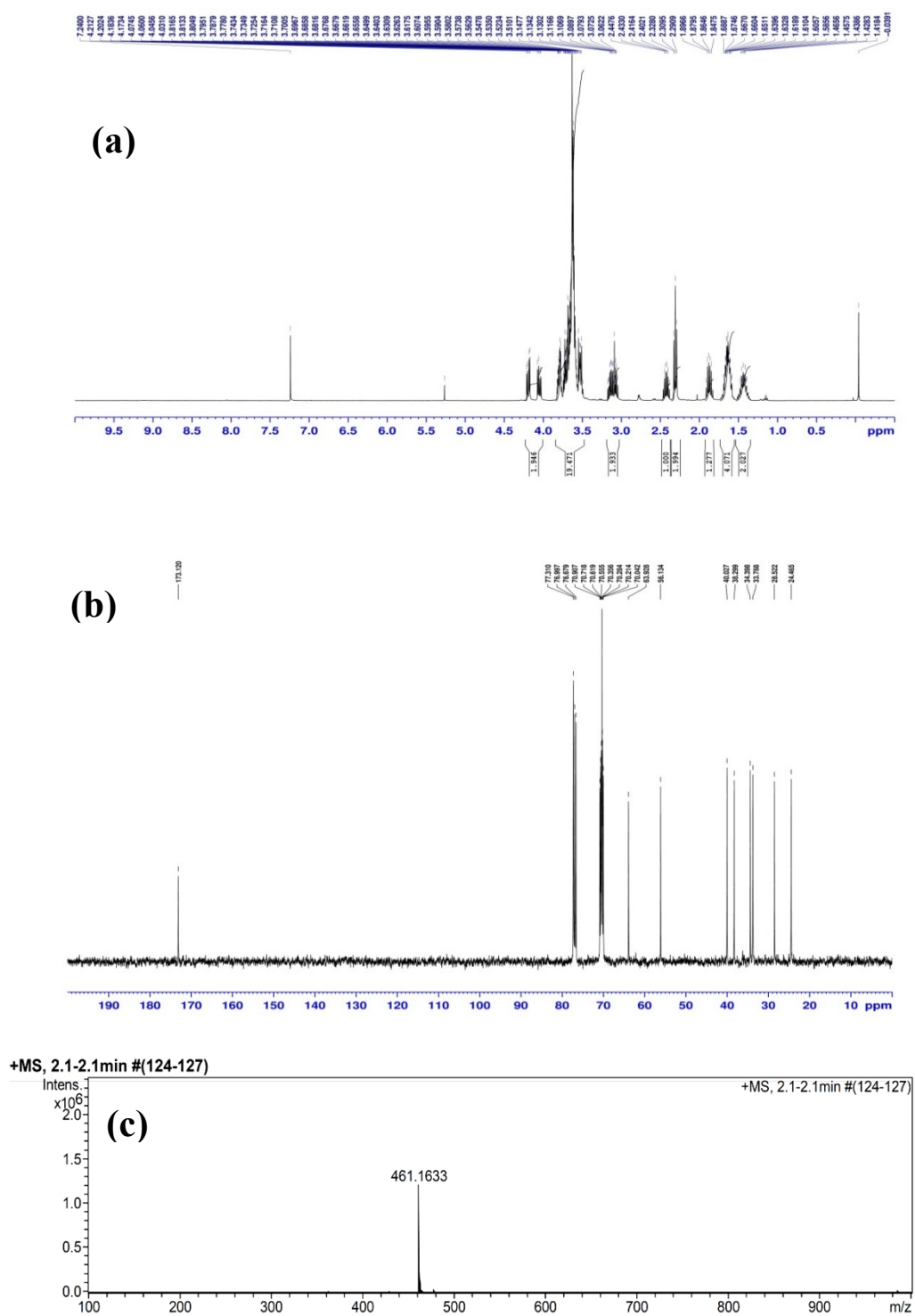
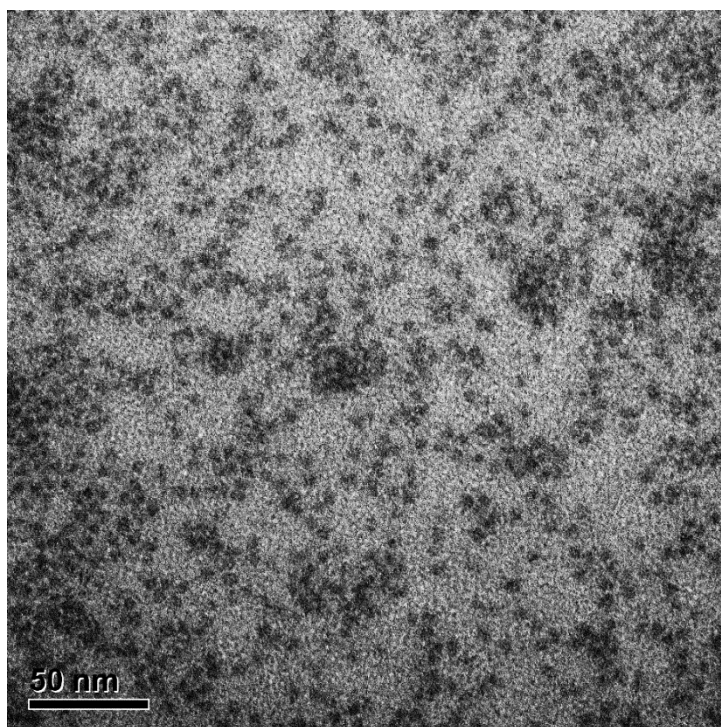


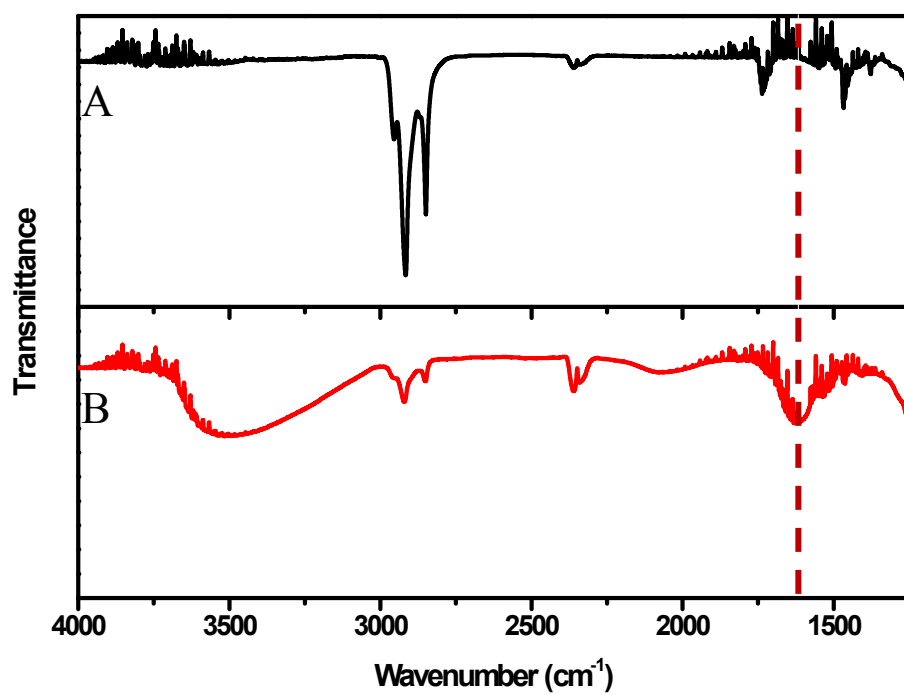
Fig.

**S3**  $^1\text{H}$  NMR (a),  $^{13}\text{C}$  NMR (b) and ESI-MS (c) of 15-crown-5-DHLA.



**Fig. S4** TEM image of CdSe/ZnS capped 15-crown-5.

**Fig. S5** FTIR spectra of (A) CdSe/ZnS capped octadecylamine and (B) CdSe/ZnS capped 15-crown-5.



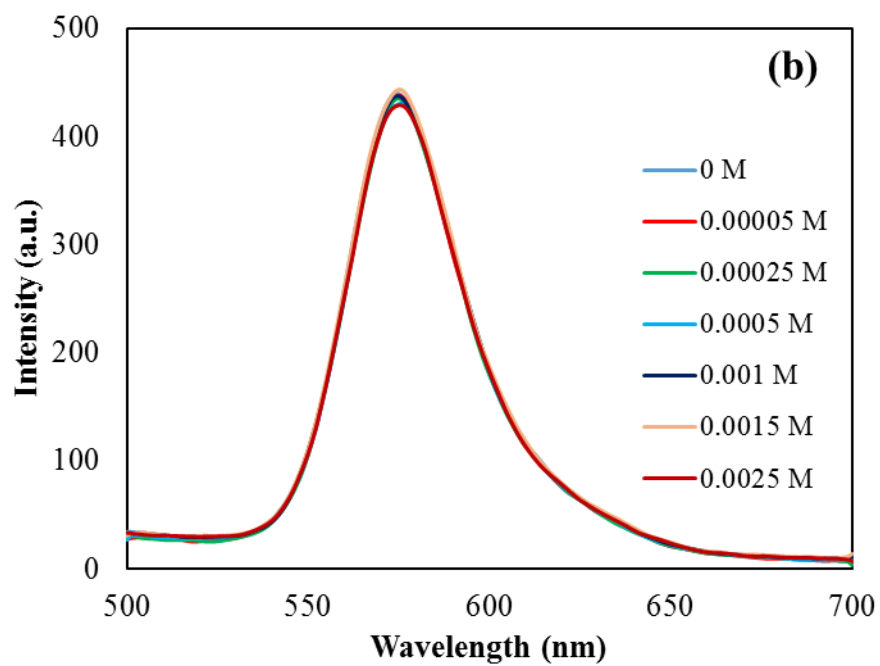
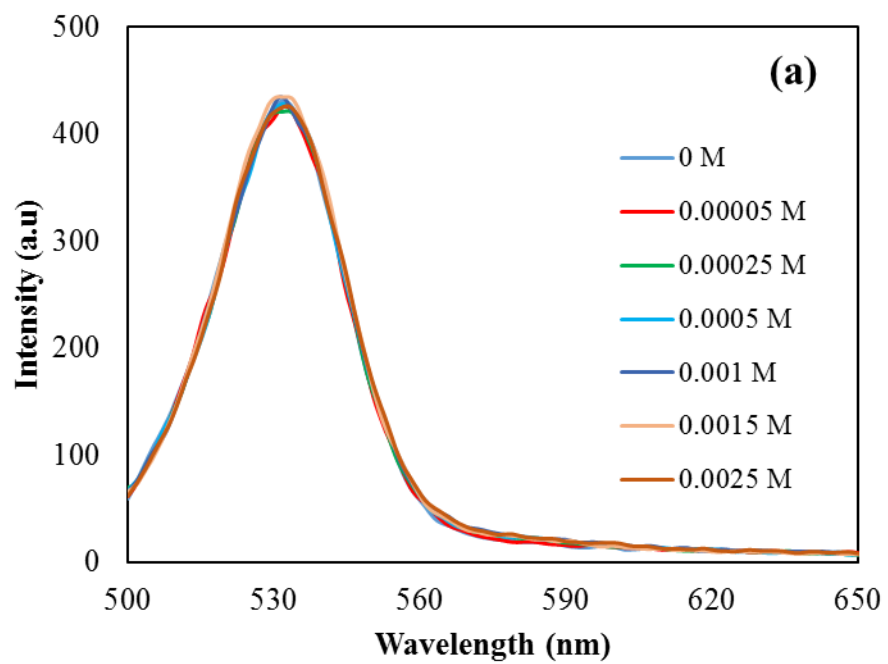
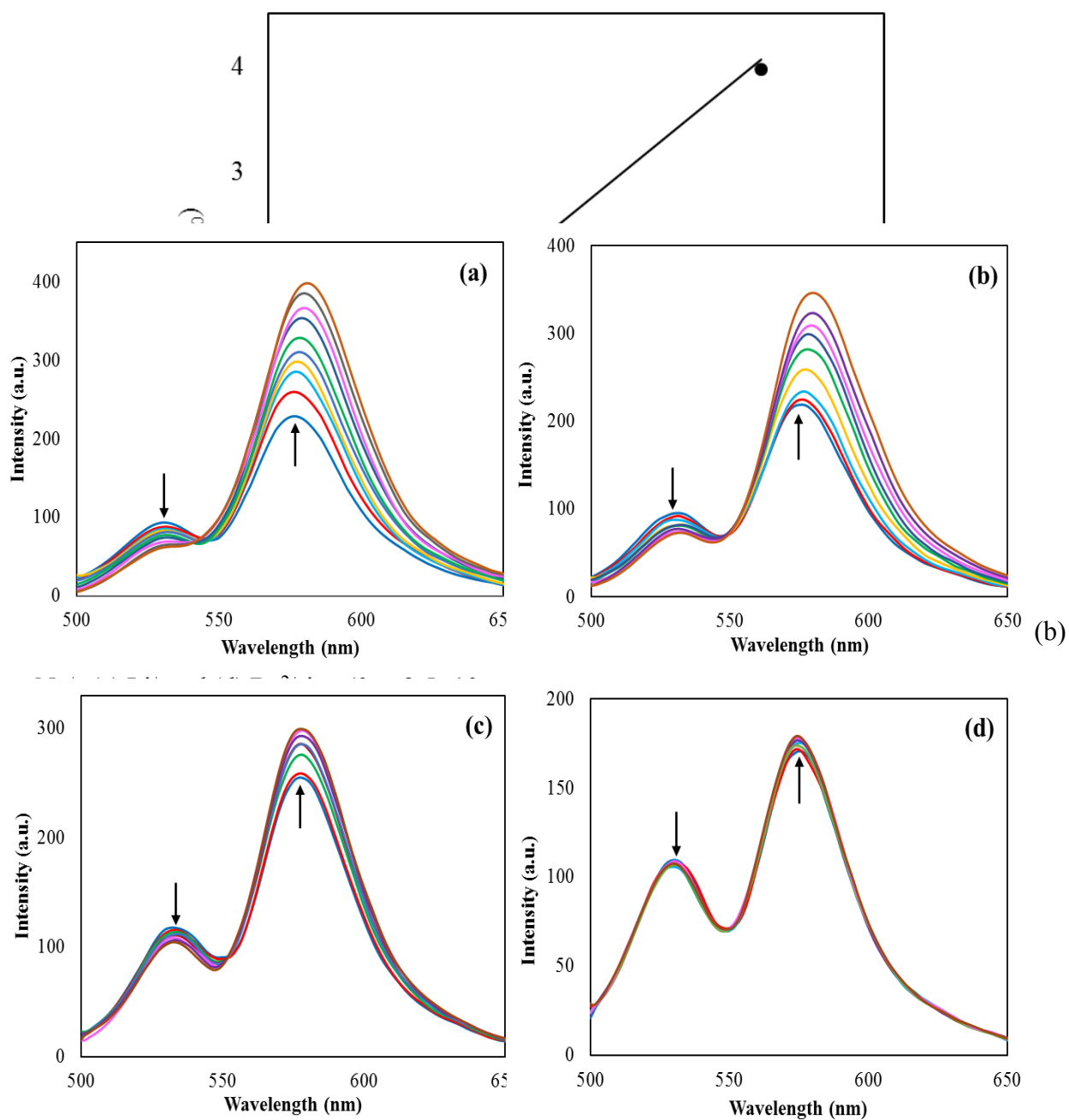


Fig.  
S6



Fluorescence spectra of (a) QDCE and (b) RBCE with different concentration of  $K^+$  ion (0 to  $2.5 \times 10^{-3}$  M) in pH 8.3 buffer.  $\lambda_{ex} = 375$  nm.



**Fig. S8** Benesi-Hildebrand plot of  $1/F-F_0$  versus  $1/[K^+]$  for the QDCE-RBCE conjugate.

$F_0$  and  $F$  are the fluorescence intensity ratio changes  $F_{575}/F_{530}$  in the absence and presence different concentration of  $K^+$  ion.